

aJ-Orion™ User's Manual
January 8, 2013

iPhone Version 4.0
aJ-Orion Home Security System
aJile Systems, Inc.

© Copyright aJile Systems, Inc. 2012

All Rights Reserved.

aJ-Orion is a trademark of aJile Systems, Inc. Google and Gmail are trademarks of Google Inc. in the United States and other countries. All other trademarks are the property of their respective owners.

All information in this document is subject to change without notice. The information contained in this document does not affect aJile Systems' product specification or warranties. Nothing in this document shall operate as license or is with express or implied warranty.

THE INFORMATION CONTAINED IN THIS DOCUMENT IS PROVIDED ON AN "AS IS" BASIS. In no event will aJile Systems be liable for damages arising directly or indirectly from any use of the information contained in this document.

Table of Contents

Chapter 1: Overview	1
1.1. Warranty	2
Chapter 2: Setup and Configuration	3
2.1. Getting Started	3
2.2. aJ-Orion Client Application Installation	3
2.3. aJ-Orion Client Application Setup Procedure	4
2.4. aJ-Orion Device Setup	6
2.5. aJ-Orion Client Application Startup Procedure	6
Chapter 3: Operations	8
3.1. Status	8
3.2. Alerts	9
3.3. Monitoring	10
3.4. Viewing Alerts	11
3.5. Viewing Images	12
3.6. Node list	13
3.7. Console	14
Appendix A: FAQs and Trouble Shooting	15
A.1. FAQs	15
A.1.1. Are image list if an alert is missed?	15
A.1.2. How can previously received images be viewed?	15
A.1.3. How many images can be stored on the aJ-Orion device?	15
A.2. Video playback and streaming video	15
A.2.1. Streaming video port forwarding	15
A.3. Trouble Shooting	16
A.3.1. aJ-Orion client application popup message “Unable to connect to aJ-Orion”	16
A.3.2. aJ-Orion client application status shows “Not connected to Server”	16
A.3.3. aJ-Orion application status shows “Not connected to aJ-Orion”	16
A.4. Revising system settings	17
A.4.1. Changing server accounts	17
A.4.2. Changing network configuration	17

CHAPTER 1: OVERVIEW

The aJile aJ-Orion Home Security System is a compact portable network security device that detects intrusion, captures intruder's image, and sends alerts to an application on a smart phone. The aJile security device is based on a unique patented intrusion technology that can detect intrusion into a premises with a floor space up to 2000 SF in an enclosed environment. It also combines an integrated image / video capture, live monitoring, and flexible network capability including LAN and WIFI into a single box. It's a portable security system that moves with you, and travel with you if you move to a new place. It just requires a simple installation, and will adapt to your new place quickly and easily. The aJ-Orion is intended for apartments, condos, small houses, offices, retail shops, mobile homes, containers, and boats/yachts

The aJ-Orion Home Security System consists of the following components as shown in Figure 1-1 below.

aJ-Orion Home Security Device	Ethernet Crossover Cable	Power Adapter
		

Figure 1-1: aJ-Orion Home Security System

The aJ-Orion Home Security System requires the user to provide a WIFI capable smart phone (Android or iPhone) with data service plan (3G recommended).

1.1. Warranty

aJile Products warrants to you, the original purchaser of this Product, that this product shall be free of defects in material or workmanship for the Warranty Period of one (1) year as follows:

1. LABOR: During the Warranty Period if this Product is determined to be defective, Insignia will repair or replace the Product, at its option at no charge, or pay the labor charges to any aJile authorized service facility. After the Warranty Period, you must pay for all labor charges.
2. PARTS: In addition, aJile will supply, at no charge, new or rebuilt replacement parts in exchange for defective parts for the Warranty Period. After the Warranty Period, you must pay all parts costs.

To obtain warranty service, you must take the Product with your original receipt or other proof of purchase, either in its original packaging or packaging affording an equal degree of protection, to your nearest retail store location of the store or online web site from which you purchased the Product.

This warranty does not cover cosmetic damage or damage due to acts of God, lightning strikes, accident, misuse, abuse, negligence, commercial use, or modification of, or to any part of the Product, including the antenna. This warranty does not cover damage due to improper operation or maintenance, connection to improper voltage supply, or attempted repair by anyone other than a facility authorized by aJile to service the Product. This warranty does not cover Products sold AS IS or WITH ALL FAULTS, or consumables (such as fuses or batteries). This warranty is valid only in the United States and Canada.

This warranty is invalid if the factory applied serial number has been altered or removed from the Product.

REPAIR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER. aJile SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, ANY IMPLIED WARRANTY, REPRESENTATION OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY.

Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state, or province to province.

For customer service please call 1-408-557-0829

www.security.aJile.com

aJile Systems Inc, San Jose, California, U.S.A.

CHAPTER 2: SETUP AND CONFIGURATION

2.1. Getting Started

The following information is needed before setting up and configuring the aJ-Orion Home Security System.

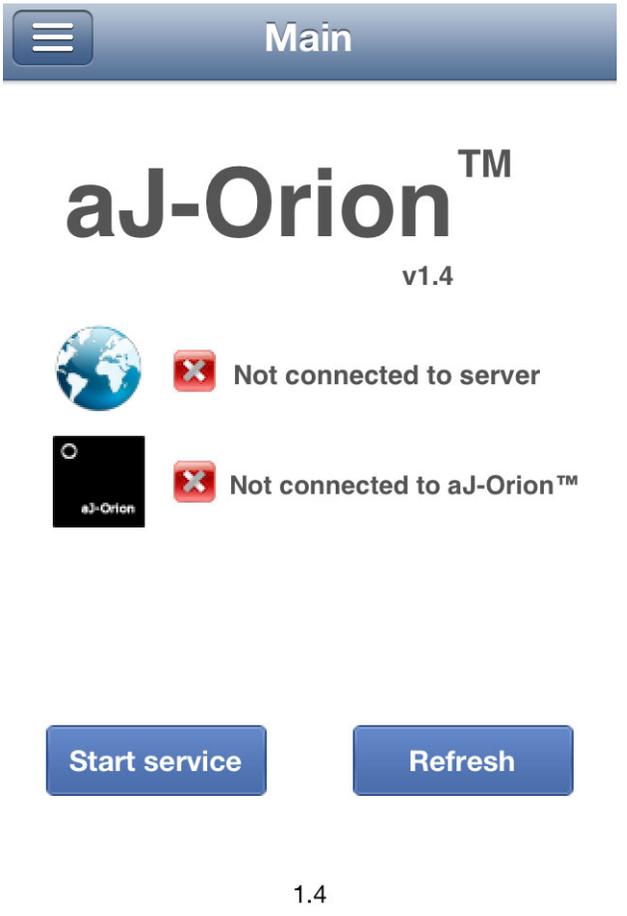
- Google Gmail account ID and password - [Sign up for a Gmail account](#).
- If using wireless networking (WLAN), obtain the WLAN network name (SSID) and Security Key if security is enabled.

IMPORTANT:

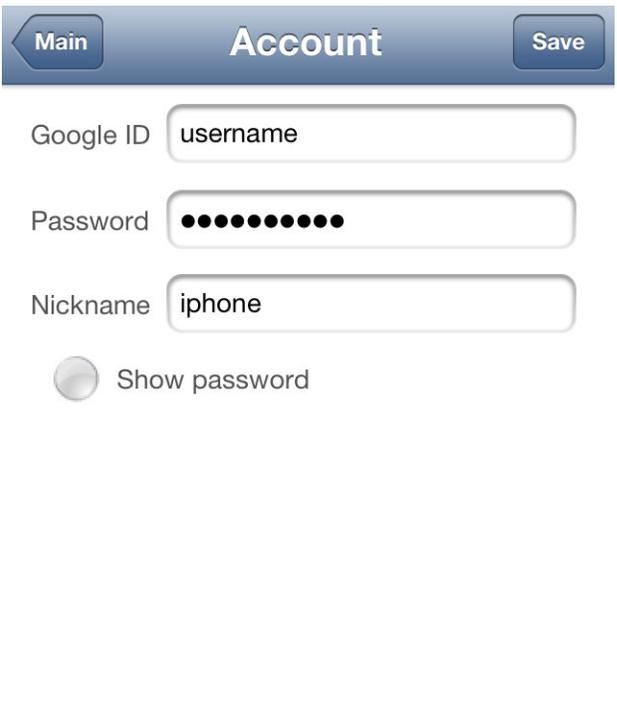
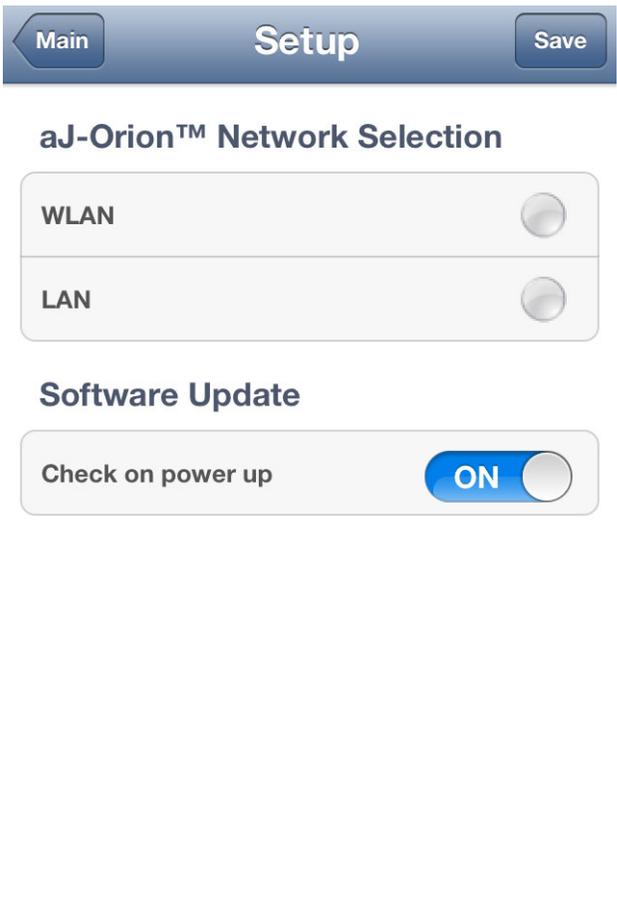
- **A wireless router with LAN network ports is needed.**
- **To support the optional streaming video from the aJ-Orion device, UPnP needs to be enabled on the router. In addition, port forwarding for the aJ-Orion device needs to be enabled for the port range of 8800 to 8899. (The IP address of the aJ-Orion device is statically configured during setup.)**
- **For initial configuration, the aJ-Orion needs to be connected to the router via the provided Ethernet cable.**
- **An iPhone needs to be connected wirelessly to the same router.**

The aJ-Orion User Manual and additional information is available from the aJile website (www.security.ajile.com)

2.2. aJ-Orion Client Application Installation

<ol style="list-style-type: none">1 For iPhone devices, download the aJ-Orion client application via the Apps Store. Select the “Search” button and search for “aj-orion”.2 Launch aJ-Orion client application “aJOrion” from the smart phone’s desktop screen. Upon launching the app, the main screen appears as shown at the right.	
---	---

2.3. aJ-Orion Client Application Setup Procedure

<p>3 From the Main screen select the application menu button (upper left corner of the screen) and select the “Account” item. The Account screen will be displayed as shown at the right.</p> <p>Enter the Google Gmail “User” name (for xxx@gmail.com enter only xxx) and “Password” in the associated fields.</p> <p>Check the “Show Password” box if you need to see the password to verify.</p> <p>The “Nickname” field uniquely identifies the aJ-Orion client application from others that may be registered with the aJ-Orion device. A default nickname is provided but needs to be changed if the nickname is already in use.</p> <p>Select “Save” when the settings have been entered. A confirmation popup message will be displayed if the account is recognized. Otherwise a message will indicate to check the settings.</p>	
<p>4 Return to the Main screen. From the Main screen select the application menu button (upper left corner of the screen) and select the “Setup” item. The Setup screen will be displayed as shown at the right.</p> <p>5 By default, the software automatically checks for software update on power up. If you do not want to update software automatically, then select “OFF”.</p> <p>NOTE: When aJ-Orion device determines an new version is available, the software will be downloaded automatically. The download via WLAN typically takes 12 minutes or about 3 minutes via LAN configuration.</p> <p>6 Select the desired network connection to be used by the aJ-Orion device and continue with the associated screen below.</p>	

7 If “WLAN” network connection is selected then the current WLAN configuration fields are displayed as shown at the right.

The smart phone’s current WLAN configuration settings can be retrieved via selecting the “Import Settings” button. **Note that if the Wi-Fi network has security enabled, the “Security Key” field must be entered manually.**

NOTE: Only AES encryption is supported.

8 The “IP Address” field is automatically filled in with an available static IP address that can be modified as needed. **Note that the router may need to be configured to allow port forwarding to this address (see Section A.2.2. Streaming video port forwarding).**

9 Proceed to step 11 to prepare the aJ-Orion device to receive the network configuration settings.

The screenshot shows the 'WLAN Settings' screen. At the top, there is a 'Setup' button on the left and an 'Import SSID' button on the right. The main content area includes:

- Network SSID:** A text field containing 'WirelessNetwork'.
- Band:** Two radio buttons, 'B/G' (selected) and 'N'.
- Channel:** A text field containing 'Auto'.
- Security:** Four radio buttons: 'No security', 'WPA/WPA2' (selected), 'WEP (64-bit)', and 'WEP (128-bit)'.
- Security Key:** A text field with ten dots representing a masked password.
- Show password:** A radio button.
- IP Address:** A text field containing '192.168.0.8'.

10 If “LAN” network connection is selected then the current LAN configuration fields are displayed as shown at the right.

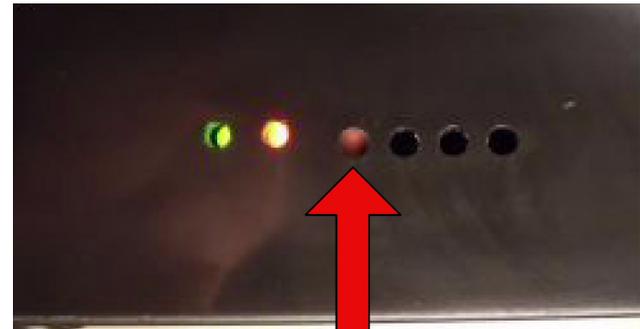
The “IP Address” field is automatically filled in with an available static IP address that can be modified as needed. **Note that the router may need to be configured to allow port forwarding to this address (see Section A.2.2. Streaming video port forwarding).**

The screenshot shows the 'LAN Settings' screen. At the top, there is a 'Setup' button on the left. The main content area includes:

- IP Address:** A text field containing '192.168.0.6'.

2.4. aJ-Orion Device Setup

- 11 Connect the provided Ethernet cable between the aJ-Orion device and the router.
- 12 Connect the provided power supply to the aJ-Orion and move the power switch to the on position. The aJ-Orion device requires about 40 seconds to initialize before sounding one short beep.
- 13 If the aJ-Orion has been previously configured, then press and release the reset button (next to the red light) **immediately after the short beep**. The reset button is recessed in the case such that a paper clip wire is needed to reach it.



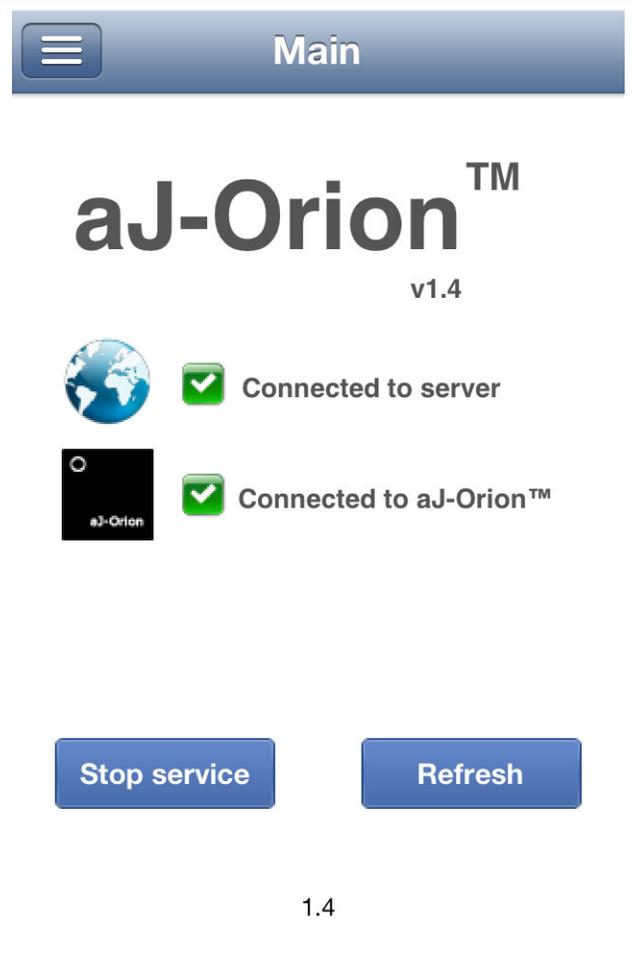
Reset Button

2.5. aJ-Orion Client Application Startup Procedure

- 14 Return to the Setup screen and select the “Save” button to save the network settings to the aJ-Orion device. Two short beeps from the aJ-Orion device signal it has received the configuration information.

NOTE: If the aJ-Orion device begins beeping once every 2 seconds then the device is downloading a new version of software. The download via WLAN will take approximately 10 minutes or about 3 minutes via LAN configuration.

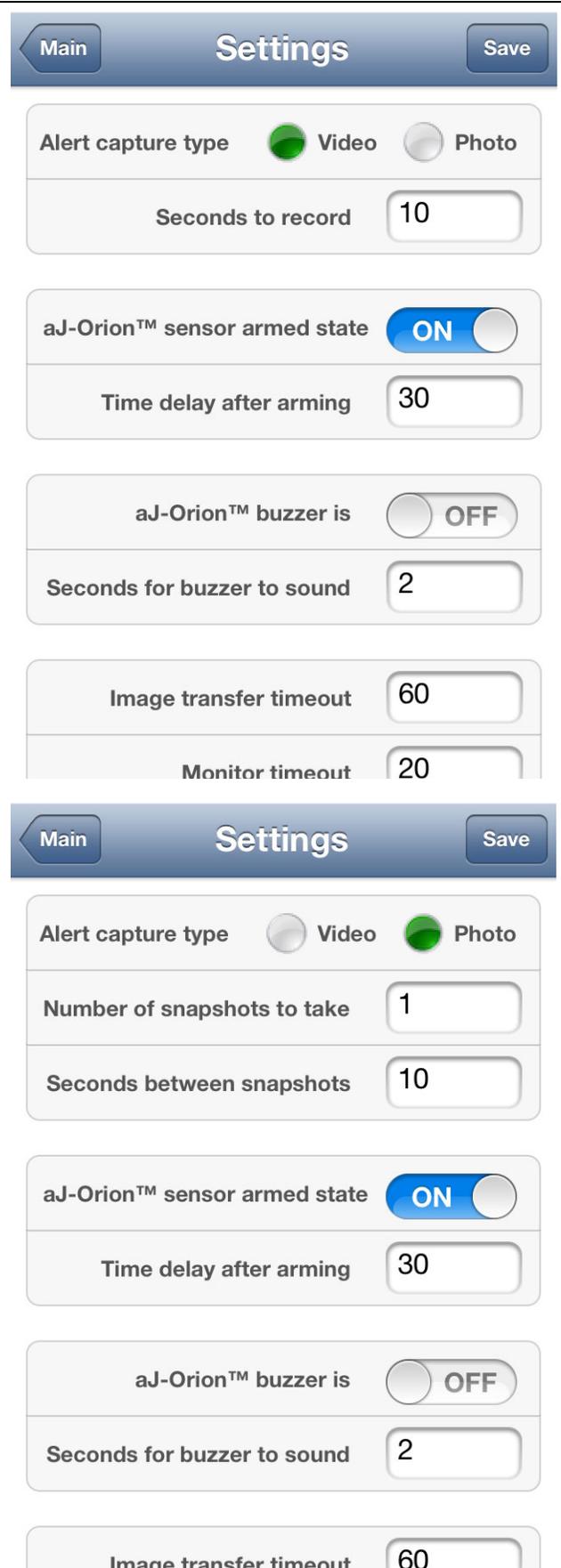
- 15 The aJ-Orion client application is now ready to connect to the server. From the Main screen select the “Start service” button. The main screen will update the system status indicators as follows:
 - The server connection status will change to a green check box and indicate “Connected to server”. **If the red x box remains then verify/ update the server account setting in step 3.**
 - The aJ-Orion device connection will change to a green check box and indicate “Connected to aJ-Orion” within a minute. The aJ-Orion device will sound 3 short beeps when ready. The Ethernet cable can be removed if using WLAN network. **If the red x box remains after 2 minutes then restart the network setup starting at step 4.**



16 Optionally, the aJ-Orion device response and messages can be customized. From the Main screen select the application menu button (upper left corner of the screen) and select the “Message Settings” item. The Setting page will be displayed when the connection with the aJ-Orion device is achieved as shown at the right. The settings are described below:

- **Alert capture type:** Select between capturing “Video” (MPEG) or “Photo” (JPEG) images when an alert is detected.
- **Seconds to record:** The recording time when alert “Video” capture is selected.
- **Number of snapshot to take:** For each alert, 1 to 10 “Photo” images are captured.
- **Seconds between snapshots:** When multiple snapshots are specified, the time between images can be specified between 1 and 10 seconds.
- **aJ-Orion sensor armed state:** The aJ-Orion device can be armed/disarmed to correspondingly enable/disable alerts.
- **Time delay after arming:** A delay can be set from 10 to 60 seconds when arming the aJ-Orion device (when previously disarmed) to allow time to exit the room without setting off the alarm.
- **aJ-Orion buzzer setting:** The aJ-Orion device buzzer can be enabled/disabled when an alarm is triggered.
- **Seconds for buzzer to sound:** The aJ-Orion device can be set to buzz between 1 and 5 seconds when an alarm is triggered.
- **Image transfer timeout setting:** The time allowed for sending images from the aJ-Orion device can be set from 10 to 60 seconds to allow for network delays.
- **Monitor timeout setting:** The time allowed for monitoring sessions can be programmed from 1 to 60 minutes.
- **Sensitivity setting:** The sensitivity of the aJ-Orion device can be adjusted as follows: moving the slider toward the left decreases sensitivity, moving the slider to the right increases sensitivity.

17 Upon completing the settings, select the “Save” button. A popup message will confirm the setting are saved to the aJ-Orion.



CHAPTER 3 : OPERATIONS

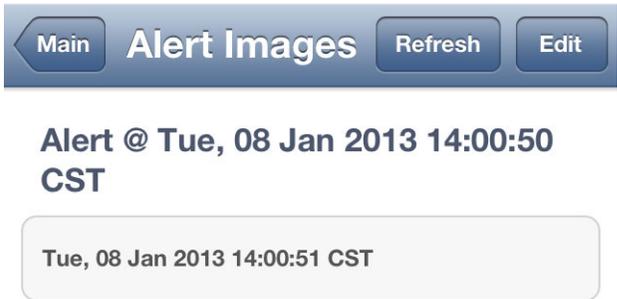
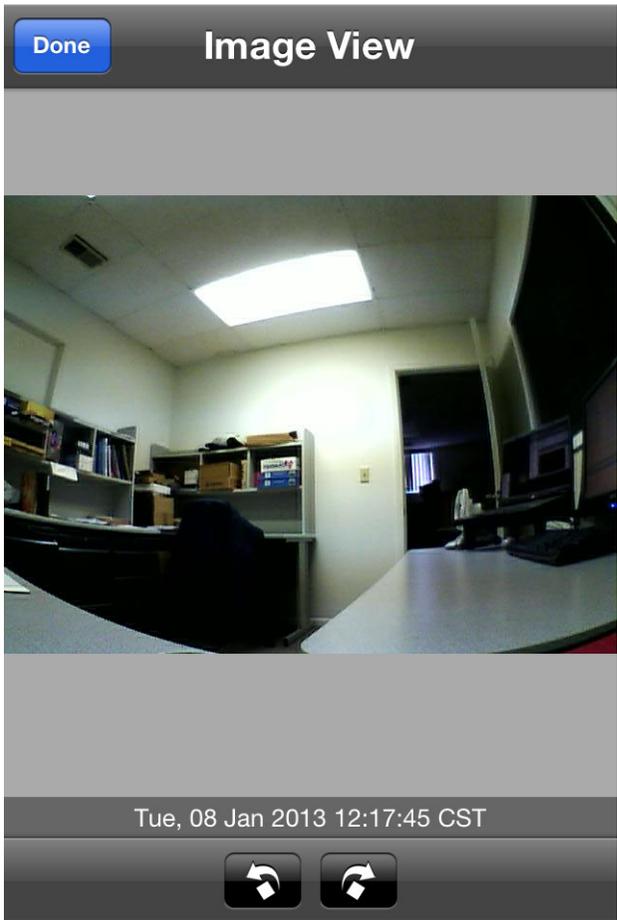
3.1. Status

The aJ-Orion system software consists of two components (aJ-Orion device software and aJ-Orion client application software) that communicate to each other via the Google Talk server. Therefore, both aJ-Orion software components must be connected to the Google Talk server before the system is operational. The aJ-Orion client application main screen shows the status of these connections.

<p>1 The aJ-Orion client application Main screen shows the system status as follows:</p> <ul style="list-style-type: none"> • Server connection status (connected or not connected) • aJ-Orion device connection status (connected or not connected) <p>2 The system is operational when all status conditions are green as shown at the right. Be aware that upon activation of the phone from sleep mode, the smart phone may switch from the cellular network to a local WLAN network automatically. The switching between networks can take several seconds whereby the status of the server and aJ-Orion device will show no connection. Once the network switch is completed, the server and aJ-Orion device connections should be reestablished.</p> <p>3 To verify the system is operational and update the connection status, select the “Refresh” button on the lower right portion of the screen.</p> <p><i>NOTE: If not all status conditions are green, please refer to Appendix A.3. Trouble Shooting for further information.</i></p>	 <p style="text-align: center;">1.4</p>
<p>4 The aJ-Orion device has a green light to show power is on and a red light to indicate status as follows:</p> <ul style="list-style-type: none"> • OFF - aJ-Orion device disarmed, • ON (steady) - aJ-Orion device armed, • 1Hz flash - Sensor warming up, • 2Hz flash - Configuration mode, 	

3.2. Alerts

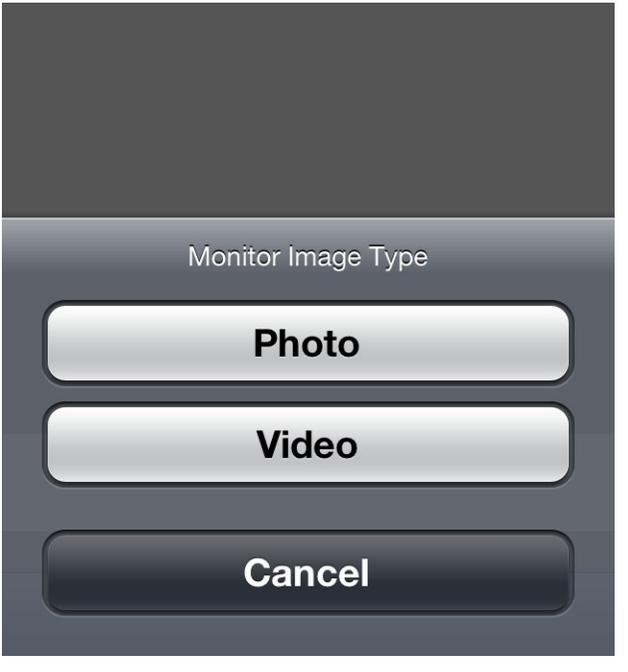
Alerts are notifications sent to the smart phone when the aJ-Orion device alarm is triggered. The phone will vibrate and chime upon receiving the notification and an “aJ-Orion Alert” icon will appear on the phone's status bar.

<p>1 When the aJ-Orion client application is currently active and an alert notification is received, the “Alert Images” screen will be brought up as shown at the right.</p> <p>The “Alert Images” screen displays the images associated with the alert. Note that the number of images shown is dependent on <i>Alert capture type</i> and the <i>Number of snapshots to take</i> settings in the “Setting” screen (see step 16 in section 2.5. aJ-Orion Client Application Startup Procedure).</p> <p>Selecting the alert notification from the smart phone’s status bar will switch to the aJ-Orion client application “List Alerts” screen (see section 3.4. Viewing Alerts).</p> <p>NOTE: Image files are encoded with a sequence # and the time and date of the snap shot or video segment.</p>	
<p>2 Selecting an image will initiate the image file transfer from the aJ-Orion device and display on an “Image View” screen or “Alert Video” screen depending on the image type.</p> <p>If the captured image is a photo, the “Image View” screen will be displayed as shown at the right.</p> <p>If the captured image is a video segment, the “Alert Video” screen will be displayed.</p> <p>3 The image or video screen is exited via selecting, the “Done” button. Thereupon, a prompt is displayed to either “Save” or “Delete” the previously viewed photo or video.</p> <p>If “Save” is selected, the file remains on the aJ-Orion device and saved on either the Camera Roll (photo) in internal storage (video).</p> <p>If “Delete” is selected, the file is removed from the aJ-Orion device storage.</p> <p>NOTE: Alerts will accumulate in the aJ-Orion device and eventually reach the storage capacity. When the storage is full, the oldest alerts will be automatically deleted to make room for the latest alerts.</p> <p>4 The image can be rotated either clockwise or counter-clockwise using the associated button on the screen.</p>	

3.3. Monitoring

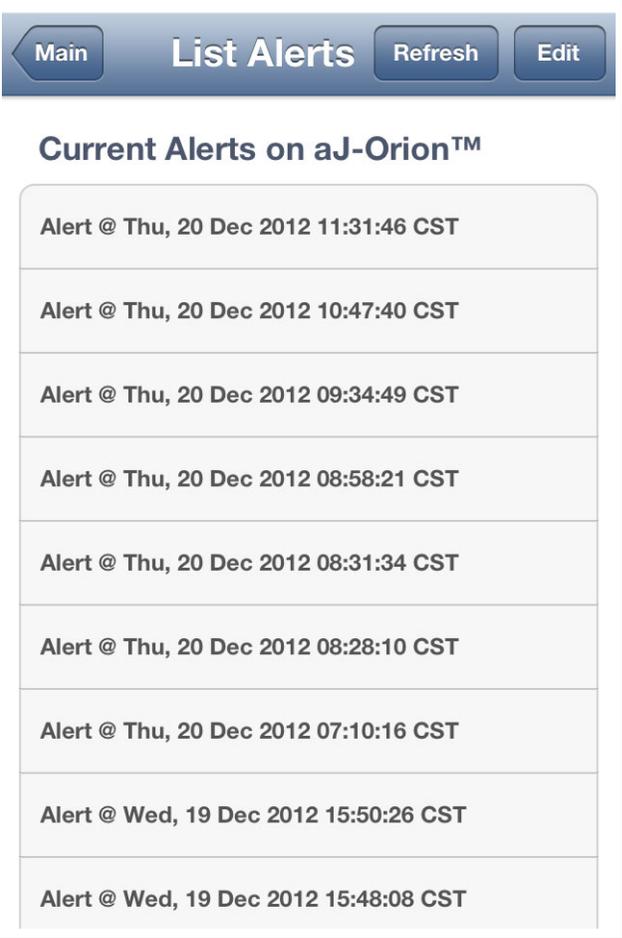
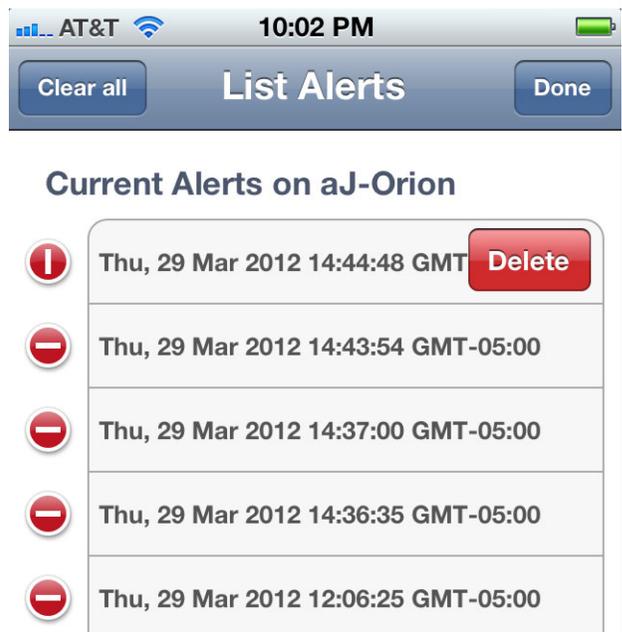
A Monitoring session is where the aJ-Orion device continuously sends images depending on the monitoring mode selected; streaming video or image captures. Streaming video requires a compatible video player application to be selected. Image captures consists of a continuous sequence of snap shots sent about every 4 to 12 seconds.

Note that the received images are not stored in the phone's filesystem.

<p>1 A monitoring session is activated via opening the application menu button (upper left corner on the Main screen) and selecting the “Monitor” item. When the monitor screen is displayed, select the “Start” button. The monitoring mode selection dialog is presented as shown at the right.</p> <p>2 When “Video” is selected, the aJ-Orion device will be requested to setup an HTTP server to provide the video stream.</p> <p><i>NOTE: Streaming video may require additional router configuration (see A.2.2. Streaming video port forwarding).</i></p> <p>3 Upon successful configuration of the streaming video server, the “Monitor Video” screen is displayed and begins playing the stream when enough data is buffered in.</p> <p><i>NOTE: Streaming video is terminated whenever an alert is detected to allow recording the event.</i></p>	
<p>4 When “Photo” is selected, the aJ-Orion device will be requested to begin taking “snap shots” and send them to the aJ-Orion client application as shown at the right. Upon successful transmission, the next snap shot is taken and sent. The typical time between snap shots is about every 4 to 12 seconds depending on network delays.</p> <p>5 Photo monitoring sessions are time limited. The default monitoring time is 10 minutes. The time limit can be adjusted as described in section 2.6. aJ-Orion Message Settings Options, step 16.</p>	

3.4. Viewing Alerts

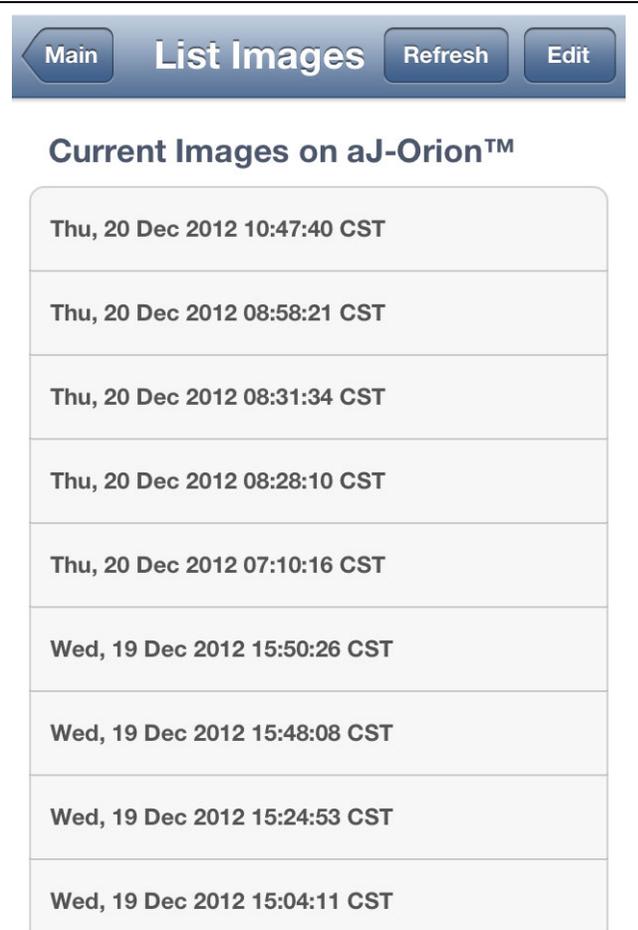
Often several alerts may be received before they are acknowledged. In addition, network communications are not always reliable such that some alerts may not be sent or are not received by the phone. The aJ-Orion device stores alert images in memory until they are deleted by the aJ-Orion client application.

<ol style="list-style-type: none"> 1 The list of alerts is accessed via opening the application menu button (upper left corner on the Main screen) and selecting the “List Alerts” item. An example of a list of alerts stored on the aJ-Orion device is shown at the right. 2 The alerts are listed with the most recent at the top of the list. Select the alert item to view the images associated with the alert. 3 Viewing the images associated with the alert is described in section 3.2. Alerts, above. 	
<ol style="list-style-type: none"> 4 The “Edit” button is used to select an alert to be deleted from the aJ-Orion device without transferring and viewing the associated images. The alert is selected via the red dash circle icon to the left of the alert item. Subsequently, the “Delete” button will appear to the right of the alert. Selecting “Delete” will remove the alert and all associated images from the target. Thereupon, the screen is refreshed. 5 The “Clear All” button will remove all alerts from the aJ-Orion device. <i>NOTE: Alerts will accumulate in the aJ-Orion device. When the storage has reached full capacity, the oldest alerts will be deleted automatically to make room for the latest alerts</i> 	

3.5. Viewing Images

An alternative way to view captured alert images not sent or requested by the phone is via the image list. The aJ-Orion device stores alert images in memory until they are deleted by the aJ-Orion client application.

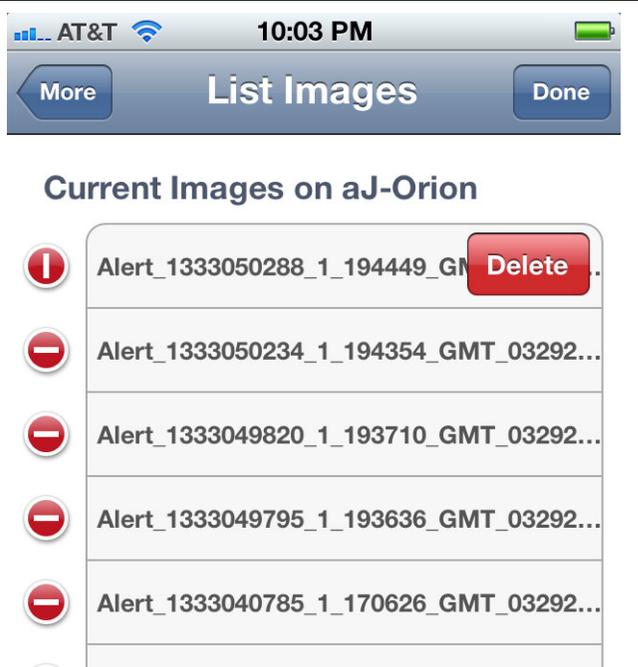
- 1 The list of images is accessed via opening the application menu button (upper left corner on the Main screen) and selecting the “List Images” item. An example of a list of alerts stored on the aJ-Orion device is shown at the right.
- 2 Selecting any image from this list will initiate the image file transfer from the aJ-Orion device and display on an “Image View” screen or “Alert Video” screen depending on the image type.



- 3 The “Edit” button is used to select an image to be deleted from the aJ-Orion device without transferring and viewing.

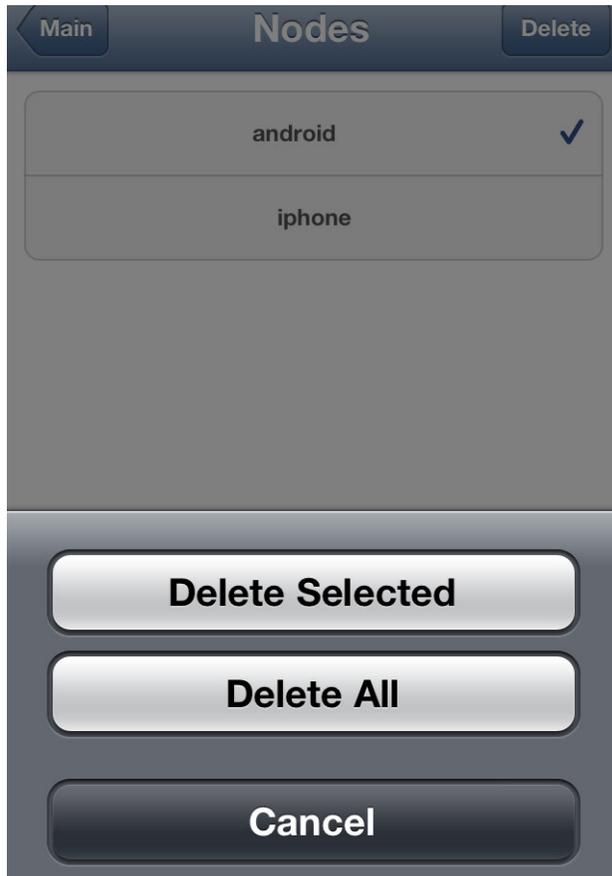
The image is selected via the red dash circle icon to the left of the alert item. Subsequently, the “Delete” button will appear to the right of the alert. Selecting “Delete” will remove the image from the target. Thereupon, the screen is refreshed.

NOTE: Alert images will accumulate in the aJ-Orion device. When the storage has reached full capacity, the oldest alert images will be deleted automatically to make room for the latest images.



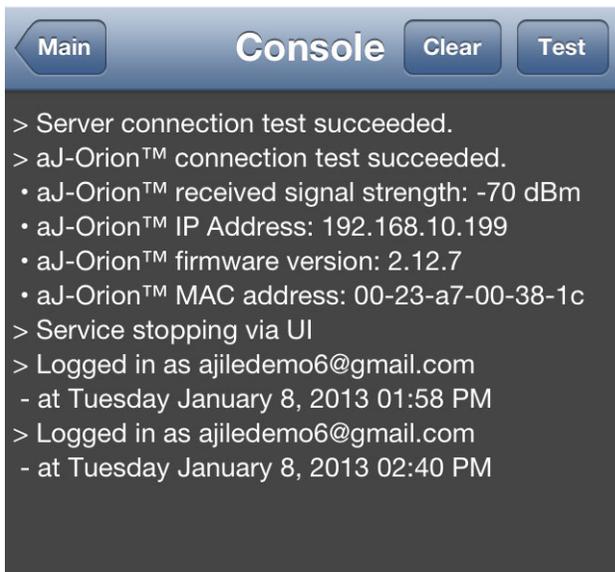
3.6. Node list

Every aJ-Orion client application (node) that has established a connection with the aJ-Orion device is registered to receive alerts. Note that the registered nodes are specific to the “server account” configured on the aJ-Orion device. The registered nodes are identified by the “nickname” used by the aJ-Orion client application (see section 2.3. aJ-Orion Client Application Setup Procedure). The list of nodes registered to the aJ-Orion device can be viewed at any time to remove (delete) unwanted nodes.

<p>1 The list of registered nodes is accessed via opening the application menu button (upper left corner on the Main screen) and selecting the “Nodes” item. An example of a list of registered nodes on the aJ-Orion device is shown at the right.</p>	 <p>The screenshot shows a mobile application interface titled "Nodes". At the top left is a "Main" button with a left-pointing arrow, and at the top right is a "Refresh" button. The main content area contains a list of two nodes: "android" and "iphone", each in a separate light-colored box.</p>
<p>2 Removing a node from the list of registered nodes is initiated via first selecting the node and then selecting the “Delete” button.</p> <p>A confirmation popup screen provides options to delete the selected nodes, all nodes, or cancel the request.</p> <p><i>NOTE: Removing a node only disables the associated node from receiving alert notifications. The node can be re-registered via activating the aJ-Orion client application on the associated node.</i></p> <p><i>Deleting the node corresponding to the currently running aJ-Orion client application will result in disconnecting the application from the server.</i></p>	 <p>The screenshot shows the "Nodes" screen with a confirmation dialog overlaid. The dialog has a dark background and contains three buttons: "Delete Selected", "Delete All", and "Cancel". In the background, the "Nodes" list is visible but dimmed, with a checkmark next to the "android" node, indicating it is selected for deletion. The "Main" and "Delete" buttons are visible at the top of the screen.</p>

3.7. Console

The console screen provides a running history of events recorded by the aJ-Orion client application. Typical events include starting/stopping service, logging onto the server, and received alerts.

<p>1 The Console screen is accessed via opening the application menu button (upper left corner on the Main screen) and selecting the “Console” item. An example of console messages is shown at the right.</p> <p>Selecting the “Clear” button will remove all messages from the Console screen.</p>	
<p>2 Selecting the “Test” button will prompt for options (“Test Server” and “Test aJ-Orion”) to test the connection of the respective end points. Selecting either menu option will report the status of the connection.</p> <p>3 If the aJ-Orion device is configured for WLAN network connections then the response to testing the aJ-Orion connection (via the console screen “Test aJ-Orion” menu item) will also include the signal strength received by the device. This feature is useful for positioning the aJ-Orion device to receive the best signal strength. Signal strength readings are typically between -80dBm and -40dBm (smaller negative numbers are stronger signals). Signal strength readings lower than -80dBm may result in intermittent network connections.</p>	

APPENDIX A: FAQs AND TROUBLE SHOOTING

A.1. FAQs

A.1.1. Are image list if an alert is missed?

No. Images are stored on the aJ-Orion device until requested by the aJ-Orion client application. See 3.4.: Viewing Alerts or 3.5.: Viewing Images for instructions.

A.1.2. How can previously received images be viewed?

Images are saved on the smart phone's *Camera Roll*. The photo application (such as the iPhone “Photos” application) can be used to view all of the images

A.1.3. How many images can be stored on the aJ-Orion device?

The number of images stored on the aJ-Orion device is dependent on image size and available memory. The upper limit is 250 images.

Note that images can be deleted without transferring and viewing. See 3.5.: Viewing Images, step 3.

A.2. Video playback and streaming video

A.2.1. Streaming video port forwarding

The aJ-Orion device can be configured to stream video for live monitoring (see section 3.3.: Monitoring). Streaming video is unique in that aJ-Orion device sets up an HTTP server which is accessed by a compatible video player via the server’s URL address. Since the aJ-Orion device is connected to a local network that is protected by a network router, the router needs to allow access to the aJ-Orion device via port forwarding. Port forwarding may or may not be enabled. Enabling port forwarding is accomplished via the router’s administrative web pages.

Every brand of router has their own customized administrative web pages. There are web sites that can help find the user guide for the router like portforward.com. Before navigating to the router’s port forwarding configuration page, the aJ-Orion’s IP address needs to be identified. The aJ-Orion’s IP address can be obtained from the “Test aJ-Orion” option in the aJ-Orion client application console screen (see Section 3.7.: Console).

Note: The port forwarding configuration page may be listed under the “Application and Gaming” or “Security” tab on the router’s administrative web pages.

Once the aJ-Orion’s IP address is identified, the following information can be entered in the port forwarding configuration table:

- IP address - The aJ-Orion device IP address
- port range - The aJ-Orion will try to map port numbers in the range from 8800 to 8899.
- protocol - If available, select both UDP and TCP. If only 1 is allowed, then select TCP.
- application description - This is arbitrary so “aJ-Orion” is suggested.

IMPORTANT:

In addition to enabling port forwarding for the aJ-Orion, the router’s UPnP service needs to be enabled to allow the aJ-Orion to perform port mapping. By default, UPnP service is usually enabled. The UPnP service selection is typically located on the router’s “Administration Management” or “Advanced Setup” page.

A.3. Trouble Shooting

A.3.1. aJ-Orion client application popup message “Unable to connect to aJ-Orion”

- **Condition:** Attempting to save the aJ-Orion device network settings.
Resolution: The aJ-Orion device and the smart phone need to be connected to the same router when saving the aJ-Orion network settings. There are several possible causes that may be preventing the communications. Try the following steps:
 - Step 1:** Ensure the aJ-Orion device is ready to receive the network configuration settings. Refer to step 11 through 13 in section 2.4.: aJ-Orion Device Setup and perform these steps if not previously executed. Thereafter, retry saving the settings.
 - Step 2:** Check the Ethernet cable connection between the aJ-Orion device and the router (the LAN lights will indicate when the Ethernet cable is secured). Retry saving the settings if not previously connected.
 - Step 3:** The aJ-Orion client application may have lost network connection or is in the process of switching between cellular and WLAN network connection. Wait until the smart phone’s WLAN signal indicator is active and retry saving the settings.
 - Step 4:** Check that the smart phone is connected to the same router as the aJ-Orion device. The smart phone’s router connection can be checked via the phone’s network setting screens. If necessary, switch to the correct wireless network and retry saving the settings.
 - Step 5:** If all of the prior steps have been completed without success, verify multicasting is enabled via the “Filter Multicast” setting in the router’s “Security Firewall” or “Internet Sharing” administrative web page. If necessary, enable multicast filtering to allow multicasting and retry saving the settings.

A.3.2. aJ-Orion client application status shows “Not connected to Server”

- **Condition:** aJ-Orion client application shows no server connection for over 5 minutes.
Resolution: The aJ-Orion client application may have lost network connection or is in the process of switching between cellular and WLAN network connection. Try the following steps:
 - Step 1:** Ensure the aJ-Orion device is ready to receive the network configuration settings. Refer to steps 11 through 13 in section 2.4.: aJ-Orion Device Setup and perform these steps if not previously executed. Thereafter, retry saving the settings.
 - Step 2:** Check the Ethernet cable connection between the aJ-Orion device and the router (the LAN lights will indicate when the Ethernet cable is secured). Retry saving the settings if not previously connected.
 - Step 3:** The aJ-Orion client application may have lost network connection or is in the process of switching between cellular and WLAN network connection. Wait until the smart phone’s WLAN signal indicator is active and retry saving the settings.
 - Step 4:** Check that the smart phone is connected to the same router as the aJ-Orion device. The smart phone’s router connection can be checked via the phone’s network setting screens. If necessary, switch to the correct wireless network and retry saving the settings.

A.3.3. aJ-Orion application status shows “Not connected to aJ-Orion”

- **Condition #1:** aJ-Orion device status: Red light is on. No buzzer sounds for over 5 minutes.
Resolution #1: The aJ-Orion client application may have lost network connection or is in the process of switching between cellular and WLAN network connection. Try the following steps:
 - Step 1:** From the aJ-Orion client application main screen, select “Refresh”. If the application status doesn’t change to show connection within a few minutes then proceed to the next step.
 - Step 2:** From the aJ-Orion client application main screen, select “Stop service” and wait a few seconds before selecting “Start service”.

- **Condition #2:** aJ-Orion device status: Red light is on. Buzzer sounds once every 5 minutes.
Resolution #2: aJ-Orion device is not able to connect to the network. Check the following.

Step 1: Verify network connections. If using WLAN connection, verify the following:

- Network SSID name must match and is case sensitive,
- Verify band selection,
- Set channel selection to Auto if unknown,
- Verify security selection and encryption is AES (TKIP is not supported),
- Reenter password.

If using LAN connection, check if LAN link light (next to LAN cable jack) is on or blinking).

Step 2: Verify network is up using the WLAN on the phone or a PC.

Step 3: If using WLAN, it is possible the WLAN signal strength is too weak at the aJ-Orion device's current location. Try placing the aJ-Orion device in the same room as the router. Otherwise reconfigure the aJ-Orion device via following the instructions in section 2.3.: aJ-Orion Client Application Setup Procedure.

- **Condition #3:** aJ-Orion device status: Red light is off. Buzzer sounds once every 2 seconds.
Resolution #3: The aJ-Orion device is downloading a firmware update. This may take 12 minutes when using a WLAN network connection or 3 minutes when using LAN configuration.
- **Condition #4:** aJ-Orion device status: Red light is off. No buzzer sounds for over 5 minutes.
Resolution #4: Power cycle the aJ-Orion box.

A.4. Revising system settings

It may be necessary to change the system settings (such as server account or network settings) once the aJ-Orion system has been initially configured. The following subsections describe the common revisions to system setting. Note that these descriptions are streamlined from the setup steps given above. (See sections 2.3. through 2.5. for complete details.)

A.4.1. Changing server accounts

The aJ-Orion device and the aJ-Orion client application must use the same server account to communicate with each other. If the server account is to be changed, then the aJ-Orion device must be updated accordingly. Saving the server account settings (as shown in step 3 in section 2.3.: aJ-Orion Client Application Setup Procedure) is only applied to the aJ-Orion application.

To save the server account setting to the aJ-Orion device, follow steps 11 through 13 in section 2.4.: aJ-Orion Device Setup to prepare the aJ-Orion device to receive the new configuration. Once the aJ-Orion device is ready, then open the aJ-Orion client application menu (upper left corner on the Main screen) and select the "Setup" item. Select the "Save" item to transfer the current network and account settings to the aJ-Orion device. A popup message will confirm the setting are saved to the aJ-Orion device.

A.4.2. Changing network configuration

Network configuration settings can be changed via following steps 3 through 14 in sections 2.3. through 2.5.