Vidcie – LXQ Administrator Manual
Version 1.1
29 March 2013

Table of Contents

List of Tables

Terms

Term	Definition
Hub	Device that serves as the central controller for the LXQ System. Can be one of two hubs, the TP-Link MR3040 or the Buffalo WRZ-HP-450G.
Repeater	Transmits commands and video to/from other repeaters or to/from cameras to/from the hub.
LXQ Camera	Small, mobile camera with different lenses
Viewing Device	A device, such as an iPod Touch, iPad, smartphone or PC/Mac for viewing the video from the cameras
Wi-Fi	802.11g network
Enclosure	A black, waterproof enclosure for housing a camera out-of-doors. The LXQ camera is fitted by hand inside the enclosure.
Mounting equipment	An assortment of devices to mount the LXQ camera to walls, ceilings, poles, exit signs, handrails, and more
Juice pack	A small external plastic enclosure containing a battery and a USB connection. Used to provide DC power to hubs, repeaters and cameras.
Viewing Device	This system is designed to work with Macintosh computers, Apple iPod touches, Apple iPads, Android devices, and Windows PCs.

Introduction

The LXQ system provides agency personnel with an 'on-the-fly', temporary video monitoring or recording solution for interior and exterior situations.

Key features:

- Remote recording. Once set, the system can record onto local storage for retrieval later.
- Remote streaming enabling remote monitoring by personnel local or at a distance from the situation
- Simultaneously record and stream video
- DVR functionality – users can play back up to 1 minute of video to review what they missed
- Battery power or AC power options
- Simple software - web-based application for viewing so no software needs to be installed on a PC, iPad or iPod touch to use the system
- Uses consumer devices for monitoring– iPads, iPod Touches. Uses modified consumer devices for the necessary hubs and routers.
- Quick configuration – can be set up in a matter of an hour rather than days
- Flexible installation – a myriad of attachments to install on walls, ceilings, fixtures, and more
- Wired or Wi-Fi connection between the hubs and repeaters. Wi-Fi connection only to cameras.
- Enclosures for outdoor use
- Range of lenses from those with a long field of view to fish eye

How to use this manual

You can use this manual to:

- Set up your system
- Run and operate your system
- Understand and use the browser based application to configure, view, and administrate the system
- View recorded video
- Use the Windows-based application to obtain location data, run tamper detection tests, configure cameras, and delete videos.
- Configure Apple iPod touch and iPad devices

What comes with a Looxcie LXQ system

This system was developed for multiple agencies, each with their own configuration requirements. This manual covers all of the available hardware and software options including:

- Looxcie LXQ cameras with 65, 75, 93 or 123 degree field of view lens
- Two hub options: TP-Link MR3040, a compact, battery powered router and the larger Buffalo WRZ450, a more powerful, AC-powered router
- TP-Link MR3040 as a repeater for increasing range
- Enclosures for providing the cameras protection against the elements in outdoor situations
- Looxcie Tripod and Tripod mount for mounting cameras
- iPads and iPods for viewing streaming video

Your system may not have all components. In addition, various agencies may have added mounting devices and power supplies to augment the solution and those components are not covered in this manual.

Preparing a System for the Field – for administrators

Overview
The Looxcie LXQ system needs to be configured before it is deployed in the field. Typically, an administrator should configure the system before having users deploy it to the field. Briefly, the steps an administrator should take to prepare a system:

1. Define the arrangement of the hub, repeaters, and cameras. Specify the number of cameras, hubs, and repeaters to be used in the arrangement.
2. Choose the most appropriate type of hub and camera. Determine if repeaters are necessary.
3. Choose a viewing device
4. Configure the system to configure:
    - The system for recording or streaming as well as other options
    - Set SSIDs for each branch of the system
    - Set password and security for the system
5. Configure hubs, repeaters, and cameras
6. Choose mounting devices
7. Insert cameras into enclosures if necessary
8. Test the system, end to end

Field Preparation in Detail

Define the Configuration

The Administrator should work with the appropriate personnel to understand how the Looxcie LXQ system will be used in order to configure the system. The following are representative questions that the administrator should ask their field personnel:

- Can it be handled with one Looxcie LXQ system? Are additional systems required?
- What are the range requirements?
- How many cameras per system are required to provide coverage?
- What types of cameras are best suited to the situation?
- Can Wi-Fi or wired connections be used? What is the best combination for each segment of the network?
- What are the power requirements? Is AC power available for the repeaters, hub or cameras?
- Where can users be positioned with viewing devices?
- How far can the hub be from users? Is there AC power for a hub? What is the range that the hub has to provide?
- Is video to be streamed or recorded?

Arranging the System

Available Configurations

The LXQ System is designed for these seven configurations shown in Table 1. The LXQ System can support:

- Up to four cameras
- Up to 4 repeaters
- One hub for which there are two options
- Up to two viewing devices

Note, Table 1 shows more than two viewing devices: these are illustrated to show the viewing device options. Note also, Android browsers are not supported at this time.

Choosing a Camera

The Looxcie LXQ System includes a Looxcie LXQ camera designed for field applications. Its key features include:

- Records VGA (480p) (640x480) and half-VGA (320p) (320x240)
- Streaming at half-VGA and quarter VGA. Note, the LXQ System can support cameras in streaming mode or recording mode
- DVR mode for playback
- Battery life of 1 hour. Optional batteries are available to support up to 4 hours at 320p/24fps
- Contains a Class 4, 8GB micro SD card for up to 8+ hours of recording time at VGA resolutions. Looxcie has qualified the Patriot 8GB microSD card for this device. (Patriot Signature Flash, 8GB microSDHC Class 4 (P/N: PSF8GMCSDHC43P)
- A "Pre-Roll Buffer" provides the ability to have recorded video, in a circular buffer, prior to the recording activation. The circular buffer will have a capacity to record 30 seconds of video. When the user turns on recording from the application, the content of this Pre-Roll buffer is used as the initial content of the recording.

Looxcie LXQ Lens

Here are the advantages and disadvantages of each lens.

Table 1

Advantages and Disadvantages of Looxcie LXQ Camera Lens

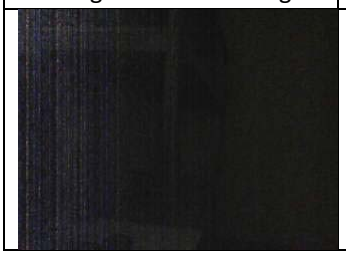
Hub	Advantages	Disadvantages
65 Degree FOV	- Good for longer depth of field	- Least suited to low light conditions - Narrowest FOV
75 Degree FOV	- Longer depth of field. Most helpful when you want to want to "zoom in" on object in the center of the field of view such as looking down a long street, hallway, passageway - Suitable for low-light conditions - Commonly used in surveillance	- Narrower FOV that the 93 and 123 cameras
93 Degree FOV	- Wider field of view - Suitable for low light conditions	- Wider FOV than other lens - Often seen as a useful 'compromise' camera between the various options
123 Degree FOV	- Fish eye view - Suitable for low light conditions	- Distortion at edges - Short depth of view

The camera lenses perform differently in normal and low light situations. The following images are suggestive of the performance of the lenses in normal interior and low light interior situations. You will need to test the cameras in your situation to determine the cameras best suited to your application.

Table 2

Images Illustrative of the View from Looxcie LXQ Camera Lens

65 Degree FOV	75 Degree FOV	93 Degree FOV	123 Degree FOV

			
65 Degree FOV in low light	75 Degree FOV in low light	93 Degree FOV in low light	123 Degree FOV in low light
			

Setting Security

Wi-Fi communication will be protected using WPA2 and 128-bit AES encryption. You will need to set a passphrase for the system.

Installing a System in the Field – Advice for Users

LXQ system is designed for easy setup. You plug in and turn on:

- The hub first. Let the hub fully power on and begin broadcasting an SSID. This should occur in less than 3 minutes.
- The repeaters and cameras next. It does not matter the order in which the repeaters are turned on. It does not matter if the cameras are turned on after or before the repeaters. The cameras can be turned on in any order.

The system 'self- configures' itself such that the repeaters and the hub find each other. Similarly, the repeaters and cameras find their respective devices; a camera connects to the repeater(s) through which it is to stream video back to the hub.

What Makes a Good Setup

Improved camera communication and greater distance (between viewing device and cameras) are achieved under these conditions:

- Low noise environments (where low noise refers to few Wi-Fi networks in the area)
- Few obstructions (either walls or floors)

That said, the system has been deployed and tested in high noise and obstructed locations where there were many Wi-Fi devices or networks.

The system is designed to support a maximum of:

- Four cameras (any combination of types. You can use four of say the 65-degree FOV camera, two of the 65-degree FOV camera and two 123-degree FOV cameras or all four cameras of the same FOV).
- Four repeaters
- Two viewing devices (iPad, iPod, Macintosh, PC)

It is generally better that:

- Repeaters are placed within 1-3 feet of the cameras
- A maximum of two viewing devices are on the network at any one time. The hub is designed to process a maximum of 6 streams (4 cameras or repeaters and two viewing devices)

Placement of Repeaters Relative to Hubs and Cameras

Table 9 shows the recommended ranges for different configurations.

Increasing Range: Hints and Tips

The best transmission of video and the greatest range of course is with a clear line of sight or limited obstructions – no walls or floors between the viewing devices, hubs, repeaters, and cameras. However, that is rarely possible.

Furthermore, the lower the Wi-Fi interference, the greater the range. Wi-Fi interference can come from not just Wi-Fi networks but from the devices, the iPhones, Android phones, tablets, laptops, game devices, TV DVRs, some newer models of televisions, building monitoring systems, and other devices in an area. Generally, users find far more Wi-Fi devices than they would expect. In some homes, users are surprised to find that upwards of 20 Wi-Fi devices once they start counting.

The following paragraphs provide some basic hints and tips with regards to placing cameras, hubs, and repeaters.

Walls. Here are a few general guidelines about configuring your network with regards to walls. Note, these are general guidelines and every building or exterior situation differs.

- Fewer walls are better

- Interior walls are more penetrable than exterior walls
- Walls, either interior or exterior
- Walls without steel, reinforcing hardware cloth as in stucco walls, is better than walls with these characteristics.

Noisy Environment. A noisy environment is defined as one with many Wi-Fi networks. Routers for local Wi-Fi service may create these networks. There may be many receiving devices in the area: laptops and smartphones as well as other devices such as televisions, VCRs, office and home automation systems. This system will be less effective in noisy Wi-Fi environments.

Floors. Here are a few general guidelines about configuring your network with regards to floors. Note, these are general guidelines and every building or exterior situation differs.

- Fewer floors are better
- Floors with steel reinforcement degrades transmission strength
- Older floors in buildings may degrade transmission strength more than floors in newer buildings

Line-of-sight. Here are a few general guidelines about configuring your network with regards to line of sight. Note, these are general guidelines only.

- A clear line of sight – no obstructions from buildings, walls, trees, people, etc. is best. Metal objects have a significant impact on transmission strength.
- Glass walls have a slight impact on transmission strength
- Terrain, such as hills, impacts transmission strength

Installing Cameras

The following section provides information on the power capacity of cameras and how to identify Looxcie LXQ cameras.

Power
Looxcie LXQ cameras typically have a one-hour battery life. LXQ cameras come with wall chargers and cables. LXQ cameras recharge in 3-4 hours from typical AC power. For security reasons, there is no LED indication that the camera is fully charged. The signaling that does occur only occurs when the camera is first connected to USB or a power source. The signaling is:

- Blinks green when starts charging for approximately three minutes
- Goes dark during charging

The charging indicator is on the rear of the camera:

Figure 1
Power Status Light on Rear of Camera

Identifying Types of Cameras

The cameras have distinctive fronts that will help you identify the lens that they contain. Note, the 75-degree and 93 degree FOV cameras have similar fronts. You are not seeing double.

Figure 2
How to Distinguish Among Looxcie LXQ Cameras

65 Degree FOV	73 Degree FOV	95 Degree FOV	123 Degree FOV
			

Figure 3
LXQ 75 and 93-Degree FOV Enclosure Components

For Users - Using the Looxcie LXQ System in the Field

Introduction

The LXQ browser-based application enables you to:

- Watch video as it is being recorded (recorded video mode) and/or streaming video (streaming video mode)
- Watch video in different window sizes
- Playback video that you may have missed using the DVR Replay feature (note: see limitations on this feature in the section on DVR Replay)
- Monitor power levels for repeaters, hubs and cameras
- Monitor the health of the network

Note all Looxcie LXQ systems do not have the same functionality. Please check with your system administrator to confirm what features and functionality you do have access to use.

The Looxcie Web-based application is a browser-based application – no software needs to be installed on your iPod touch, iPad, tablet, or PC to use the Looxcie application.

Getting Started

If you are starting up a Looxcie LXQ system in the field, these are the things to remember when you begin using the system:

- Set up the system in the field. Turn on all the devices as described earlier in this document. In minutes, the hubs, repeaters and cameras will form a network. Confirm that the repeaters and cameras have linked together.
- Confirm all devices have power
- Confirm all cameras are on and streaming or recording
- Confirm the Location Data is current

Turning on your Cameras

You turn on power for the Looxcie LXQ camera itself with a switch. You do not press a button on the LXQ camera to start it. To power on a Looxcie LXQ camera, slide the Power switch on as shown in Figure 12. Once you have properly slid the switch to the on position, you will see a green area next to the switch as shown in Figure 12.

Figure 4
How to Use the Power Switch on the Looxcie LXQ Camera

Where to find the Looxcie LXQ Power Switch	Power Switch Turned ON and green area exposed
	

Logging in as a User
To begin, you will need the network name, SSID, of the LXQ system hub from your system administrator. (The SSID may be set not to broadcast you will not find it by searching for Wi-Fi networks.).

Your system administrator will recommend a browser to use. No software is required to be downloaded and installed on your viewing device. You set our browser to accept cookies; without allowing cookies, the system will not work properly.

Using your browser, log in to http://192.168.1.1:8888. The default log in user name is "user" and the password is "iqtuser". Note, check with your system administrator as these default values may have changed.

Capturing your Location Data
The Looxcie LXQ system captures location data to video recorded by any LXQ camera. You choose your location data option through the following dialog box that appears shortly after you first log into the system:

Figure 5
Location Data Dialog box

Location data is not captured when the system is in streaming mode. Location data is captured under these conditions:

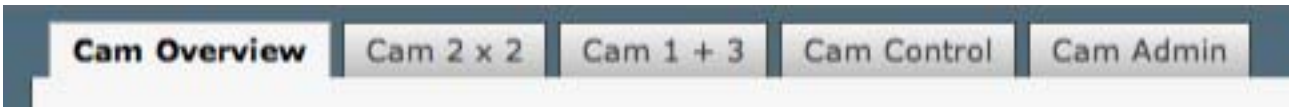
- The location of the viewing device, not a camera. The viewing device queries for the location information. Cameras do not.
- The user had to have selected the option to capture location data with recorded video.
- The Location data is obtained from one of these systems: GPS, cell tower triangulation, or Wi-Fi triangulation. The browser vendor decides which system is used when so the application has no control over the method used.
- The location data is updated every time the user changes the page in the application, say going from the Cam control page to the Cam Overview page. So, every few seconds location data is captured into the video file.

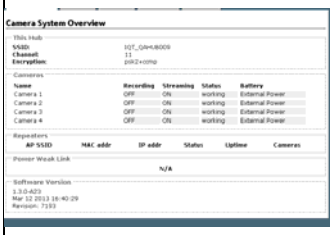
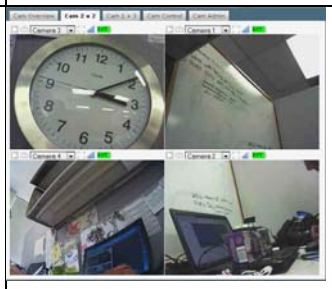
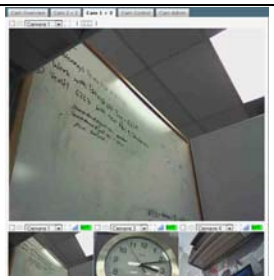
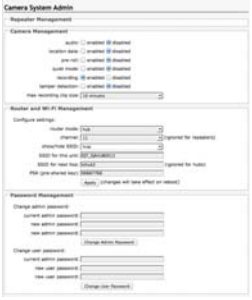
You have several options to choose from in how you capture location data:

- Allow means the Looxcie LXQ will use your browser to access available location information
- Don't Allow means no location data will be appended to the recorded video
- Remember my decision for one day means the location data used will be used for one 24-hour recording period. This is the recommended option.

Using the Looxcie LXQ web-based Application

The application has four web-based pages viewable in your browser:

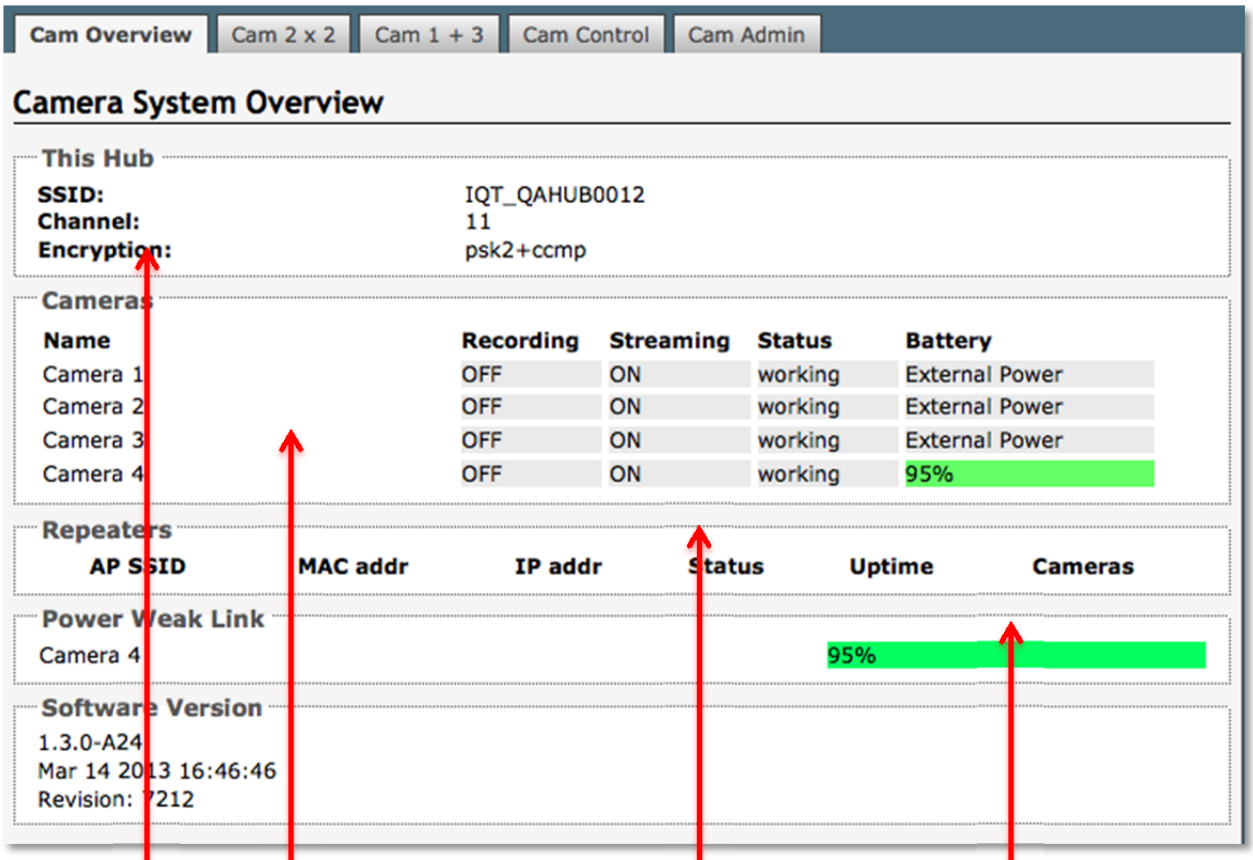


Cam Overview – provides system information such as the number and names of the camera on the system, the Mac addresses and number of repeaters and SSID information. It also provides a quick view of the mode that the cameras are in along with battery status.	Cam 2 x 2 – provides a screen with four windows, one of each of four possible cameras. You can watch video from up to four cameras in one-quarter VGA screens.	Cam 1+3 – provide 1 camera in a large view and up to 3 others in a small one-quarter VGA screen. Provides access to the DVR functionality.	Cam Admin – for the system administrator for configuration. Generally not available to users. Used to choose among the options available in the Looxcie LXQ system.
			

Cam Overview Page

The Cam Overview page provides information about your system.

Figure 6
Cam Overview Page Example



Displays the SSID of the system hub, the channel being used by the system and the encryption method. The system administrator generally sets these values.

Shows the cameras, up to 4, can be connected at any one time, the camera names, mode (streaming or recording), remaining battery life of the camera, and status as to connected or not. In this example, all cameras are in streaming mode, working and are running on external (AC) power.

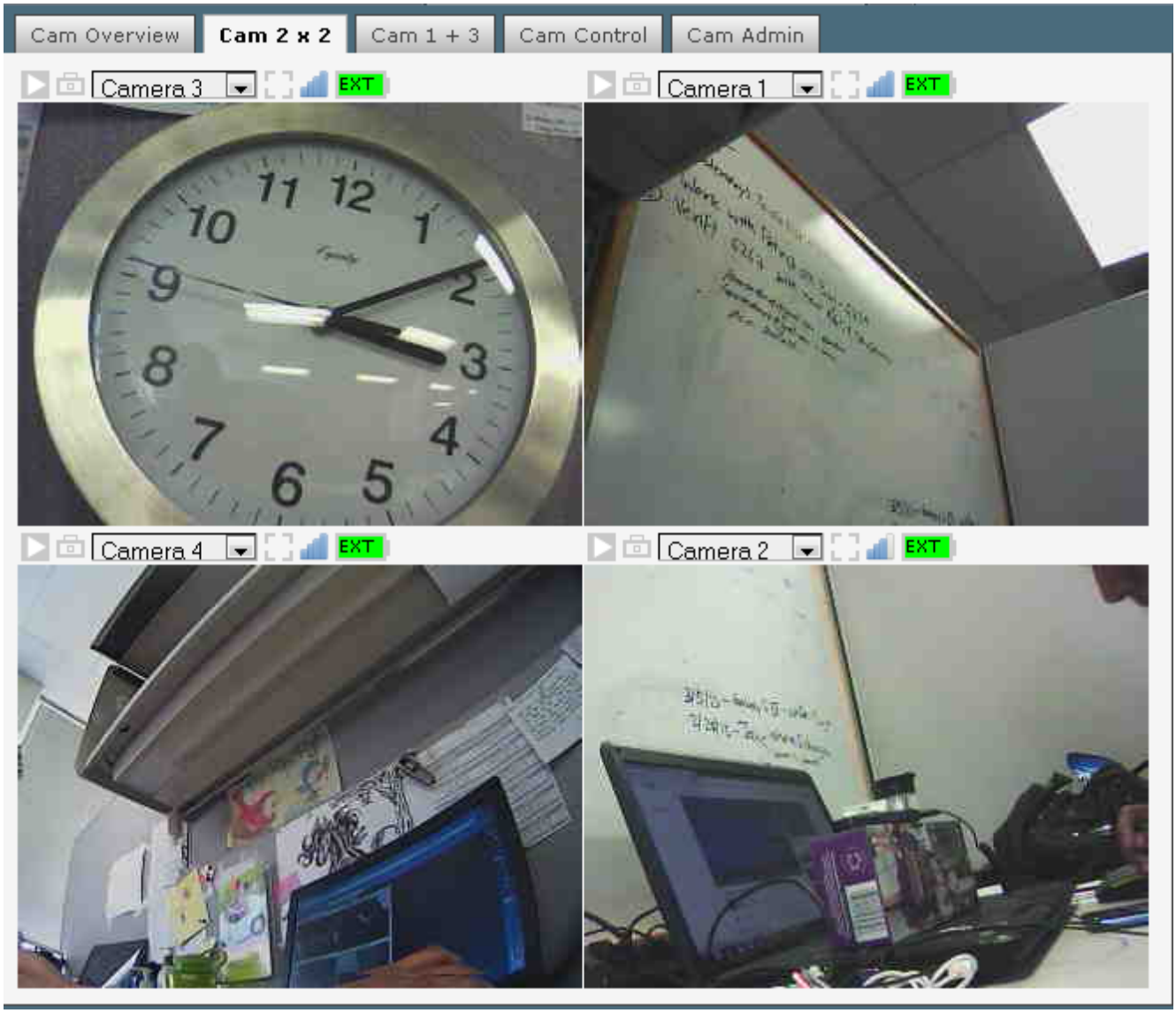
Shows the repeaters, up to 4 can be connected at any one time, the repeater's IP and Mac address, and uptime (how long they have been in operation). In this example, there are no repeaters.

Power Weak link Shows the Hub to repeater or repeater to camera connection with the weakest strength. Generally recommend that the weakest connection be checked.

Cam 2 + 2 Page

Without changing web pages in your browser, you can monitor up to a maximum of four cameras as well as keep an eye on battery life and connectivity quality. In Figure ??, we see four cameras placed around an office.

Figure 3
Sample Cam 2 + 2 Page



The controls available on the Cam 2+2 page are:

Control	Description and options
	Not operational.
	Click on to re-name a camera.

Control	Description and options
	Drop down that lists all the cameras in the system. Click on it to change the camera in that window.
	Click on this icon to enlarge that camera window.
	Indicate Wi-Fi strength as received by that camera. The icon consists of 4 bars and operates much like the cellular strength indicator on a cell phone. The images to the left show three bars and four bars.
	Indicates battery life. When 'EXT' appears inside the icon, indicates that the camera is running on external power.

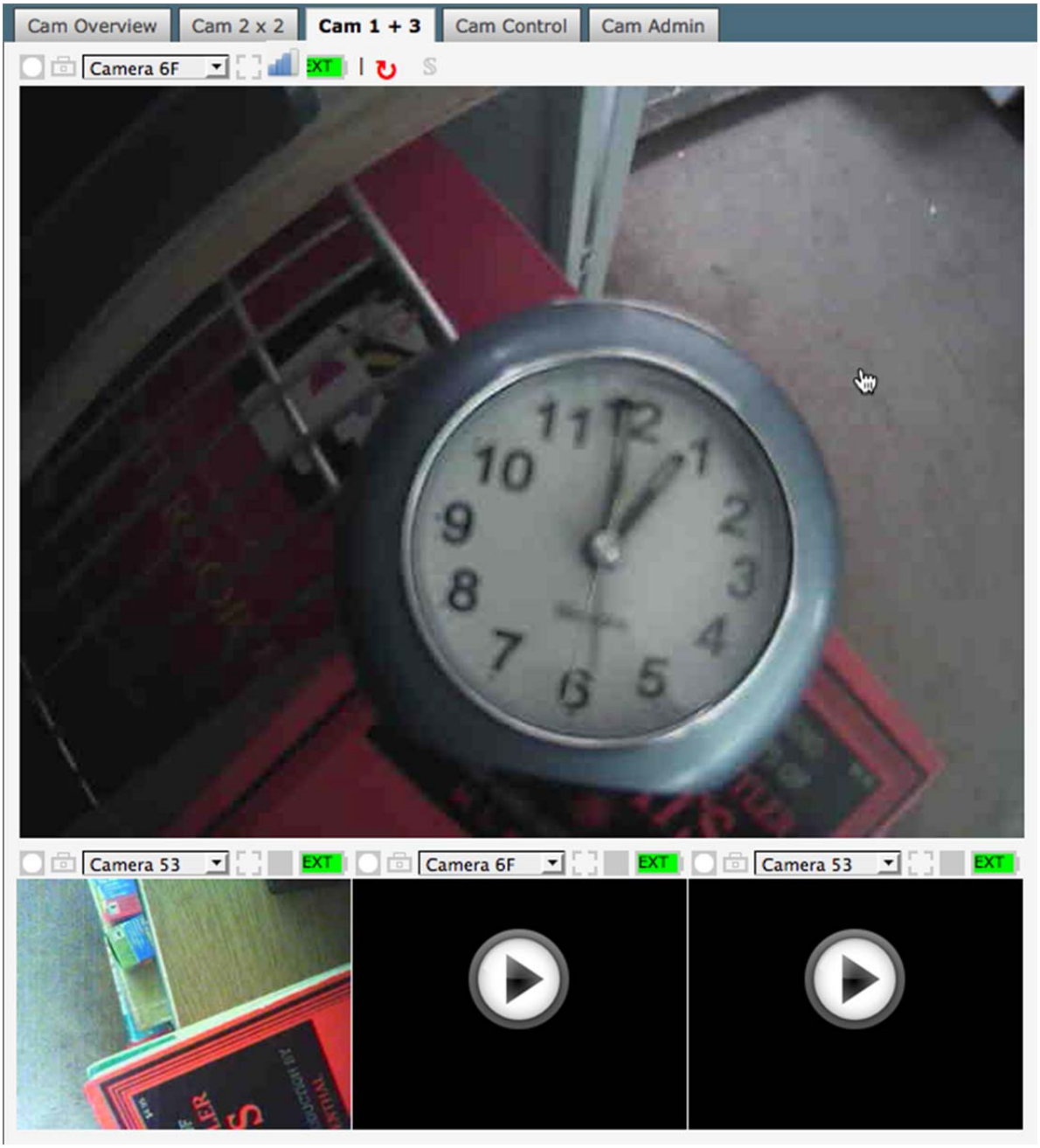
This area left blank intentionally.

Cam 1 + 3

The Cam 1 + 3 page provides an alternative viewing experience for viewing up to four cameras. One camera can be set in the larger window. Besides the obvious difference of the larger screen, DVR replay can be accessed from this screen.

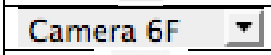
Figure 7

Sample Cam 1 + 3 Page with DVR Replay On and S indicating User sees Streamed Video



The controls available on the Cam 1+3 page are:

Table 4
Cam 1+3 Controls Explained

Control	Description and options
	Recording indicator. When red, indicates camera recording is on and camera is recording. Video is being recorded.
	Enables users to change a camera name.
	A drop down useful in changing the viewed camera.
	Click on this icon to enlarge that camera window.
	Indicate Wi-Fi strength as received by that camera ?? The icon consists of 4 bars and operates much like the cellular strength indicator on a cell phone.
	Indicates battery life. When 'EXT' appears inside the icon, indicates that the camera is running on external power.is re
ℝ	Indicator for a user to let them know that they are seeing DVR video in a camera window. Appears ONLY after user clicks on 𝕊 to enter Replay mode.
𝕊	Indicator for a user to let them know that they are seeing streamed video in a camera window.
↻	DVR Replay button. When grey, video is not being recorded in DVR.
	Play button. Only appears with user has clicked on 𝕊 to enter DVR replay.
	Indicates streamed video not displayed. Click on the arrow to restart streaming video.

This area left blank intentionally.

Cam Control Page

The Cam Control Page provides you with valuable information about the configuration and condition of your system.

Figure 8 Cam Control Page

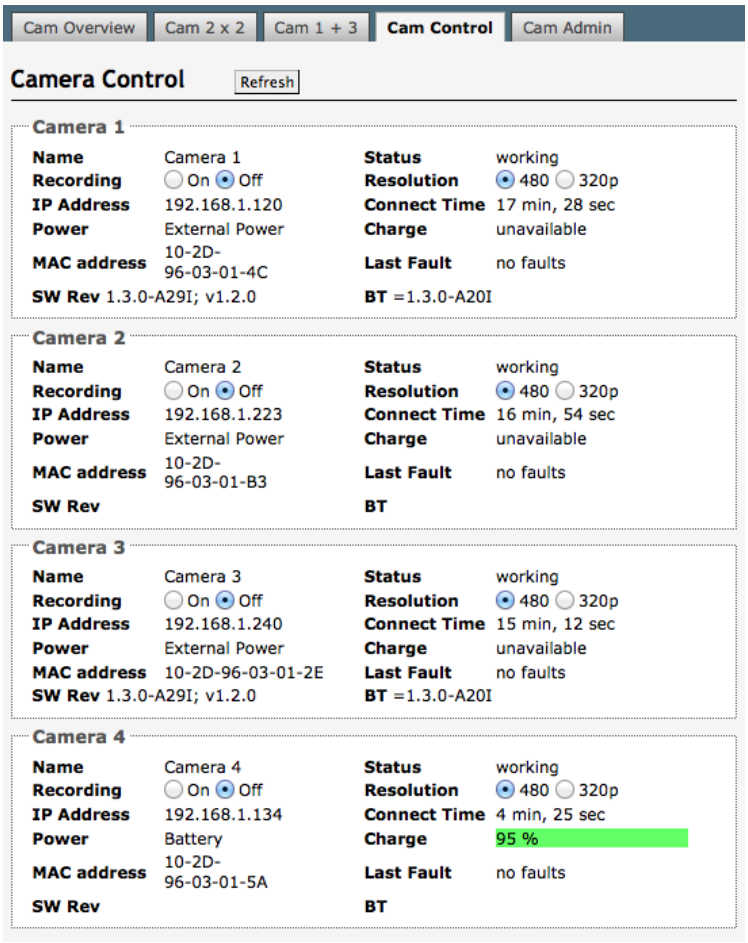


Table 5
Cam Control Page Field Descriptions

Field	Options	Description
Name	None	Shows camera name. Default camera name is the 'Camera 1, 2, 3 or 4 with the last 3 digits of their MAC address. Example: Camera 2F = Camera 1, with a MAC address ending in 2F.
Status	None	Status reported are: Working or Dropout
Recording	On or off	Recording appears if the administrator enables recording. Otherwise this field does not appear.
Resolution	480 or 320p	Resolution appears if the administrator enables recording. May show 'disabled' when recording is turned off and 'enabled' when recording is turned on.

		Otherwise this field does not appear.
IP Address	None	IP address of the device
Connect time	None	Shows how long the camera has been connected to the hub.
Power	Battery or External Power	Shows camera power source. 'Unavailable' appears when the camera is on AC power.
Charge	None	Shows remaining charge in % of battery. Charge level can be listed as unavailable when camera is on external power because battery cannot be read.
MAC Address	None	MAC address for device
Last Fault	None	Shows the last fault associated with the camera or the hub or repeater's connection to that camera. In other words, the fault may be with the camera or with the software on the hub
SW Rev	None	Revision number of installed software on camera
BT	None	Revision number of software on the hub

Cam Admin Page

The Cam Admin page is for system administrators.

This area left blank intentionally.

What you can do with the Looxcie LXQ Web-Based Application

Besides using the application to check on the status of cameras, battery life of devices, and the current system settings, you can:

- Recording Mode where you both record video and watch the recorded video
- Streaming Mode where you watch streaming video
- Watch on the Big Screen where you can expand a viewing window
- Change camera names
- Use the DVR Replay feature to play streaming video back

Note, not all Looxcie LXQ systems are configured to record and stream. Please check with your system administrator.

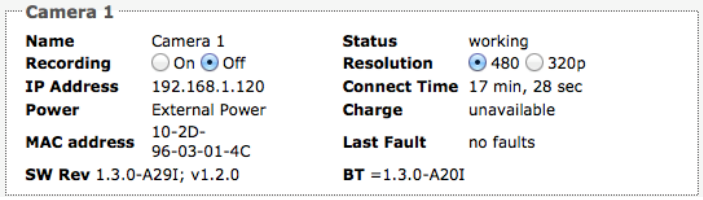
Recording Mode

You can record up to 8 hours of video on the microSD card within each camera. Video is recorded in the MPEG4 format.

If you do have a system that can record video, you need to:

- Turn on the Looxcie LXQ cameras
- Set the cameras to record mode In the Cam Control page
- Choose a video recording resolution (480 or 320)

Figure 9
Recording Controls if Recording is Enabled



To see if your system is recording, go to the Cam Control page, and look for the recording settings. If recording is enabled and running, you will see both the recording and resolution controls. In Figure 15, recording is enabled but turned off.

Recording this video can be saved in a series of video clips. Your system administrator is the only one who can set the recording clip size. The default clip size is 10 minutes. Audio is not recorded in recording mode.

You can watch the recorded video while it is being recorded from either the Cam 2 + 2 screen or the Cam 1 + 3 screen. If you want to watch the recorded video later, you download the video from the camera via USB to a laptop and play it back on your laptop.

Streaming Mode

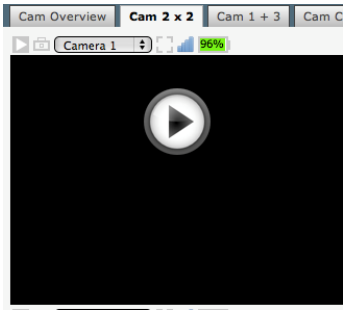
The Looxcie LXQ System can operate in Streaming Mode, which means that cameras stream video. You watch this video via the Looxcie we-based cameras that stream video to a hub and then the hub relays the video to a viewing device such as laptop or iPad. No video is recorded in this mode unless DVR Replay is enabled (See the section on DVR Replay for more information about DVR Replay) or recording is enabled.

The 'YouTube' like interface provides button controls and windowing options to watch up to four cameras simultaneously. Once, you click on either the Cam 2+2 page or the Cam 1+3 page, if the cameras are streaming video, you should see it automatically without clicking further as shown in Figure 17.

When you navigate to the Cam 1+3 or Cam 2+2 page for the first time, you will need to click on the play button in the center of each window. You can change the arrangement of the cameras. You click on the camera drop down to select the camera for each viewing window. Your browser's cookie will remember your action and when you return to the Cam 1+3 or Cam 2+2 pages, the video should play automatically.

From time to time, you may need to click on the YouTube –like 'white arrow play buttons' in each camera's window to restart video from a particular camera.

Figure 10
Sample Cam 2 + 2 Screen Where User Needs to Relaunch Video



Watching the Big Screen
You may want to watch one particular video stream in a larger window without the other windows present. Here's how to do so.

Figure 11
How to Expand the Viewing Window

Click on the grey outline of the box to expand any video window. Click inside the video window to collapse the expanded video window.

Here's what you should see.

Streaming and Recording Simultaneously

Your system can both stream and record video assuming your system administrator has set up your system to do. Streaming video will appear in the video window for each camera. Recorded video will be captured on the camera itself.

You will need to connect the camera via USB to a laptop to access the stored video file to view the video. DVR Replay is available when the system is streaming and recording.

To turn on recording or streaming, you can do so from the Cam Control page.

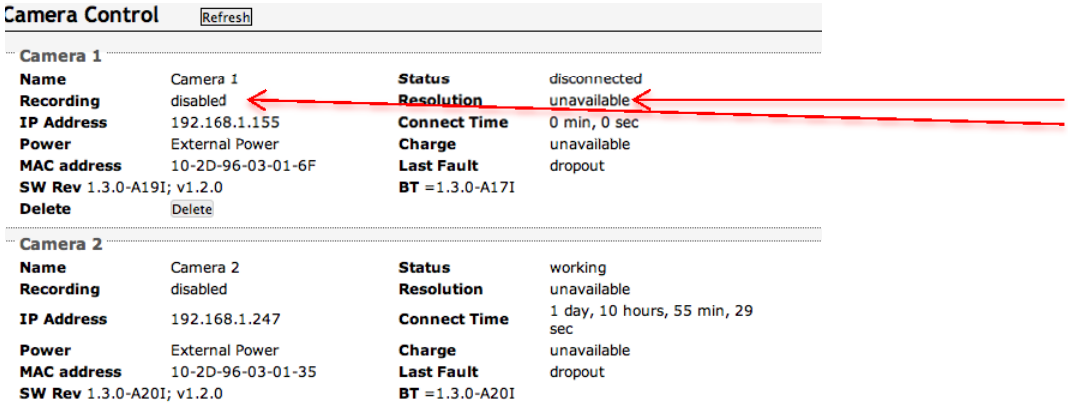
You can confirm if your system is enabled to stream and record by going to the Cam Overview or Cam Control page to view your settings.

Streaming versus Recording

Your administrator will have set up your system for recording or streaming. There are significant differences in the user interface in the web-based application. Here's a list of the differences:

- Recording is turned off
- Resolution is disabled

Figure 12
System Configured for Streaming Only



When the system is configured for streaming, Recording is disabled and resolution is unavailable. You can't set a resolution for streaming.

DVR Replay Mode

Key Features

DVR Replay Mode, also referred to as DVR and DVR replay, allows a viewer to 'rewind' streaming video and review that video. DVR Replay mode allows a user to replay that video up to one minute after the video has been recorded. You basically have a 1-minute instant replay.

DVR replay should not be confused with Looxcie LXQ recording. Looxcie LXQ Recording Mode refers to a camera in the system that is recording video to its microSD card within the camera.

Here's how DVR works 'under the covers'. In the background, when DVR replay is on, as video comes in from each camera, it is saving the video to the USB drive in the hub. Since the hub only saves one minute of video for each camera, it is constantly overwriting old video. So you cannot go back more than a minute in time to view video. When you click on the DVR replay arrow in the menu bar, you see that one-minute of recorded video.

While you in DVR replay mode, you cannot see the live video that the camera is sending.

The key features of DVR are listed in Table 11.

Table 6
Key Features of DVR Mode

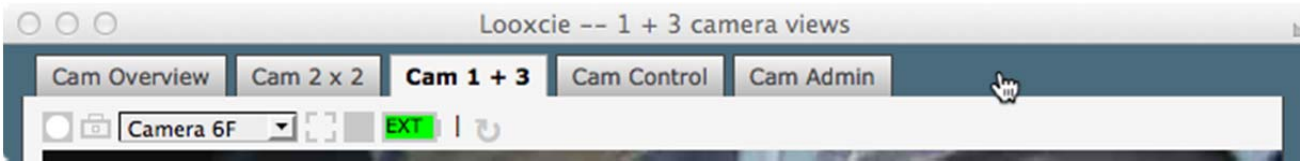
DVR Replay Mode	Available on when cameras are in streaming mode only.
DVR cameras	Maximum of one camera per system can be in DVR Mode. The system cannot support 2, 3, or 4 cameras in DVR mode simultaneously.
Replay window	You can go back up to one minute in time.
Replay period	You can play back up to one minute of video.
Replay cycles	You have infinite number of replays. Once you switch back to streaming mode, the DVR video is lost and replaced with new video.

Setting Up DVR Mode

To set DVR mode for a camera, the camera must be set to streaming. An easy task as streaming is the default mode of Looxcie LXQ cameras. (If you see  in a camera window, video is not streaming. Click on the arrow to restart streaming.).

Next a user needs to click on ↻ found in the Cam 1 + 3 page. In Figure 22, DVR Replay is turned off and the ↻ is grey.

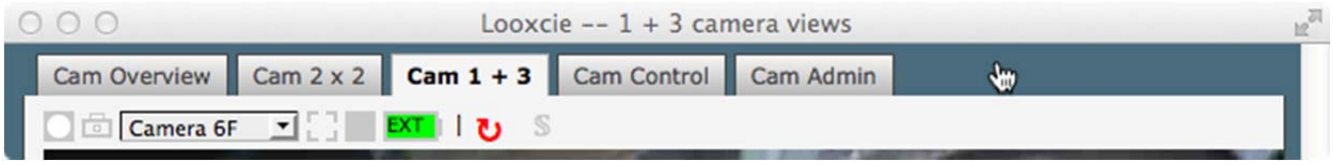
Figure 13 DVR Replay Mode Off
DVR Replay Circular Arrow is Grey.



For DVR Replay to store video, the system hub requires a USB drive to be inserted in its USB port. Without the drive, video cannot be stored. Be sure your hub has a USB drive inserted in it.

Figure 23 shows DVR Replay on as indicated by the ↻. The 𝕊 indicates that the user is presented with streaming video.

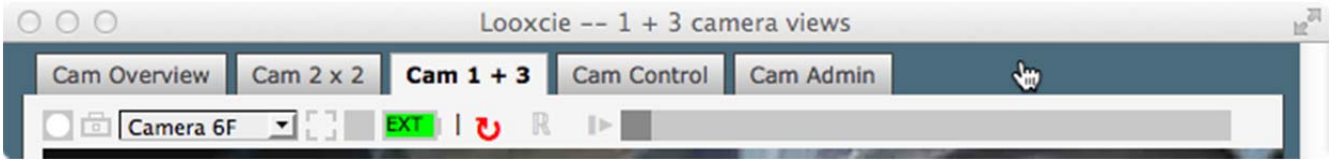
Figure 14
In '1' of 1+3 Window, User sees Replayed Video. DVR Replay is Recording.



Playing Back Video

To play back video in DVR mode, click on the ↻ replay arrow and the Control bar will change to that shown in Figure 24. Then, click on the play arrow to replay the video. Alternatively, you can move the slider, the dark grey box, right or left to review video. Once DVR video is playing, you can click on the Pause button, ⏸ to pause the video. The large ℝ indicates that the user is seeing replayed video.

Figure 24
DVR Replay is On. 'S' Indicates User Shown Streaming Video in '1' of 1+3 Window.



Notes about Using DVR Mode

To better understand how DVR Replay Mode works, the following describes how the feature behaves in greater detail:

- DVR controls only appear in the '1' of the 1+3 screen. DVR controls are not available in the Cam 2+2 screen.
- Only one user can control DVR mode at any moment in time. That is, only one viewer can be controlling the scroll bar. It's analogous to having only one remote control device. The DVR controls affect all viewers for that camera. That is, if a user selects the camera and goes into DVR mode, other users cannot control the camera.
- While replaying recorded video, the live video that is occurring while you are watching DVR replay is not recorded. In other words, you can't watch what you missed.
- Since the system saves about one minute of video, if you wait more than one minute, that video will be lost. The Looxcie LXQ system continuously overwrites the video.
- When switching out of replay mode, you go back to live action – the Looxcie camera streams to the 1+3 window what it is seeing at that moment.
- Tested with a mouse as the input device. Not tested on touch screens.
- You cannot save the DVR replay video as a clip or on a microSD card in the system.

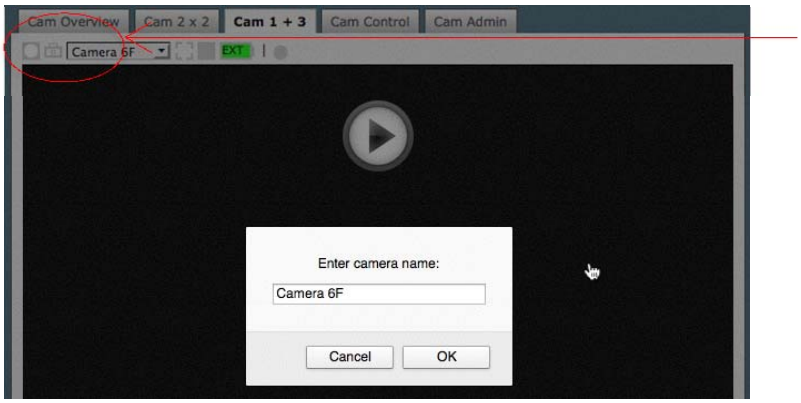
This area left intentionally blank.

Naming your Cameras

Some users may wish to name their cameras. The default name for cameras are Camera XX where XX are the last two digits of the camera's MAC address. To change a camera's name:

- Go to either the Cam 2 + 2 Page or the Cam 1 + 3 page
- Click on the drop down menu listing the camera names. Bring up the camera name to be changed.
- Click on the camera name button .

Figure 25
Re-naming Cameras



Navigate to the camera name. Click on the camera name button. A dialog box will appear as shown here. Enter the new camera name. Click ok to save.

The Vidcie Cam Configurator

About the Vidcie Cam Configurator

The Vidcie Cam Configurator is used to:

- Prep cameras for use in the field
- Update camera firmware

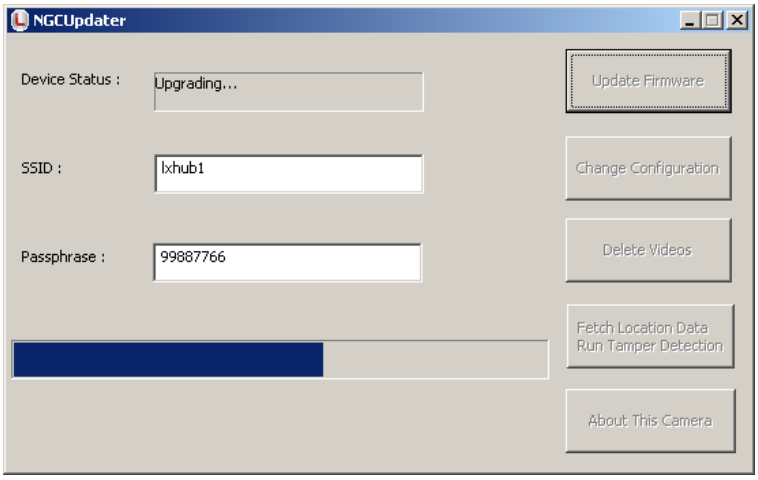
Figure 15
LXQUpdater

The Vidcie Cam Configurator in Detail

The Vidcie Cam Configurator is used for the following purposes as shown in Figure 24:

- Changing the passphrase of an LXQ camera
- Changing the SSID of the LXQ camera
- Upgrading camera firmware

Figure 16
Main Screen Showing Functionality



In contrast to the Vidcie web-based application, the Vidcie Cam Configurator can only be used when installed on a PC. To use any of this functionality, you need to have the Vidcie Cam Configurator installed and attach the camera whose configuration that you want to change or contains the appropriate video file. If you don't have the app installed, see the section entitled, *Setting up the* Vidcie Cam Configurator, to learn how to install the application.

Changing the configuration of an LXQ camera

From time to time, you or the system administrator will need to change the configuration on the LXQ cameras. The Update allows you to change the SSID and passphrase. To change the passphrase or SSID, do the following:

Figure 17
Changing Camera Configuration

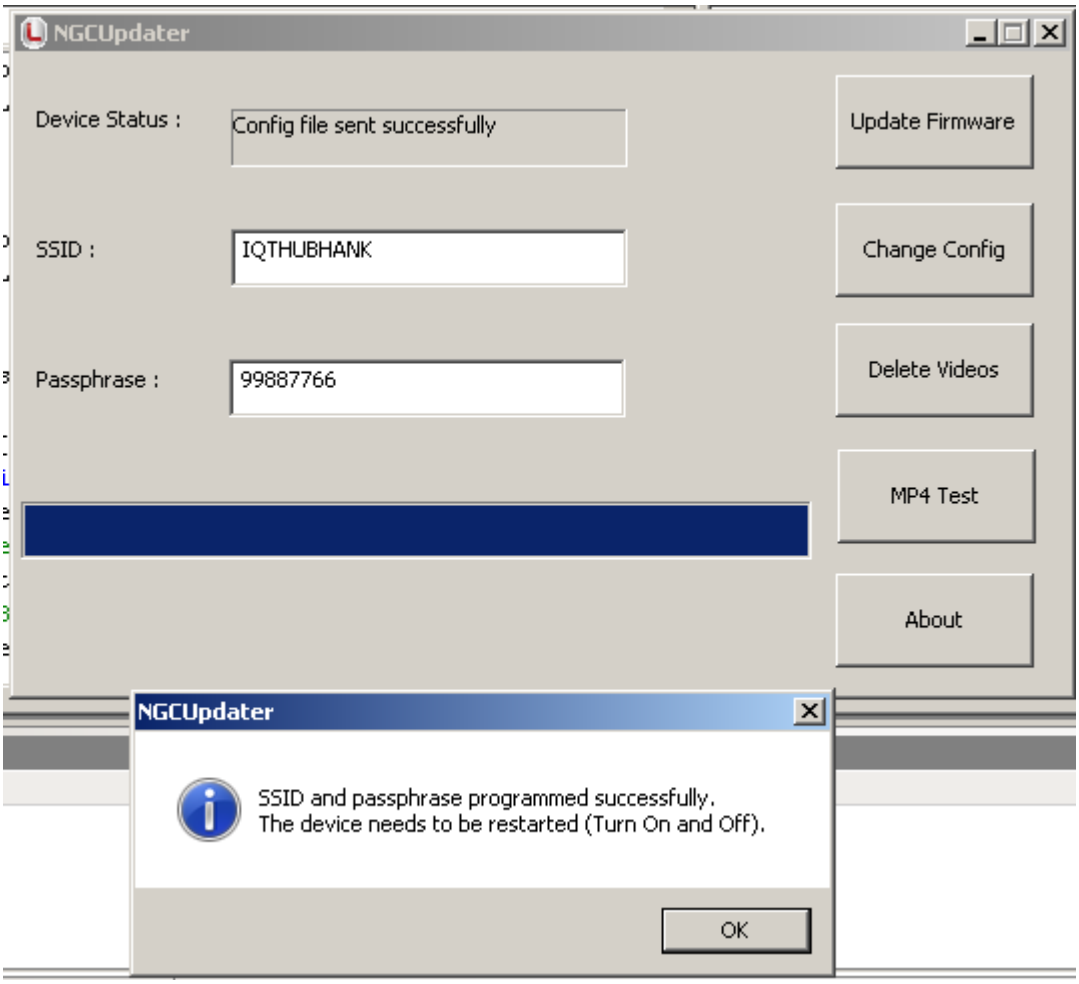
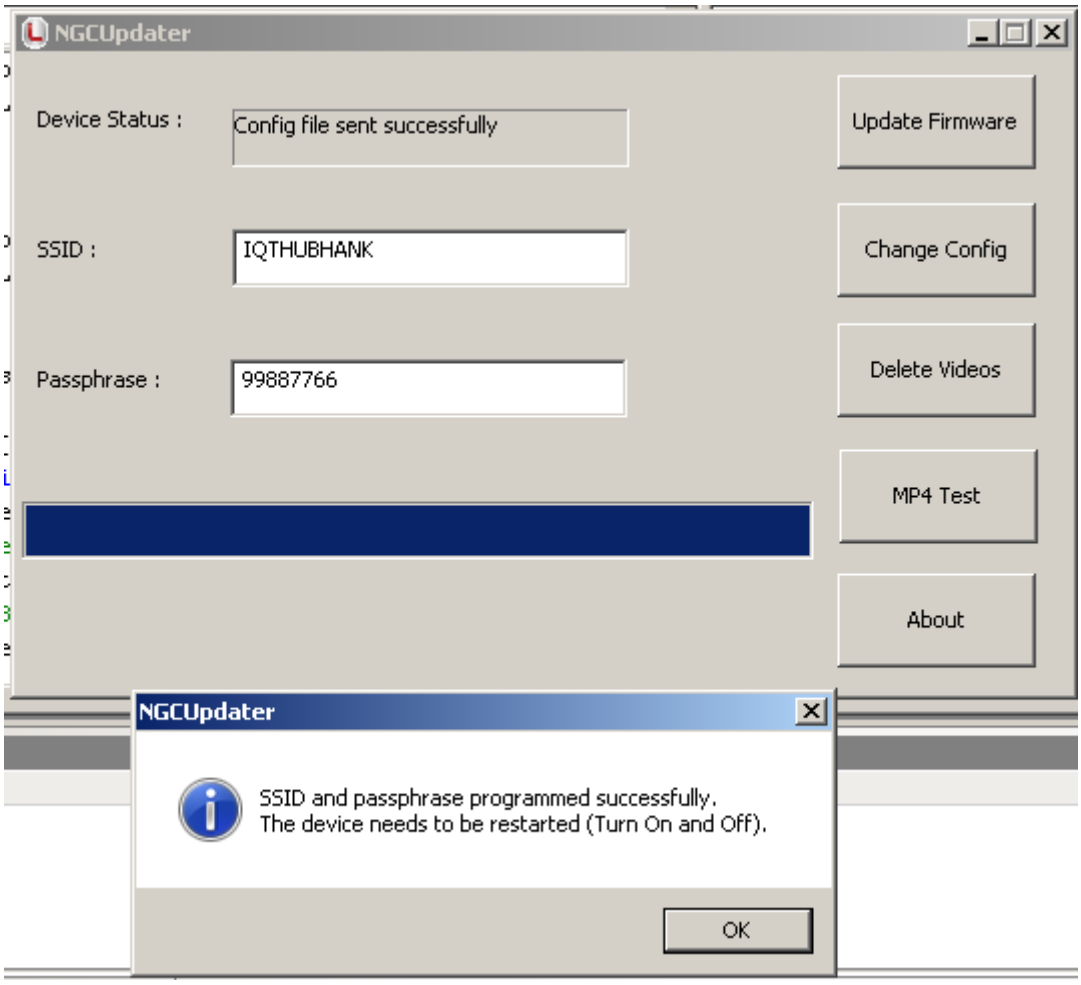


Figure 18
Screen Shot Showing Successful Changes to SSID & Passphrase

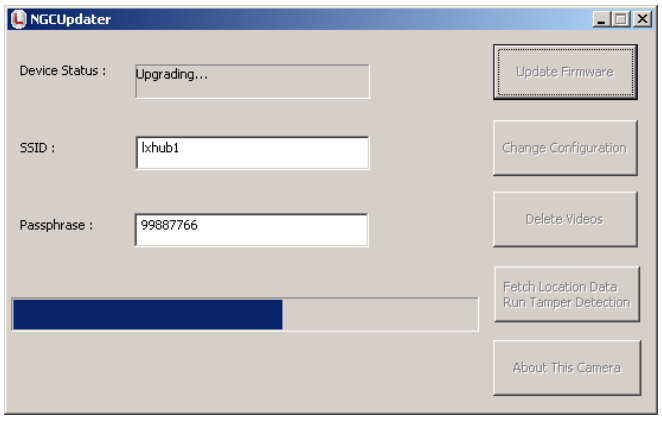

NGCUpdater
Device Status :
Config file sent successfully
Update Firmware
SSID :
IQTHUBHANK
Change Config
Passphrase :
99887766
Delete Videos
MP4 Test
About
NGCUpdater
SSID and passphrase programmed successfully.
The device needs to be restarted (Turn On and Off).
OK

Upgrading Firmware

To upgrade the camera's firmware, connect a camera to a PC. Select the appropriate file from the laptop's hard drive and then run the updater. The following figure shows an update in progress.

Figure 19

Using the Updater to update a Camera's Firmware



Setting up the Vidcie Cam Configurator

- To begin to set up the Vidcie Cam Configurator, you need to contact your agency personnel responsible for the Looxcie LXQ solution. They will provide you the software for the Vidcie Cam Configurator. You will also need a Windows PC with any OS (XP to 8). The application does not run on Linux or Macintosh.

Simply click on the file name, VidcieCamConfig.exe and run the installer. Next, accept the license agreement. After accepting the license agreement, your installation will be complete.

FAQs

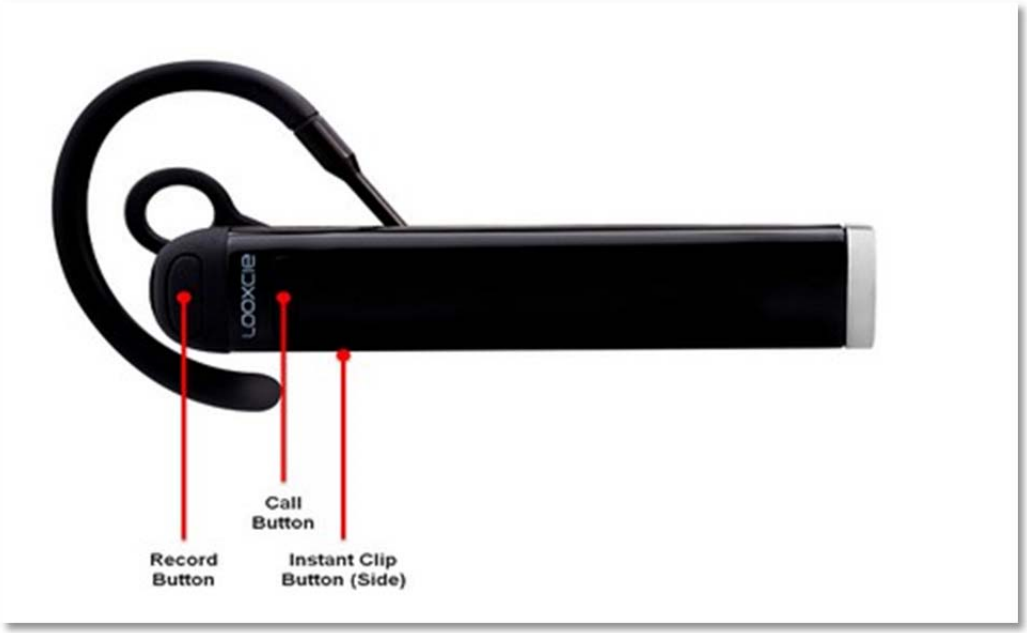
General

How do I reboot the camera?

To reset a camera,

- Turn on the camera – slider switch on the side of the camera. It's on when green is revealed.
- Push simultaneously the "Record" button (the button with the "red" dot above the Looxcie logo") and the instant clip button (on the side of the device).

Figure 20 LXQ Camera Buttons for Rebooting



Video

I can't see video in a window.

Take these steps:

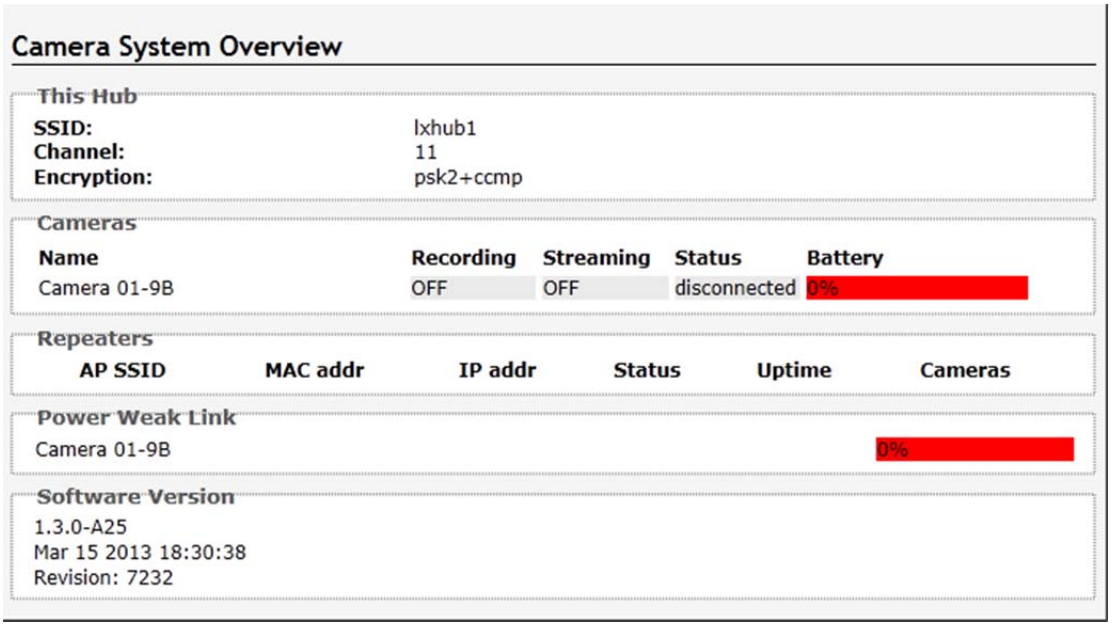
- Click on the camera window to refresh the image
- Refresh your browser
- Turn the camera on and off

I see the following image. What's going on?

This image indicates that the video is not available to the viewing device. To remedy, click on the arrow. If that does not work, turn the camera on and off

Devices
I want to have the camera record without the hub or a repeater attached.
You will need to go to the camera and physically turn on the camera. See this section for a diagram showing the location of the record button.

What's a red Power Weak Link?
A device in the network has a problem. In this example, the camera, Camera 01-98 is out of power. To fix, recharge the camera.



Looxcie Web-Based Application

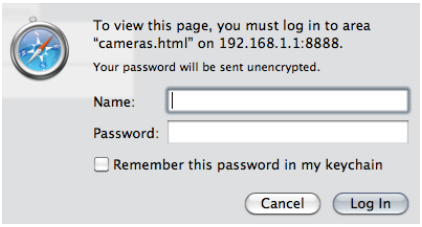
How do I Log in?
Point your browser to 192.168.1.1 to log into your Looxcie LXQ System.

I can't see the SSID.
Log into the Cam Admin Page. Go the section on that page with the heading, Router and Wi-Fi Management. You should find the SSID there.

The pages of the Looxcie web-based application seems to flicker.
The Application is designed to refresh the pages every 5 seconds. This is how the application should perform.

I log in with the correct user ID and password but the system does not grant me access.
Try logging again as the TP-Link Hub sometimes does not accept the user ID and password on the first attempt.

I try to quit out of the Cam Admin Log in Dialog and it reappears.
You may see this dialog box appear repeatedly. To remedy, restart your browser.



I see this dialog box, what do I do?
Wait a few moments, the camera may restore itself. If not, check the camera and turn the camera off and back on.

Appendix B Technical specifications for Camera Lenses

		D FOV	HFOV	Mfg	F length	Vendor Description	Vendor Part #
Omnivision 65-Deg FOV		65	65	Kinko	2.0	Not available	OV77440
Aptina Sensor MT9V129 Sunex 75-Deg FOV		75	75	Sunex	2.0	All glass wide-angle lens with IR cut coating 670nm, advanced IR Blocking, metal barrel, for 1/4: sensor, EFL=2.9, F/2.0, M12x0.5	Sunex DSL228A-670-F2.0
Aptina MT9V129 Sunex 93-Deg FOV		121	93	Sunex	2.0	Wide-angle, multi-megapixel, hybrid lens for day/night applications, 1/4" sensor, with IRC30 IR cut-off coating, EFL 2.4, F/2.0, M12x0.5, metal barrel	Sunex DSL322A-650-F2.0
Aptina MT9V129 Sunex 123-Deg FOV		155	123	Sunex	2.0	Wide-angle glass lens with IR cut-off coating at 650nm, for 1/4" sensor, EFL=1.7, F/2.0, M12x0.5	Sunex DSL209A-650-F2.0

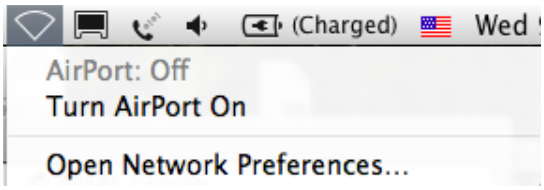
Vendor Contact information:
www.ovt.com
www.sunex.com

Appendix E Accessing Your Looxcie LXQ system network when the Network Name is Not Broadcasted

As a user of the LXQ system, you may need to access the system's network when the network name is not broadcasted. Here is the process to do so.

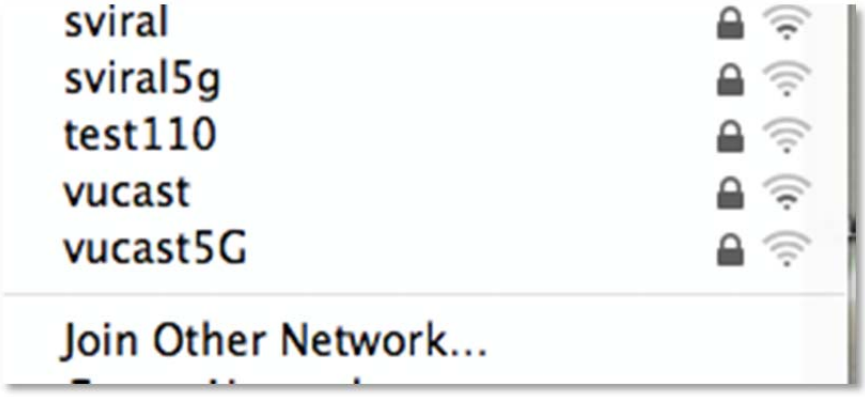
Macintosh
Go to your Network icon in your top menu bar, click on it to turn AirPort on. AirPort is Apple's term for Wi-Fi:

Figure 21 Macintosh AirPort Control



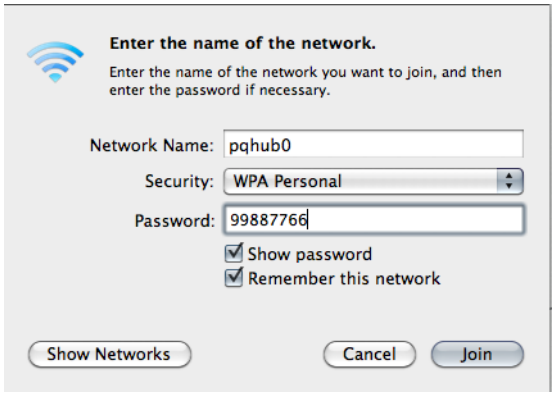
Wi-Fi networks in the area will be listed. Click on 'Join Other Network….'

Figure 22
Screen Shot of 'Join Other Network...'



Enter your network information into the fields. See the table below for more info on what to enter.

Figure 23 Accessing a Network

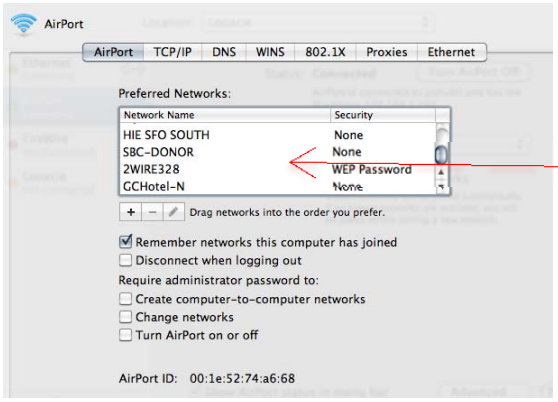


Within ‘Network Preferences’, you will be presented with a dialog box. Enter the following information:

Field	Value	Value in this example
Network Name	The SSID for your network	pqhub0
Security	Choose WPA Personal	
Password	Enter the network password provided by the administrator	99887766

Macintosh Handling of networks

Note to administrators: The Mac OS always remembers any network names that it has logged into even if the network name is not broadcasted later. Users can see the ‘hidden’ network, click on it and access the network. To remove the network name before distributing a Mac or iOS device, go to the following AirPort address and delete the network name.



Click on the network name and then click on ‘-‘ or uncheck the box “Remember networks this computer has joined’.