AgileMesh Viewer User Guide

Viewer version 10.4.X

June 1, 2015

Rev 4.0

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Introduction

The AgileMesh Viewer is the software that enables users to view and record the images from AgileMesh cameras at up to 16 different locations simultaneously.   The AgileMesh Viewer also allows users the ability to control or PAN/TILT/ZOOM (PTZ) cameras from any computer that has an Ethernet connection and the AgileMesh Viewer software installed.   Any analog camera can be connect to an AgileMesh node and can be displayed.   A few of the features supported by the AgileMesh Viewer are:

- Simultaneous Multi-Channel Monitoring (1/4/9/16 camera views)

- Sequential and Full Screen Monitoring

- Snap Shot for a still image and Recording

- Playback with the AgileMesh Player

- Image Attributes Adjustment

- PAN/TILT/ZOOM Control

Minimum System Requirements

	Windows XP Professional (32bit)	Windows 7 Professional (32bit)	Windows 7 Professional (64bit)
CPU (GHz)	1.7	2.3	2.3
RAM (GB)	2	4	4
Disk (GB)	60	120	120
Video Card	1024 X 768 (128 MB)	1024 X 768 (256 MB)	1024 X 768 (256 MB)

Recommended System Requirements

	Windows XP Professional (32bit)	Windows 7 Professional (32bit)	Windows 7 Professional (64bit)
CPU (GHz)	2.5 (multi-core)	3 (multi-core)	3 (multi-core)
RAM (GB)	4	8	8
Disk (GB)	120	500	500
Video Card	1280 X 1024 (512 MB)	1280 X 1024 (512 MB)	1280 X 1024 (512 MB)

Notice that ONLY Windows XP Pro and Windows 7 Pro are supported.

Software Installation

> Info:
>
> Use "Add/Remove Programs" in the Windows Control Panel to remove a previously installed version of the AgileMesh Viewer before installing a newer version.

Use the AgileMesh Master Installer CD or download the AgileMesh Viewer from the AgileMesh website (Products → Software → login.   (Contact AgileMesh to get a unique login and password.)

Double-click on the "amviewer-X_X_setup.exe" file to install the viewing application software.
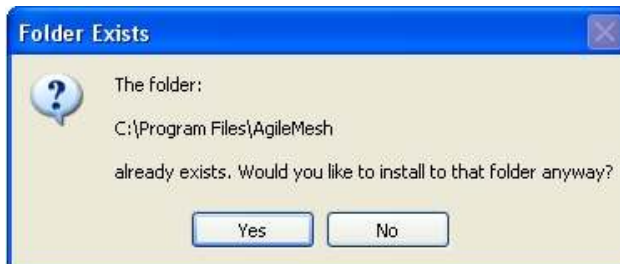
Click "Next" button.
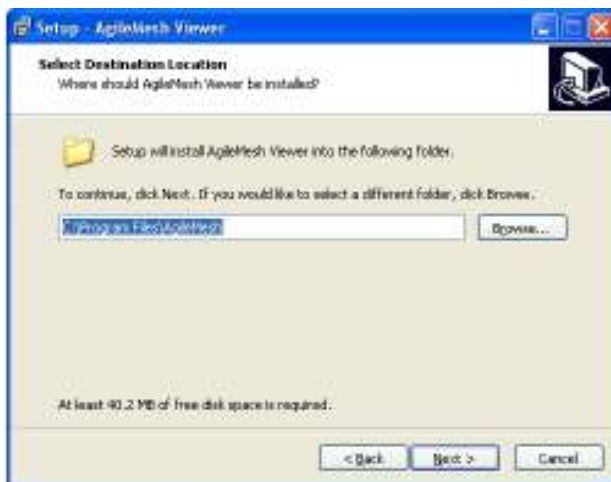
Click the "Next" button to install the AgileMesh Viewer in the default location shown (RECOMMENDED).

Click "Next" button

[Optionally, click on "Browse" to select the location to install the Viewer.]

Note: The default directory is recommended.

If the AgileMesh Viewer has been previously installed or the folder exits, this message may appear.

Click the "Yes" button and proceed with the installation.

Select the Start Menu Folder.

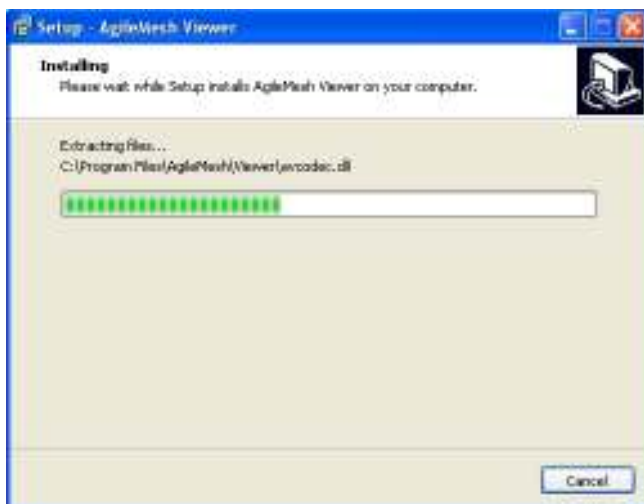**Note: The default folder is recommended**

Click "Next >" button.

.

If the "Destination Location" and "Start Menu folder" are correct:

Click "Install"

Note: The default folders are recommended

Wait until the progress bar is completely filled (installation complete).

To cancel it, click "Cancel" button.

Installation is complete.

Click the "Finish" button.

Info:

The AgileMesh Viewer is licensed to be loaded on any number of PCs.

Overview

Controls for the AgileMesh Viewer are shown below.   The description of each button is displayed when the mouse pointer "hovers" over a button.   A button is not "active" if it is "grayed out".   A more detailed description of the use of each function and feature are described in **Camera Controls** section.
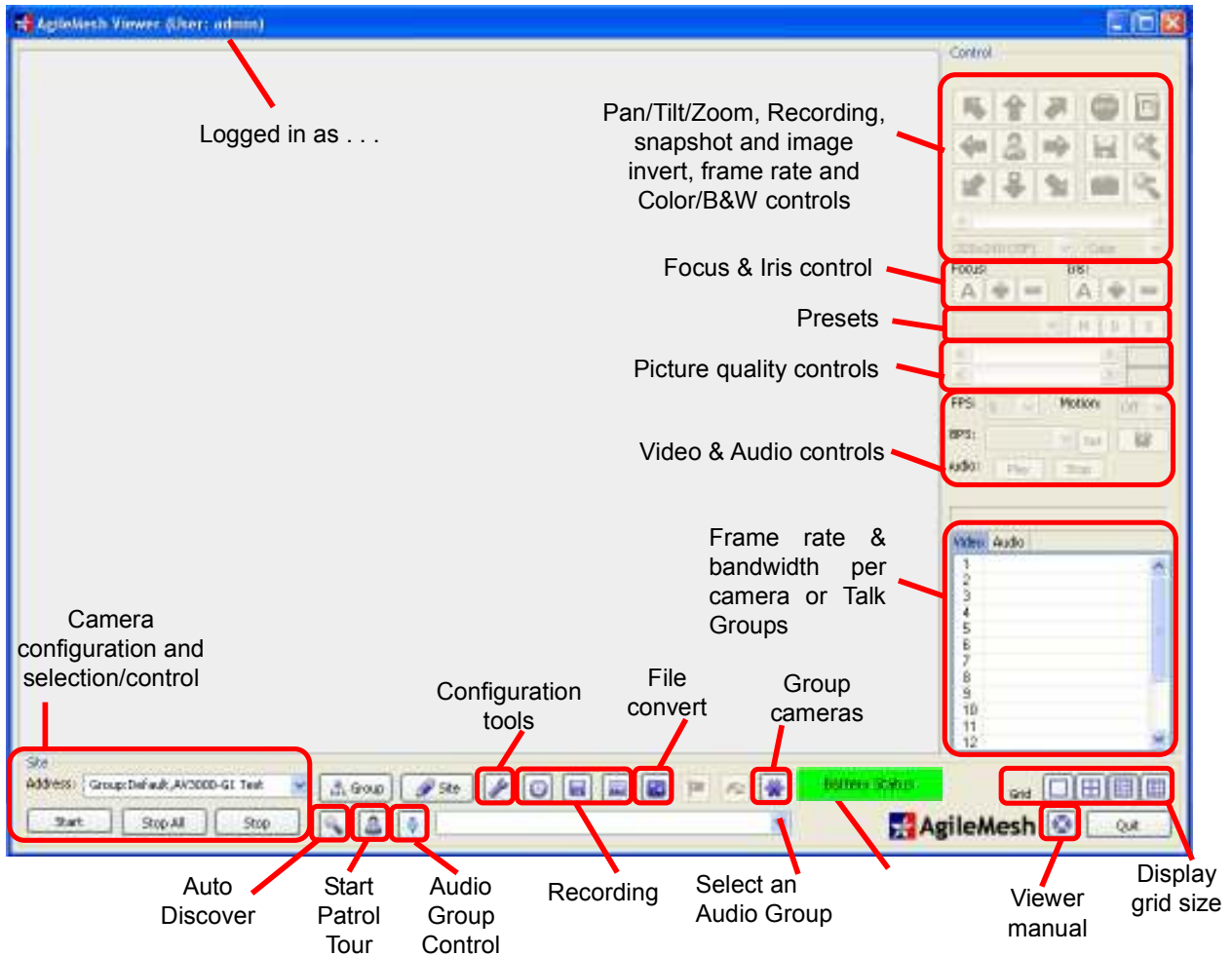
Important:

1. The default IP address of an AgileMesh camera is 192.168.119.XX. PCs used to view and or record using The AgileMesh Viewer should have their local Area Network (LAN) adapter set to an IP address in the range of 192.168.119.2 to 192.168.119.9 if directly connected to an AgileMesh node or in the same range of an IP address assigned to it by the AgileMesh Network Bridge..

2. If more than one PC is connected to the same group of cameras at the same time, each PC should have a unique IP address.

AgileMesh Viewer

Initial Setup and Viewing Video
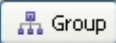
Locate and double-click on the desktop icon for the AgileMesh Viewer to start the viewing application.   The default administrative Log Name and Password is "admin".   Click on Login to proceed.

Connect an Ethernet cable from the PC running the AgileMesh Viewer to an AgileMesh G2 node.   The IP address of the Ethernet adapter should be in the range of 192.168.119.2 to 192.168.119.9.   An example setup is shown below.   The node connected to the PC is set to node 0.   All four nodes are set to the same channel, but each node has a **unique node number** as shown.
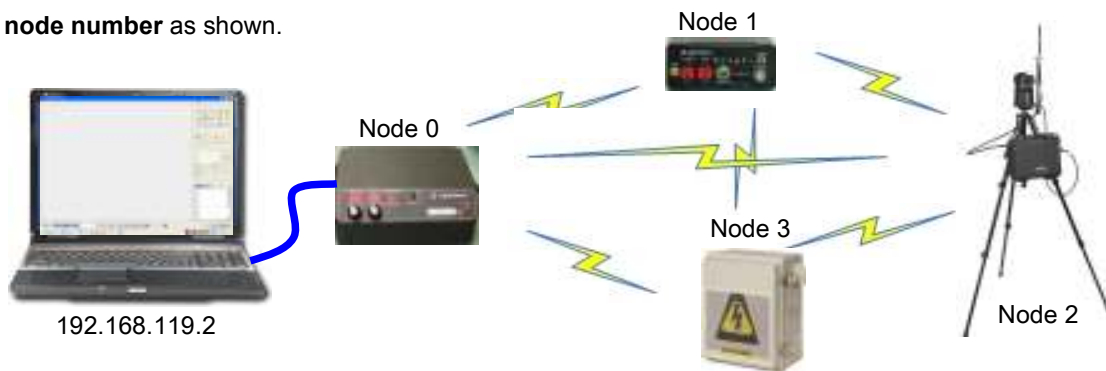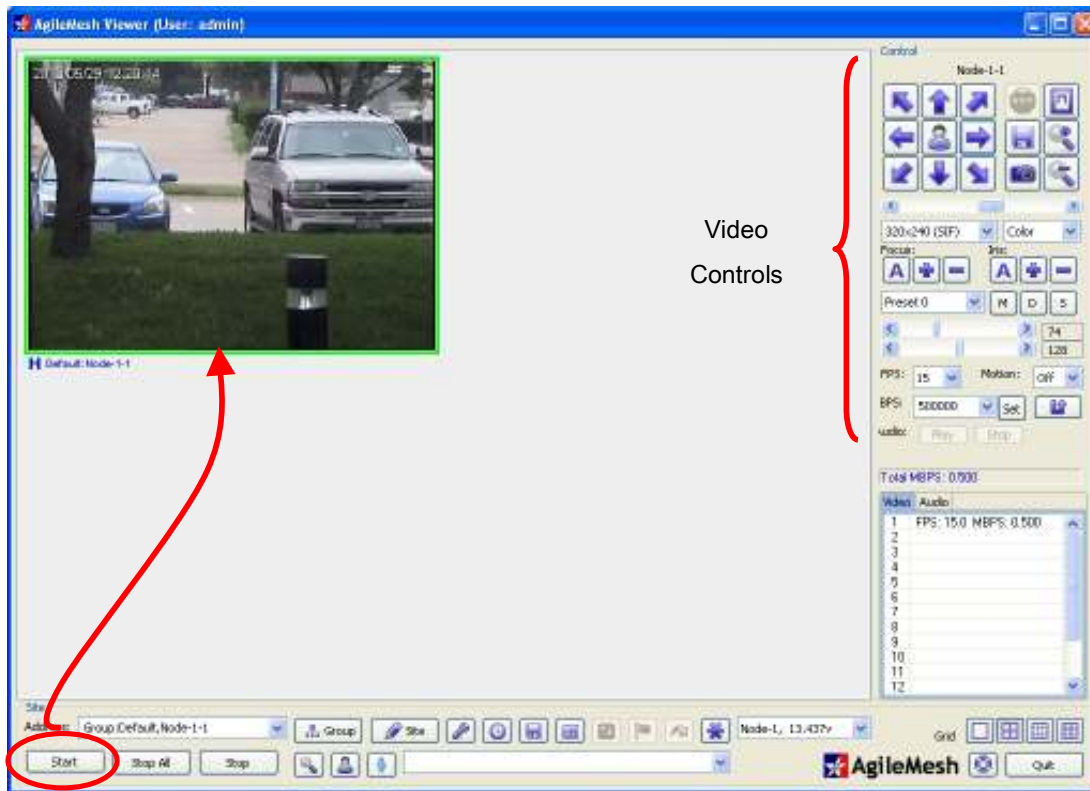
To view the camera from Node 1, click on the button (1) to bring up the "Select a Site" dialog, expand the "Default" (2) Group and select Node-1-1 from the list (3) and click "Select" (4). This will load Node 1's camera into the "Address:" window. (5)

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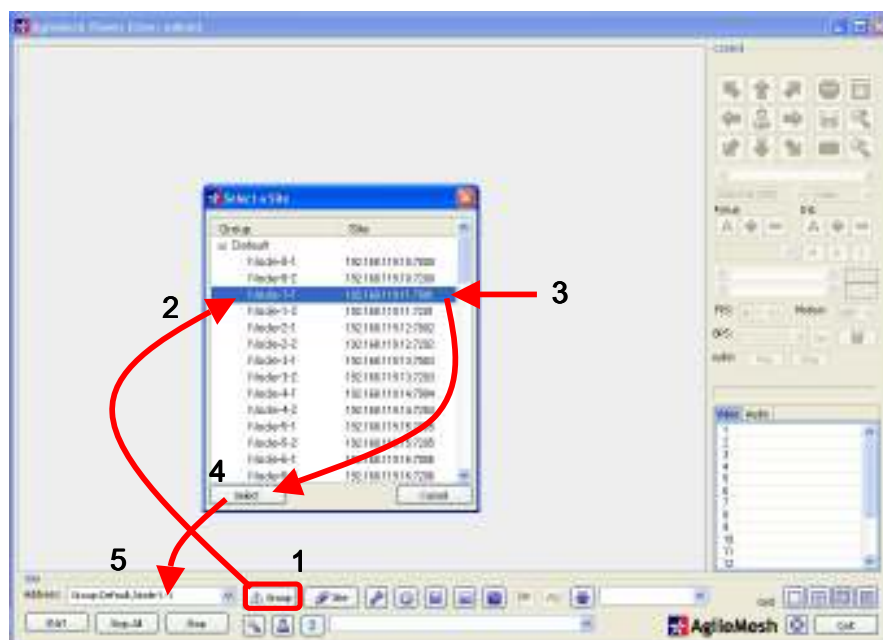
Info:

There are two codecs in each AgileMesh G2 node. For Node 1 they are designated Node-1-1 and Node-1-2 in the "Default" list. One codec can be H.264 and the second codec can be MJPEG (or any combination). The factory default setting is H.264 for both codecs.

The video from Node 1 will be displayed by clicking on "Start" as shown below. Clicking on the video display window will draw a rectangle around the video from Node 1. This will turn on the camera controls that were previously grayed out. See below.

To view the camera from Node 2, click on the [Group] button to bring up the "Select a Site" dialog, expand the "Default" Group and select Node-2-1 from the list and click "Select". This will load Node 2's camera into the "Address:" window. Click on the "Start" button to launch the video in to the next available location on the AgileMesh Viewer.
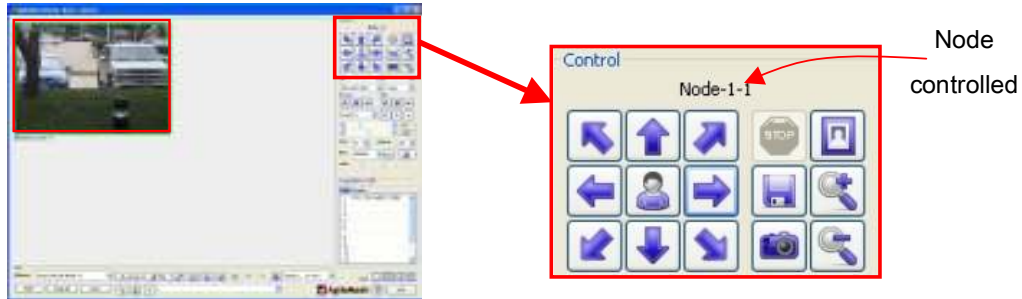
Repeat the steps above to add additional cameras.

Info:

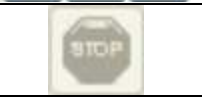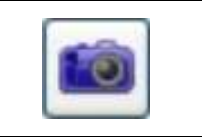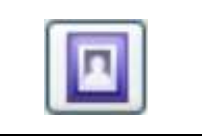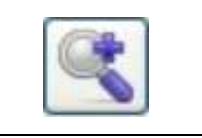For analog cameras connected into an AgileMesh node's "Video In" port, a list of default settings (one for each node number) is pre-defined in Appendix 1. IP cameras can be connected to AgileMesh nodes as well. Use the IP camera vendor's viewer to view video.

Camera Controls

Select a camera that is to be controlled by clicking once on the video display for that camera.
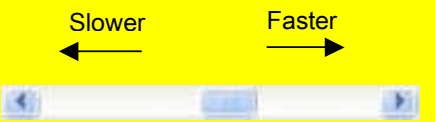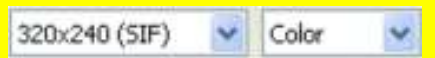
The node number of the video that is selected is indicated above the control arrows.

	Clockwise from the upper left: PAN left & TILT up, TILT up, PAN right & TILT up, PAN right, PAN right & TILT down, TILT down, PAN left & TILT down and PAN left Center: starts Patrol Tour ONLY for the one camera selected
	STOP RECORDING (shown grayed out)
	RECORD video from one camera selected
	Take a SNAPSHOT (jpeg) of the selected video to any location selected on this PC (QSIF, SIF or VGA resolution)
	INVERT the selected video
	ZOOM in (magnify) on the selected video
	ZOOM out on the selected video

Additional camera controls are located under the PAN and TILT arrows.

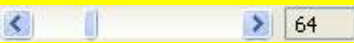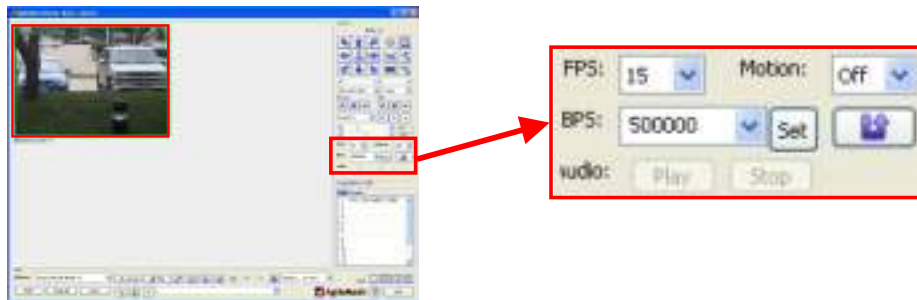|	The speed slider adjusts the speed of the PAN/TILT/ZOOM controls. Moving the slider to the right will speed up camera movements, while moving the slider to the left will slow down camera movements.
Slower Faster	
	Video resolution is set with the dropdown menu on the left. The options are QSIF (160X120), SIF (320X240) and VGA (640X480). Color or B&W are set with the dropdown menu on the right.
320x240 (SIF) Color	
	Camera focus can be automatically adjusted by clicking on the "A" button or manually focused using the "+" (plus) or "-" (minus) buttons. The camera's iris can be automatically adjusted by clicking on the "A" button or manually focused using the "+" (plus) or "-" (minus) buttons. **AgileMesh cameras are set (inside the camera) to Automatic Focus and Iris, and cannot be controlled by these buttons.**
Focus: Iris:	
	Camera presets are used to quickly move the position of a camera to previously setup location(s). The presets control PAN/TILT/ZOOM. There are up to 256 presets available for each camera. To SET a preset, select the preset number from the dropdown menu and click on the "S" button. To MOVE the camera, select a preset number and click on the "M" button. Clicking on the "D" button will delete a preset. See the **Advanced Configuration** section to give a preset a name.
Preset 0 M D S	

Info:

Any analog camera connected to an AgileMesh node that is PAN/TILT/ZOOM capable can be controlled by the AgileMesh Viewer. The default camera controls are Pelco-D, 2400 baud, 8 bits, No Parity, 1 stop (8-N-1) over RS422/485.
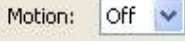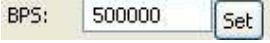
Video contrast and brightness sliders are located below the Preset controls.
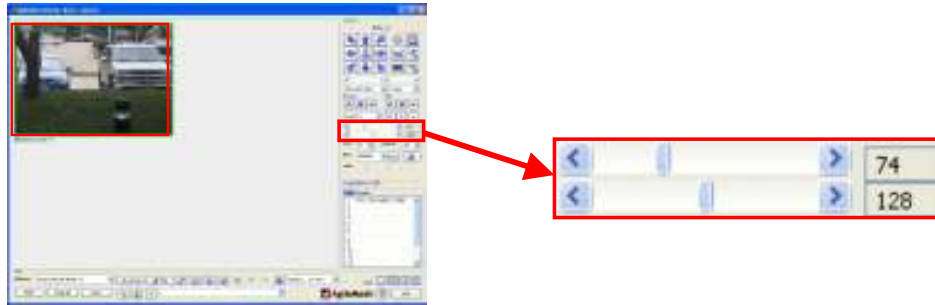
	The video contrast slider adjusts the contrast from 0 (all black image) to 255 (highest contrast).
	The video brightness slider adjusts the brightness from 0 (minimum) to 255 (maximum).

The following controls are used to change the number of frames per second (FPS), the maximum bit rate (BPS) transmitted from an H.264 codec as well as audio controls. An MJPEG codec has the BPS field "grayed out" as it cannot be limited in this manner.

	The Frames Per Second (FPS) dropdown menu allows 1, 5, 7.5, 10, 15 and 30 FPS.
	Motion control will be implemented in a future release.
	This setting is for H.264 codecs only. Enter the maximum number of Bits Per Second (BPS) desired and click on "Set" to change the default of 200,000 (0.2Mbps) per camera. The BPS value can be unique for every camera connected to an H.264 codec. Max setting is 1 million bps.
	If the video image from a camera has a thick black line across the screen, click on the RESYNC button.
	Click on "Play" or "Stop" for audio associated with the selected video. Audio is an upgrade option.

Playing Audio to the Viewing PC

AgileMesh nodes can be licensed for one-way audio from the node to the Viewing PC.   Here are the rules of operation.

If recording is ON:

1. If the "Enable Audio on select" checkbox is checked (See Viewer Configuration Overview), clicking on the video will start sending audio to the PC's speakers.

2. If the "Enable Audio on select" is unchecked and the camera with the audio source is selected by clicking on that camera's video, click on "Play" to hear audio over computer's speakers.

If recording is OFF:

3. Click on video and then click the 'Play' button to hear audio over the computer's speakers.

4. If audio is playing to the PC's speakers and another video (without audio) or on a blank spot on Viewer is clicked, the audio will stop playing.

5. To hear audio from an enabled node, "Play" must be clicked again anytime the video is reselected.

Wireless Bandwidth Utilization and Audio Tab

The total wireless bandwidth utilized to bring in all video images to the AgileMesh Viewer is displayed in Millions of Bits Per Second (MBPS).   The "Video" tab lists the frames per second (FPS) and bandwidth utilized (MBPS) for each camera.   The total bandwidth being received by this viewing node is listed on the "Total MBPS" line.   Both FPS and MBPS are calculated values. Network congestion or loss of RF connectivity can affect these values.
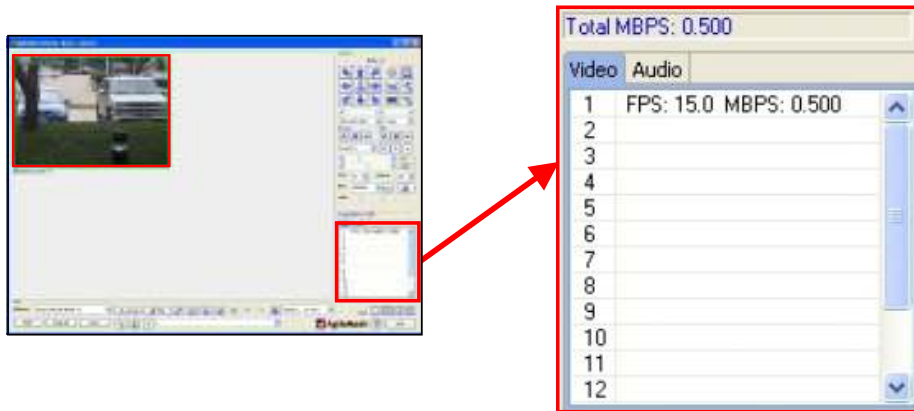
The "Audio" tab is used to display talk groups and will be described in the "Talk Group" section.
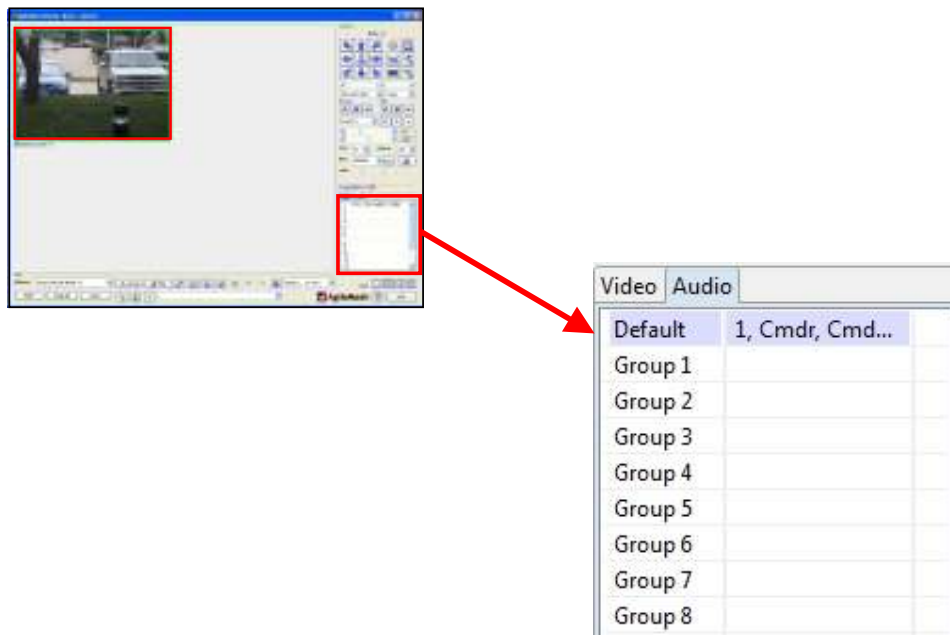
Camera Selection and Viewing
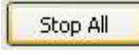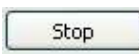
A single camera or a predefined group of cameras can be started with the AgileMesh Viewer. The details on how to display camera video
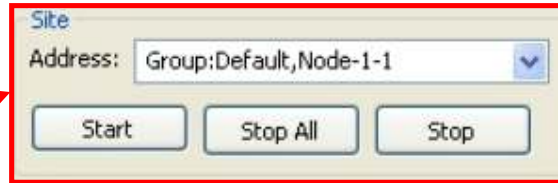
are described below.   Examples of camera selection are found in the "Initial Setup" section of this User Guide. The table below describes the buttons required to select and start one or more cameras.   The AgileMesh Viewer will automatically select the next available location to start a camera or a group of cameras.

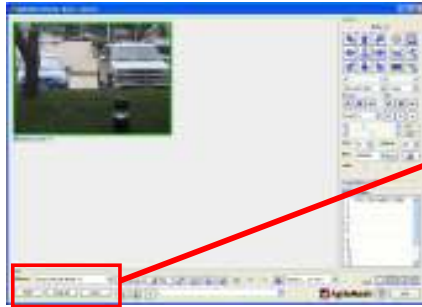|	
Address: Group:Default,Node-1-1	The Group to which it belongs, and the name of the Node to which it is connected defines an individual camera. The dropdown menu displays a list of previously connected cameras.
Start	Start the camera or group of cameras in the "Address:" window.
Stop All	Stop video from ALL cameras.
Stop	Stop the selected camera video.

Clicking on the [Site] icon will bring up the "AgileMesh Viewer Groups" window.   See screen shot on the next page.   Next click on Default (1) in the Site Groups field, or another group that has been defined, to see all the cameras that have been configured.   Click on a Node name in the Site List (2) and the fields will be filled in the Site Edit field (3). A camera's configuration can be added, updated or deleted in the Site Edit field is filled in.
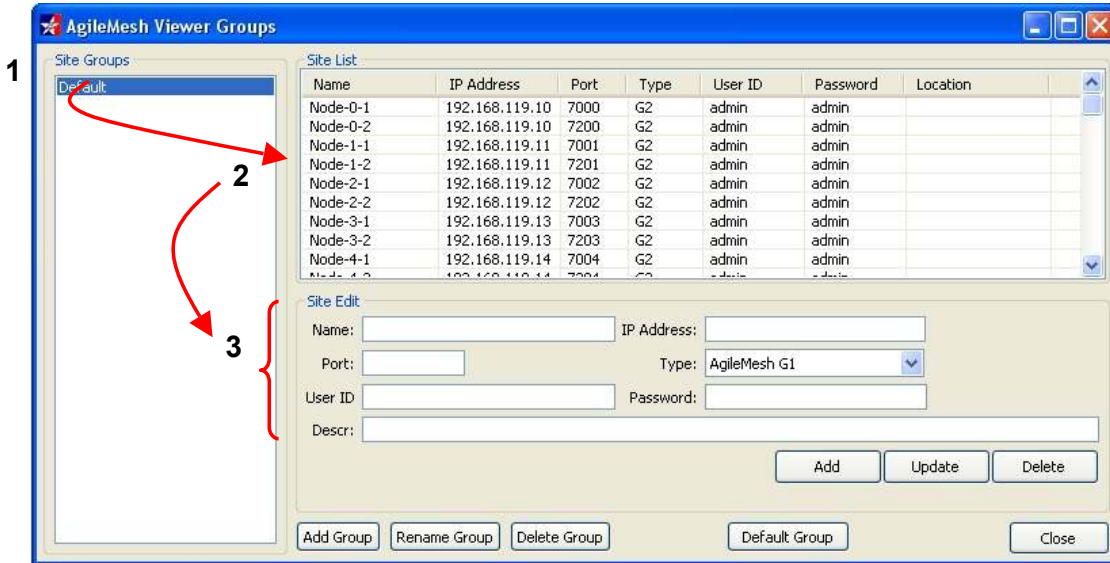
AgileMesh nodes are defined in the Default group when the AgileMesh Viewer is installed. There are two entries for each Node (i.e. Node-0-1 and Node-0-2).   The two entries are for codec 1 and codec 2 in each AgileMesh radio.   The AgileMesh codec encodes the composite video into H.264 or MJPEG.   The factory default setting is H.264.
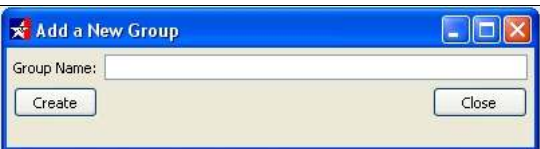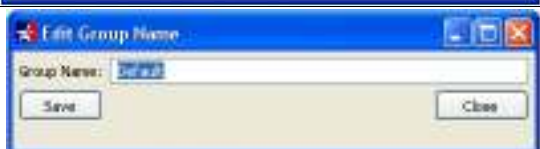
The "Site Groups" field contains all defined groups.   The "Default" group is predefined at installation.   The "Site List" is a list of all cameras set up in the AgileMesh Viewer.   The following fields (in "Site Edit" section) can be edited by clicking on an entry in the "Site List".

Name:	The camera name that appears below the video image on the Viewer. **The node name cannot contain an underscore character '_'.**
IP Address:	The node number sets the IP address of the camera. See **Appendix 1**.
Port:	The node number sets the port numbers for codes 1 & 2 of the camera. See **Appendix 1**.
Type:	This dropdown menu allows a choice of "AgileMesh G1" (first generation) cameras, "AgileMesh G2 TCP" (2nd generation, TCP/IP video) cameras, "AgileMesh G2 UDP" (2nd generation, UDP video) cameras or an "Axis 214" camera. The Panasonic SC385 is also supported.
User ID:	Node User ID, "admin" is the default ID. User ID must be 10 characters or less.
Password:	Node login Password, "admin" is the default Password. The Password must be 10 characters or less.
Descr:	This field allows a description of the camera to be entered. Examples: roof top, front door, etc. This does not appear when viewing video.

The Site Edit buttons on the AgileMesh Viewer Groups window are listed below.

Add	Add the camera that is being edited. Duplicate camera names are not allowed.
Update	Update or change one or more of the camera fields.
Delete	Delete this camera.

The buttons at the bottom of the AgileMesh Viewer Groups window are listed below.

Add Group	Enter the new Group name and click on "Create".	
Rename Group	Edit the Group name and click on "Save".	
Delete Group	Delete the selected group and all of the cameras defined within that group.	
Default Group	Reload the Default Group. Any changes or additions previously make to the Default Group will be lost.	
Close	Close AgileMesh Viewer Groups window.	

Clicking on the [Group] icon launches the "Select Site a List" window. A list of all predefined groups is displayed. Expand a predefined group (Default in this example) to display a list of cameras in

a group (1) from the list. Click on a camera (2) and then click on the "Select" button (3). The camera selected is loaded into the Site Address field of the AgileMesh Viewer (4).
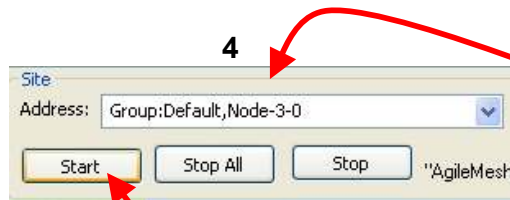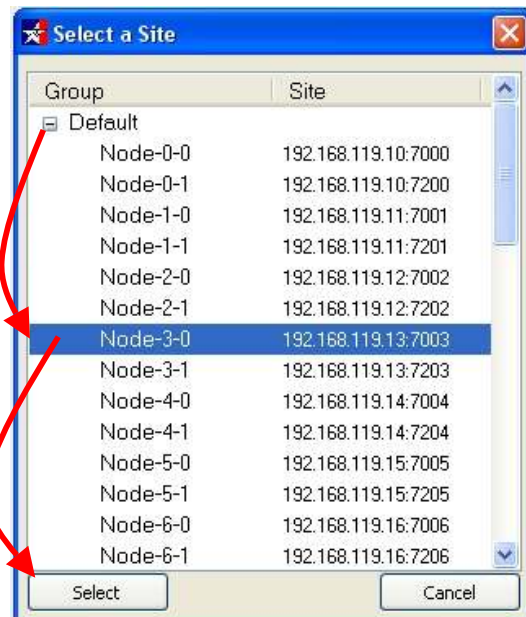
Press the "Start" button to launch the video stream.

Info:

A file named "group.ini" is created for one group or more groups defined in the AgileMesh Viewer. This file by default installation is located in the user's home directory/AgileMesh/Viewer. This file can be copied to the same directory in a new viewer installation and the entire configuration is copied to the new PC.

Info:

The Node number on each AgileMesh node sets the IP address and port numbers for codecs connected to analog camera(s) attached to an AgileMesh node.

AV2010G2
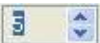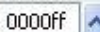
AV1520G2
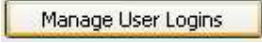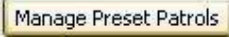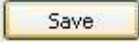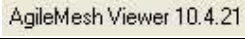
Viewer Configuration Overview

Clicking on the "Configure AgileMesh Viewer"   button launches the Configuration window.

Button or Field	Description
Login Timeout:	Time in seconds to wait for a viewer to login to a camera before a retry
Overlay Text Color: 0000ff ^ Sample Text	Sets the text color displayed
Retry Count: 0	The number of retries to attempt a connection to camera. Zero (0) will try forever.
HightLight: 008000 ^	Sets the color of the rectangle for a camera has been selected.
Cycle Time: 15	Time in seconds to move between cameras if the Auto Cycle button is activated.
Grid Default: 3 x 3 (9 slots)	Sets grid size at Viewer startup.
Video Timeout: 10	Timer in seconds to wait for video before "Reconnecting" is displayed.

Button or Field	Description
☐ Use NotePad To View Log File	Check this box to use NotePad to display the Viewer's log file.
Record Path: C:\ Home_Dir \AgileMesh\Viewer\Record	Sets the record directory. The "Home_Dir" is different for XP and Windows 7 users. (See Appendix 3)
Battery Status: Settings	Click on "Settings" to display the Battery Configuration page. The "Max Yellow Value:" and "Max Red Value:" are in milli-volts. Any battery voltage greater than the "Max Yellow Value:" will be displayed as Green. Values below "Max Red Value:" will be displayed as Red. Values in between the two will be displayed as Yellow.
☐ Auto Start Recording	Check this box to begin recording active videos when they become active.
Startup Group:	Displays camera or group to be started. Use the dropdown menu to select a previously started camera or group to launch on startup.
☐ Enable Group Startup	Check this box to launch the Startup Group when the AgileMesh Viewer is started.
Discovery Subnet: 192.168.119	The IP subnet for the AgileMesh nodes. The default subnet is 192.168.119.
Discovery Delay: 10 secs	Time between Node discovery pings.
☐ Auto Save Snapshots	Check this box to save the image anytime a snap shot is taken. The default directory is: Home_Dir\AgileMesh\Viewer\Snapshots.
☑ Display Date/Time	Check this box to display date and time.
☐ Start scheduler at startup.	Check this box to start the recording scheduler when the AgileMesh Viewer runs.
☐ Enable Audio on select	Check this box to play audio when the video is selected.
☐ Disable Node Discovery	Check this box to stop node discovery.
☐ Record Viewer Audio	Check this box to record viewer audio.
JoyStick Configuration	See **Advanced Configuration – Joystick**

Button or Field	Description
Manage Preset Labels	See **Advanced Configuration - Manage Preset Labels**
Manage User Logins	See **Advanced Configuration - Manage User Logins**
Manage Preset Patrols	See **Advanced Configuration - Manage Preset Patrols**
Clear Start History	Remove the history of previously started cameras from the "Address" field in the lower left corner of the viewer.
View Log File	See the Viewer messages that are sent to the log file during Viewer operation.
Save	Click on the "Save" button to keep any settings made on the Viewer Configuration Menu page.
AgileMesh Viewer 10.4.21	The Viewer software revision numbers
Cancel	Click on the "Cancel" button to discard any settings made on the Viewer Configuration Menu page.

Recording Video and Audio

There are six AgileMesh Viewer buttons that are involved in recording video from one or all cameras.   The three buttons near the PTZ controls operate on a single camera that is selected.

single camera operation

multiple camera operation
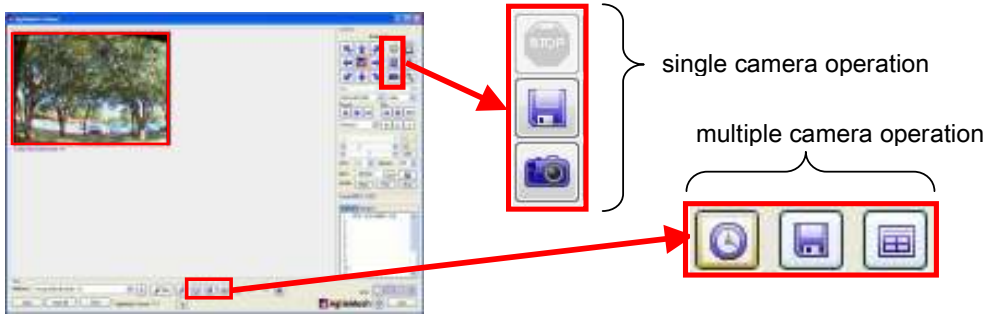
The three buttons at the bottom center of the AgileMesh Viewer operate on one or more cameras and are used to schedule recordings.

Single camera controls

inactive [STOP] [STOP] active		Stop recording a single camera.
[save button]		Start recording.
[camera button]		Take a snapshot. If the Auto Save Snapshot box is check in the Configuration window, a snapshot will be saved for each mouse click. The default directory is: Home_Dir\AgileMesh\Viewer\Snapshots.

Multiple camera controls

[clock button]	The Record Scheduler Manager is used to define times that the program will automatically start and stop recording on one or more cameras.
Start [save] [STOP] Stop	Click this button to start recording all active cameras. The icon will change to "STOP". Click on the "STOP" icon to stop all recording.
Start [grid] [check] Stop	Click this button to start the recording scheduler. The icon will change to [check] Click on this icon to stop the recording scheduler.

Click on the Record Schedule Manager [icon] icon to open the Records Schedule window.

From the pull down menu, select the camera(s) to be recorded. Check the "Is Active" box for an active scheduled recording. Set the "Start Time" and "End Time" for the recording. Check the day or days of the week to record and select "Add" to complete the scheduled recording for the selected camera. The "Delete" button will remove a scheduled recording from the list.

If audio is enabled for a given node and an audio input device is connected ("Mic In" and Line In" are supported by an AgileMesh node), the audio from that node will be recorded. Use the AgileMesh Player to view recoded video and hear recorded audio.

Miscellaneous Controls

The "Convert Video" button is only active (not grayed out) when there are no video sources
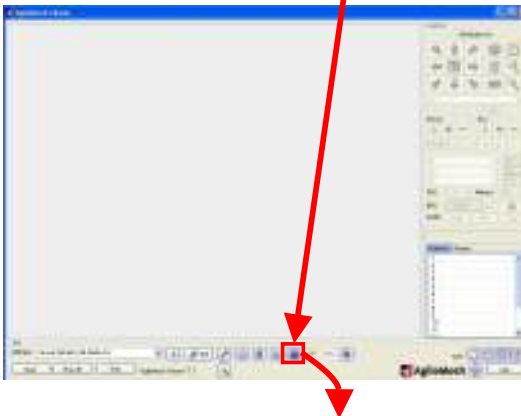
displayed due to the processing power required to convert video formats.   Click on the "Convert Video" button to bring up the "Video Convert" window.   H.264 or JPEG video recoded using the AgileMesh Viewer can be converted to an AVI (Windows), an MP4-H.264 (16 X 9), an MP4-H.264 (4 X 3), an FLV (16 X 9) or an FLV (4:3) file. The FLV files can be played on a website. Use the "Browse" button associated with "Video
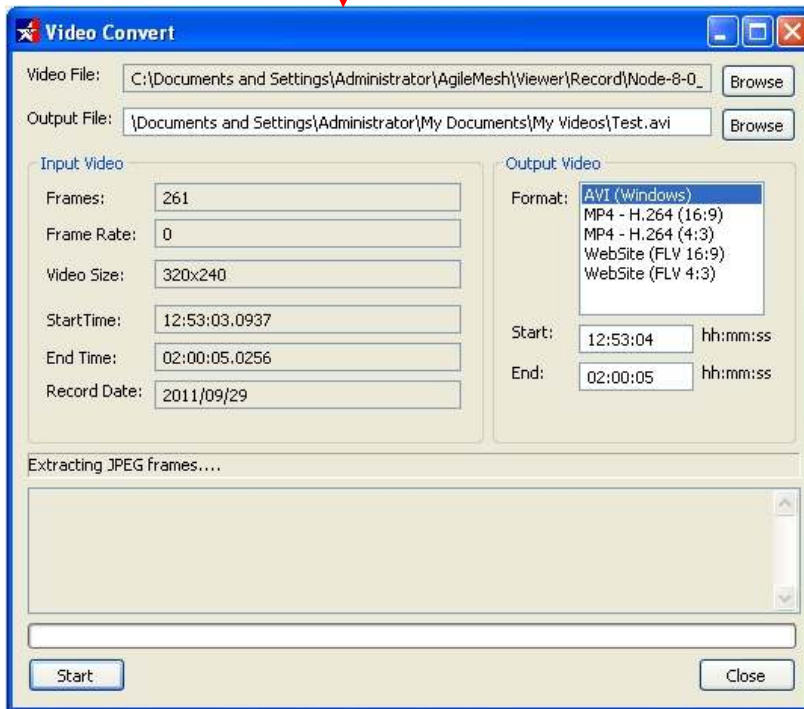
File" to locate any previously recorded files that are to be converted.   Use the "Browse" button associated with "Output File" to swlwct a location to save the converted video file. Next select the desired output (converted) format and the Start/End times. Press "Start" to begin the conversion process.

The next two buttons to the right of the "Convert Video" button are described below.

	This icon is a future software feature.
	The Auto Cycle icon becomes active when there are 2 or more active cameras displayed. Click on the icon to automatically cycle through the active cameras. Each camera image will enlarge to fill the display area as it cycles through. Each camera will be displayed for the number of seconds set by the "Cycle Time" entry in the Configuration screen. Cycle Time: 15

This icon is used to group the currently displayed cameras into a new group. Clicking on

this icon will display the "Add a New Group" window. Enter the name of the new group and click on "Create".

The group name entered will now appear in the Group List and can be utilized to start the exact same group of cameras or any subset of this group of cameras.

Another way to create a new group is to use the Auto Discover function. Click the Auto Discover icon to display the "Auto Discover" window. Auto Discover will find all AgileMesh G2 cameras (and display both codecs) as shown below.
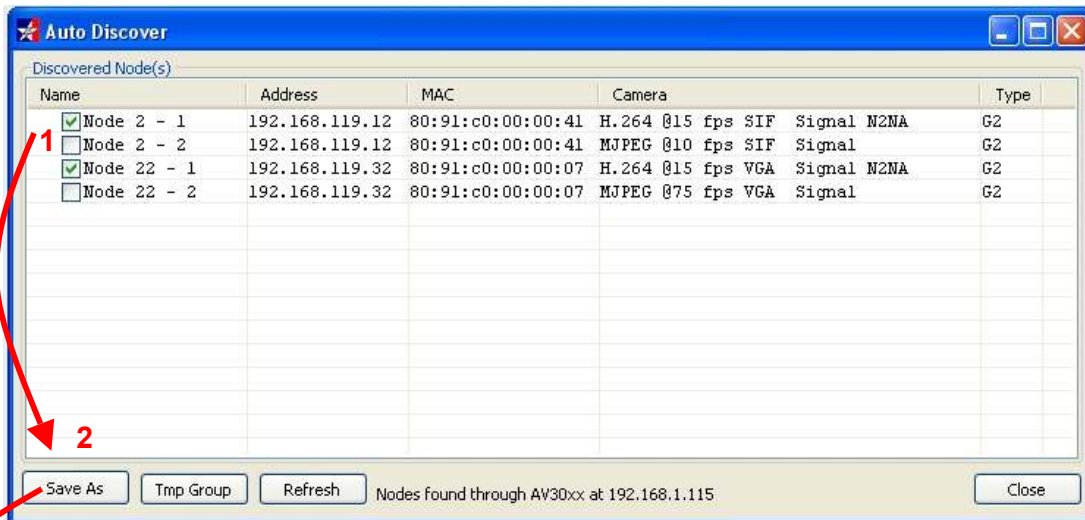
Select the desired cameras for the new group from the list of cameras found (1) and click "Save As" (2). Enter the name for the new group created and click "Create" (3).

The group name entered will now appear in the Group and Site Lists and can be utilized to start the exact same group of cameras or any subset of this group of cameras.

Display Grid Size, Help and Quit

There are 4 grid sizes (number of possible video sources to display): 1, 4, 9 and 16.   If there are 5 video sources displayed, the 1 and 4 selection will be grayed out.   Double-clicking on any individual video display will expand the video to fill the entire display area of the AgileMesh Viewer.

The "lifesaver" button   will bring up a PDF of Viewer manual.

The "Quit" button will close the AgileMesh Viewer.
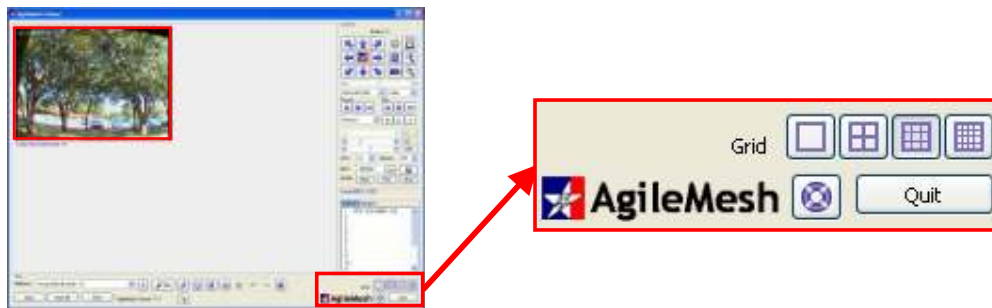
Viewer Configuration – Joystick
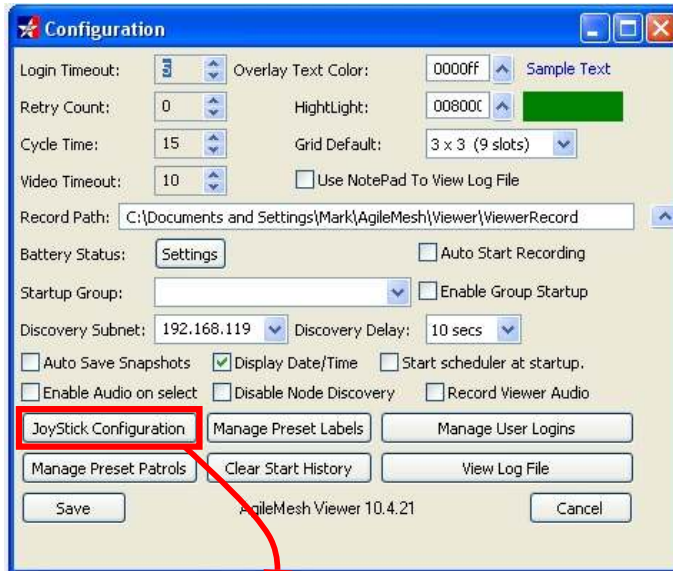
Click on the "Configure AgileMesh Viewer" [icon] icon to launch the Configuration window. Click on the "Joystick Configuration" button to bring up the Joystick Configuration screen.

Info:

The following information applies to the AgileMesh Joystick. Other joysticks may not give a satisfactory user experience.
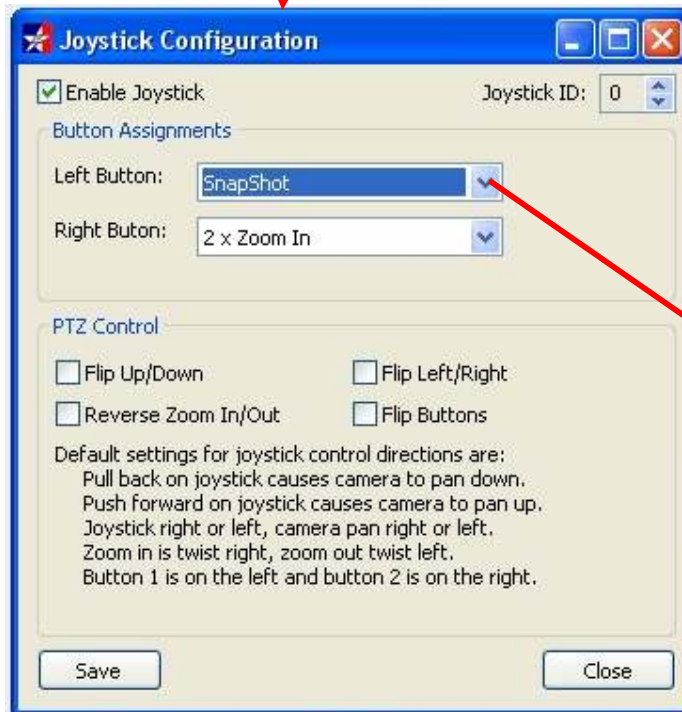
Check the "Enable Joystick" box and set the "Joystick ID" to 0 (default). The Left and Right Button's action can be configured as shown below.
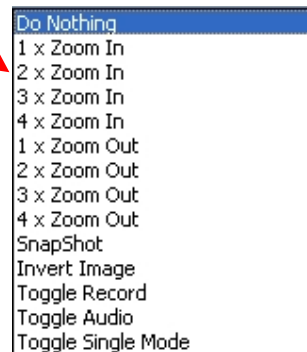
Checking the appropriate box(s) in the PTZ Control field can reverse PAN/TILT/ZOOM (PTZ) controls as well as the left and right buttons.

Click on "Save" to save any changes to the Joystick Configuration page.

Viewer Configuration - Manage Preset Labels
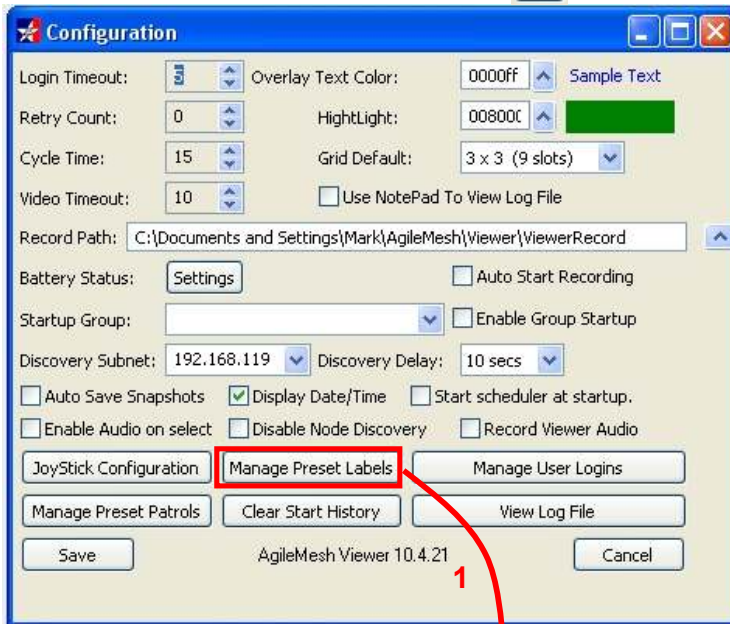
Click on the "Configure AgileMesh Viewer" [icon] icon to launch the Configuration window. Click on the "Manage Preset Labels" button (1) to bring up the Manage Preset Labels screen.

Click on Add (2) to bring up the Camera Select window. Highlight a camera (3) from the list and click on "Select" (4). The camera selected will appear in the "Manage Preset labels" window. The Preset Labels are unique for each camera.
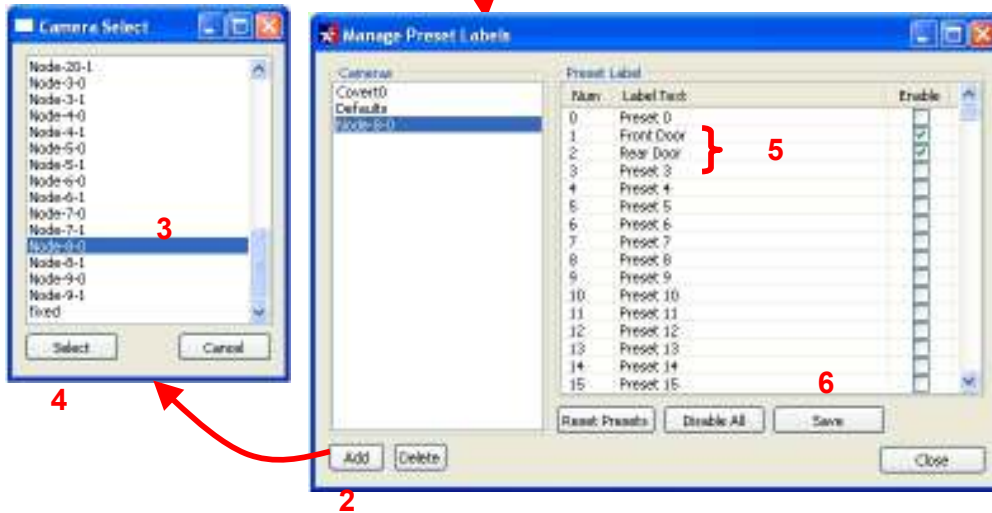
In the "Manage Preset Labels" window, highlight and type in the new text (5) for one or more presets and check the "Enable box". Click "Save" (6) when complete.

The "Reset Presets" button returns all preset Label Text to the default settings. "Disable All" un-checks all Enables boxes.

Viewer Configuration - Manage User Logins
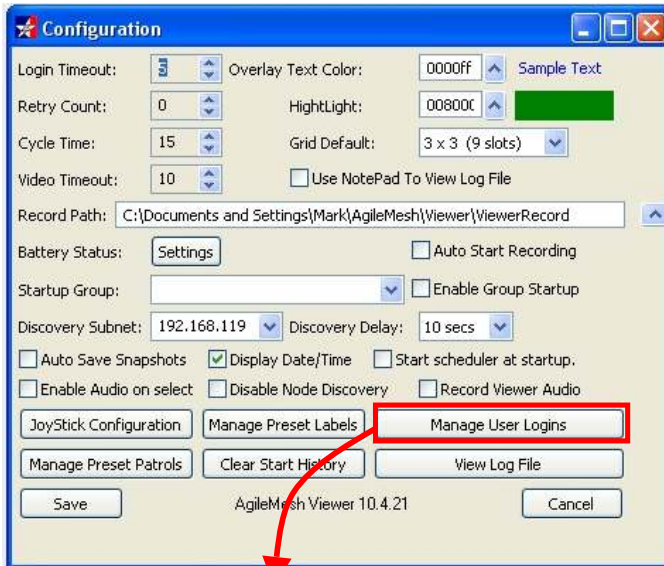
Click on the "Configure AgileMesh Viewer" [icon] icon to launch the Configuration window. Click on the "Manage User Logins" button to bring up the Manage User Accounts window.
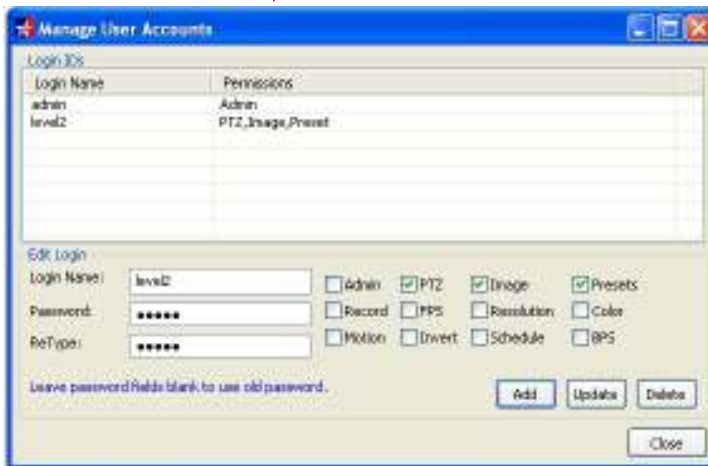
In the Edit Login field, enter a new Login Name and password and then select the privileges for this login account. Click on the "Add" button. The newly created login will appear in the list of Login IDs. Use the "Update" button to accept changes to a previously created login and the "Delete" button to remove a login.

Viewer Configuration - Manage Preset Patrols
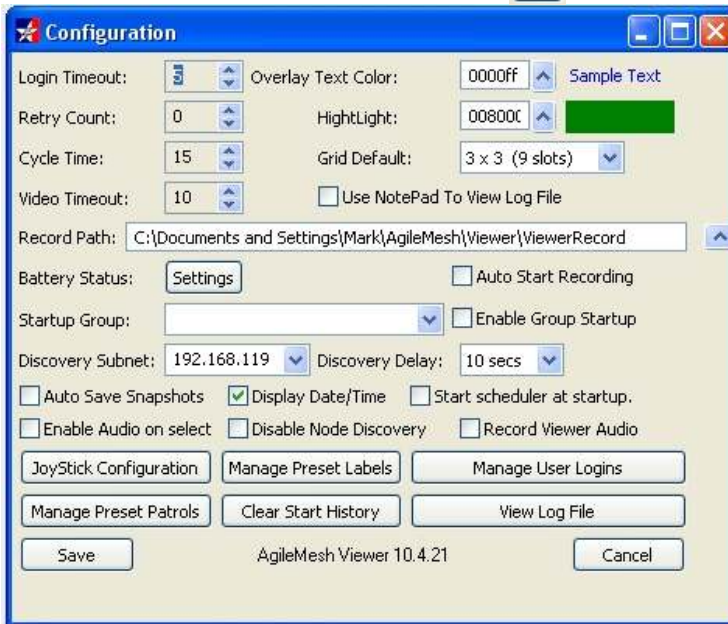
Click on the "Configure AgileMesh Viewer" [icon] icon to launch the Configuration window.   Click on the "Manage Preset Patrols" button to bring up the Manage Preset Patrols window.

Select a camera from the list of Defined Cameras and click on it.   This will highlight the camera name.

Select the presets (previously setup) to be included in the patrol tour by checking the "Enable" box.
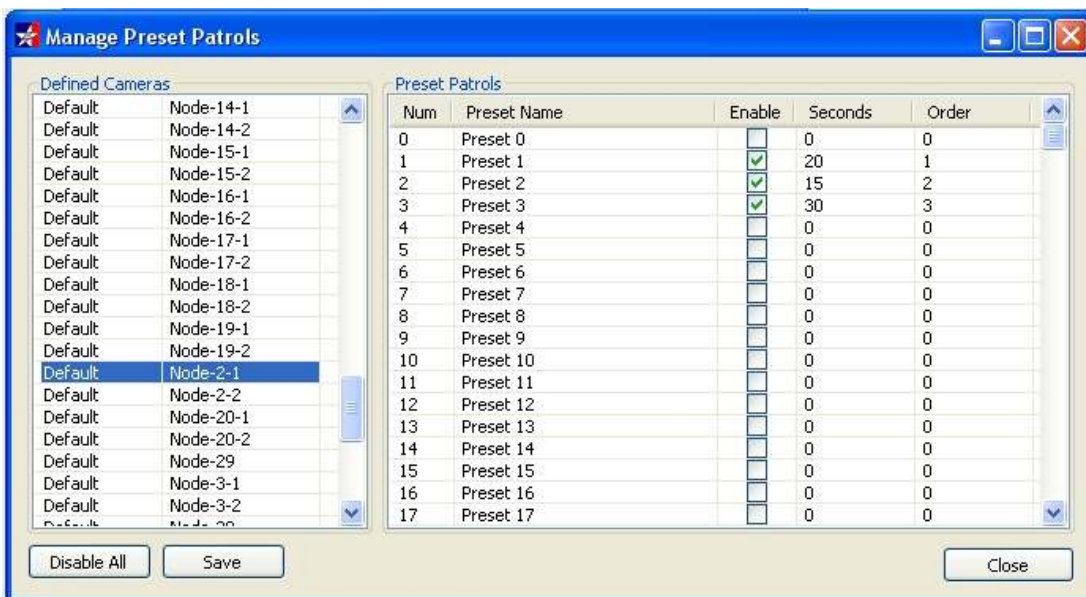
The "Seconds" column controls the amount of time the camera will stay or dwell on a given preset. The "Order" column sets the order of the preset in the patrol tour.

Click on "Save" to save the patrol tour.

Click on the [icon] "Start Patrol Tour" button at the bottom of the viewer to start the patrol tour(s).

Viewer Configuration – Cellular Modem

A cellular modem can be directly connected to an AgileMesh node allowing the node to be remotely located wherever cellular coverage is available. This connectivity can be used to transfer video images from both covert and overt deployments. AgileMesh meshed cameras as well as cellular connected AgileMesh cameras can be viewed on the AgileMesh Viewer when configured as shown below.
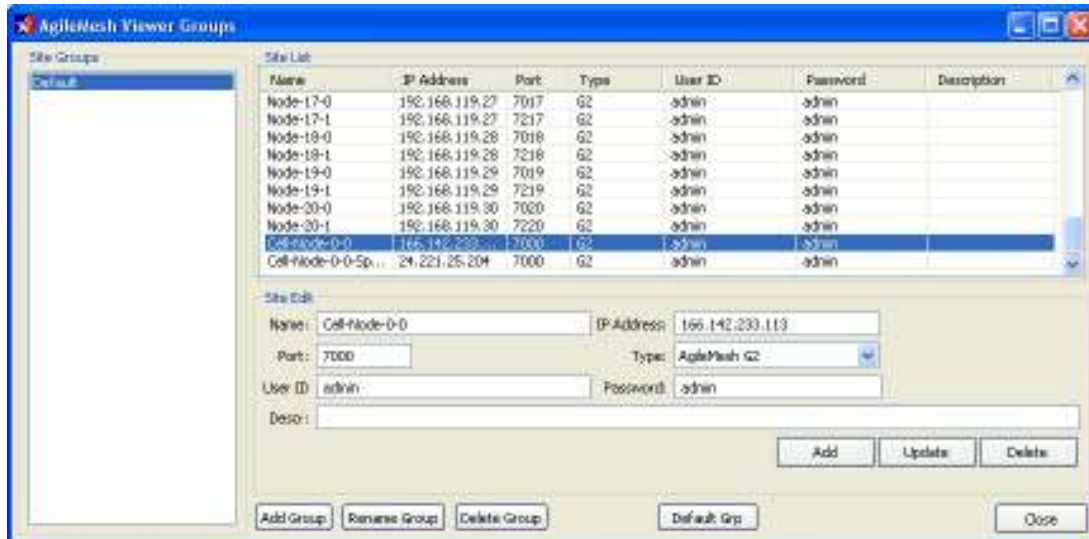
The AgileMesh Viewer that is used on the Internet to view the backhauled images must be set up so that it can connect to the IP address of the cellular modem. The IP address plugged into the Site List is the IP address of the cellular modem. This IP address is assigned to the cellular modem by the provider. **It is strongly advised that this IP address be a static address**. The port number plugged into the Site List correlates with the Node Number of the AgileMesh node connected to the cellular modem. (See Appendix 1 for a list of port numbers and node numbers.) If multiple cameras are viewed through the same cellular backhaul connection, the additional cameras need to be added to the Site List using the same IP address of the cellular modem but with the port number that corresponds to the node number(s) of the additional cameras.

Important!

Contact AgileMesh for a list of supported 3G and 4G cellular modems.

Cellular enabled camera(s) MUST BE configured as Type: "AgileMesh G2 TCP" in Site Edit.

To route multiple nodes through the cellular connection, "Port Forwarding" must be enabled on the node connected to the cellular modem. (See Node Configuration Guide) for details. **Only nodes 0 – 9 are pre-routed through a cellular connected node**.

Sending Audio and Video to a ToS Node

Audio and video can be sent to an AgileMesh node that is Tip-of-the-Spear (ToS) enabled. From the viewer, click on the video that is to be sent to the ToS node. Right-click on this video. A menu will appear with a list of ToS capable nodes. Click on the "Send video to node: X" or "Send audio to node: X" from the menu to send the video and or audio to the selected node. An icon with the node number will appear on the selected video indicating that this video is being transmitted to the ToS node.
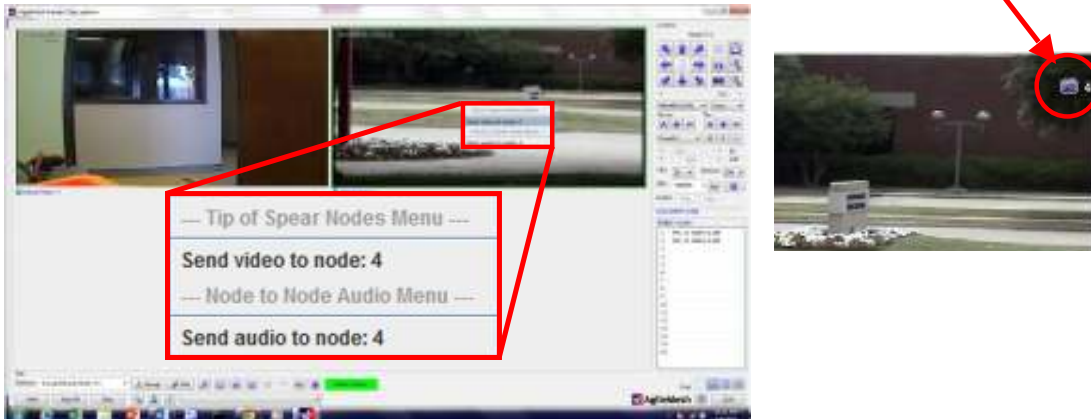
To stop the video to a ToS node, right-click the video an select "Stop video from node: X".
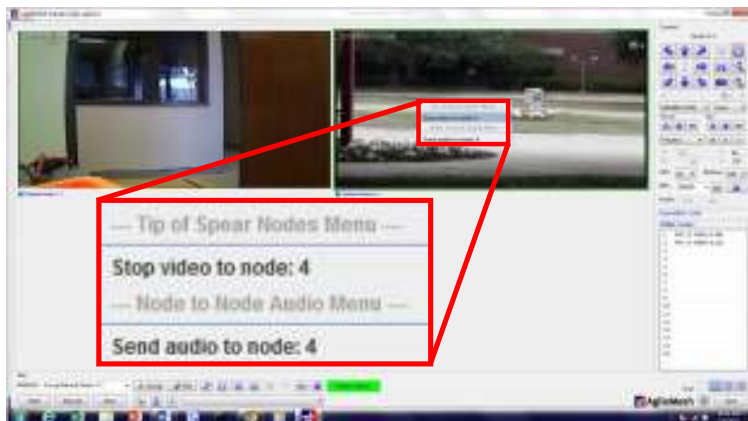
Info:

If there are no ToS enabled/capable nodes in the mesh, the "Start/Stop video from node: X" menu will not appear when a video cell is right-clicked.

Managing Talk Groups

AgileMesh nodes can be enabled for two-way push-to-talk audio. All nodes are shipped in 2-way Audio Group 0, the default group. Up to 8 groups can be defined in the AgileMesh Viewer by clicking on the "Audio Group Control" button at the bottom center area on the AgileMesh Viewer.
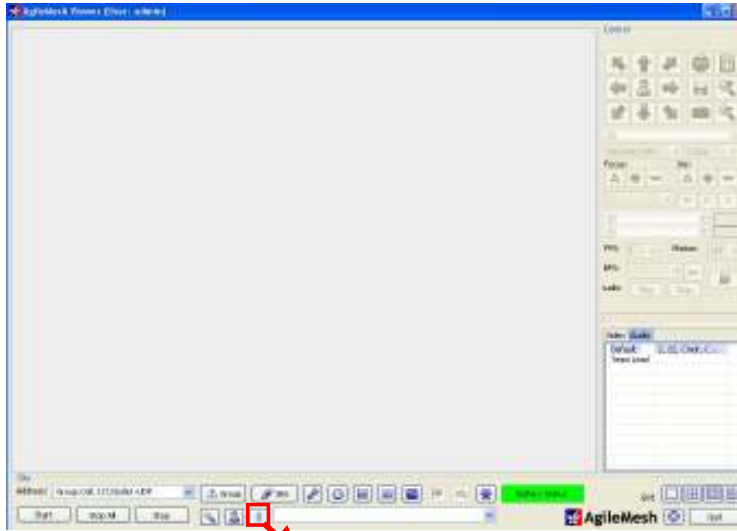
From the Audio Group Control window, enter a talk group name in the "Group Name" field, select the nodes to be in the talk group and then click on the "Add" button. The group name and group members will be displayed in the Audio Groups field.
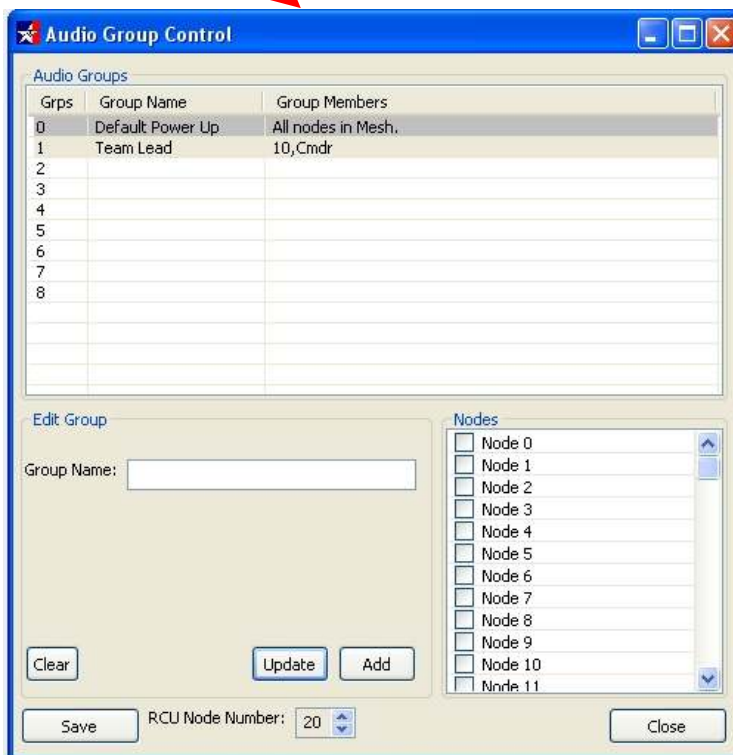
The Commander is assumed to be in a command vehicle with the Remote Control Unit (RCU). Select the RCU Node Number at the bottom of the Audio Group Control window.

Click "Save" to accept the new talk group or groups. Click on the "Close" button when completed.
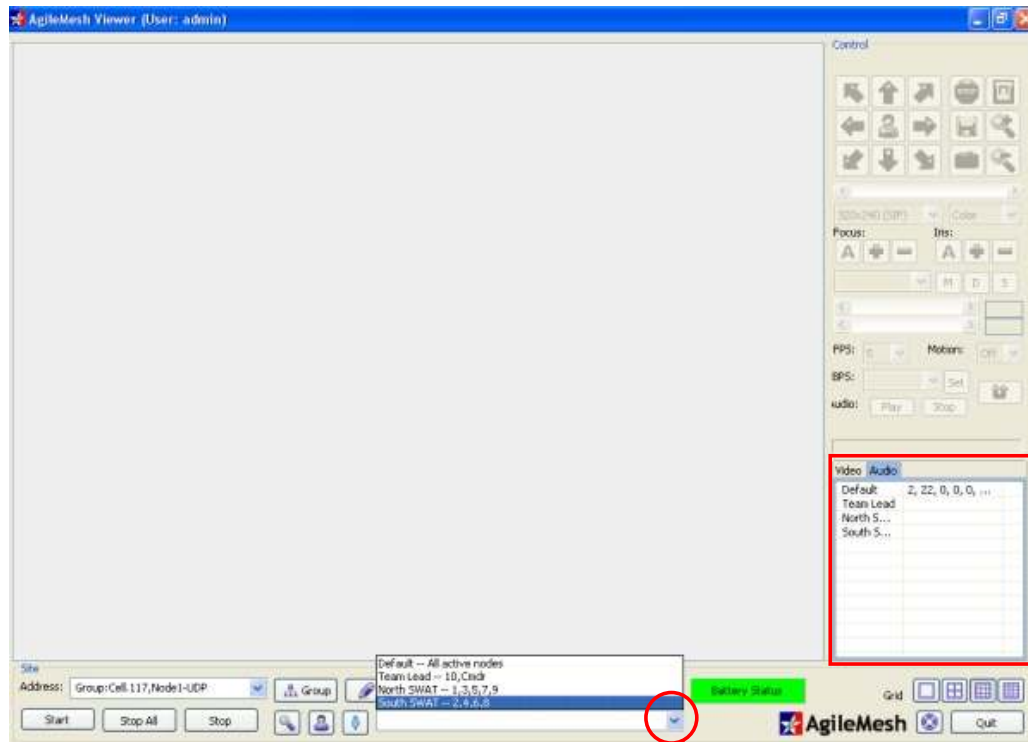
An individual talk group is selected from the drop-down menu at the bottom of the AgileMesh Viewer.

The Audio tab in the lower right corner of the AgileMesh Viewer will display audio groups and members.

> **Info:**
> - A node can only be in one talk group at a time.
> - Two-way audio groups work best when ALL nodes are directly meshed.

Appendix 1 – AgileMesh Default IP Addresses

The table below lists the node number, the default IP address and the port numbers for the video and audio codecs as well as the control channel.

Node #	Node IP	Video 1 Codec	Video 2 Codec	Control Channel	Audio Codec	Internal Video Codec
0	192.168.119.10	7000	7200	7400	7600	7900
1	192.168.119.11	7001	7201	7401	7601	7901
2	192.168.119.12	7002	7202	7402	7602	7902
3	192.168.119.13	7003	7203	7403	7603	7903
4	192.168.119.14	7004	7204	7404	7604	7904
5	192.168.119.15	7005	7205	7405	7605	7905
6	192.168.119.16	7006	7206	7406	7606	7906
7	192.168.119.17	7007	7207	7407	7607	7907
8	192.168.119.18	7008	7208	7408	7608	7908
9	192.168.119.19	7009	7209	7409	7609	7909
10	192.168.119.20	7010	7210	7410	7610	7910
11	192.168.119.21	7011	7211	7411	7611	7911
12	192.168.119.22	7012	7212	7412	7612	7912
13	192.168.119.23	7013	7213	7413	7613	7913
14	192.168.119.24	7014	7214	7414	7614	7914
15	192.168.119.25	7015	7215	7415	7615	7915
16	192.168.119.26	7016	7216	7416	7616	7916
17	192.168.119.27	7017	7217	7417	7617	7917
18	192.168.119.28	7018	7218	7418	7618	7918
19	192.168.119.29	7019	7219	7419	7619	7919
20	192.168.119.30	7020	7220	7420	7620	7920
21	192.168.119.31	7021	7221	7421	7621	7921
22	192.168.119.32	7022	7222	7422	7622	7922
23	192.168.119.33	7023	7223	7423	7623	7923
24	192.168.119.34	7024	7224	7424	7624	7924
25	192.168.119.35	7025	7225	7425	7625	7925
26	192.168.119.36	7026	7226	7426	7626	7926
27	192.168.119.37	7027	7227	7427	7627	7927
28	192.168.119.38	7028	7228	7428	7628	7928
29	192.168.119.39	7029	7229	7429	7629	7929

Node #	Node IP	Video 1 Codec	Video 2 Codec	Control Channel	Audio Codec	Internal Video Codec
30	192.168.119.40	7030	7230	7430	7630	7930
31	192.168.119.41	7031	7231	7431	7631	7931
32	192.168.119.42	7032	7232	7432	7632	7932
33	192.168.119.43	7033	7233	7433	7633	7933
34	192.168.119.44	7034	7234	7434	7634	7934
35	192.168.119.45	7035	7235	7435	7635	7935
36	192.168.119.46	7036	7236	7436	7636	7936
37	192.168.119.47	7037	7237	7437	7637	7937
38	192.168.119.48	7038	7238	7438	7638	7938
39	192.168.119.49	7039	7239	7439	7639	7939
40	192.168.119.50	7040	7240	7440	7640	7940
41	192.168.119.51	7041	7241	7441	7641	7941
42	192.168.119.52	7042	7242	7442	7642	7942
43	192.168.119.53	7043	7243	7443	7643	7943
44	192.168.119.54	7044	7244	7444	7644	7944
45	192.168.119.55	7045	7245	7445	7645	7945
46	192.168.119.56	7046	7246	7446	7646	7946
47	192.168.119.57	7047	7247	7447	7647	7947
48	192.168.119.58	7048	7248	7448	7648	7948
49	192.168.119.59	7049	7249	7449	7649	7949
50	192.168.119.60	7050	7250	7450	7650	7950
51	192.168.119.61	7051	7251	7451	7651	7951
52	192.168.119.62	7052	7252	7452	7652	7952
53	192.168.119.63	7053	7253	7453	7653	7953
54	192.168.119.64	7054	7254	7454	7654	7954
55	192.168.119.65	7055	7255	7455	7655	7955
56	192.168.119.66	7056	7256	7456	7656	7956
57	192.168.119.67	7057	7257	7457	7657	7957
58	192.168.119.68	7058	7258	7458	7658	7958
59	192.168.119.69	7059	7259	7459	7659	7959
60	192.168.119.70	7060	7260	7460	7660	7960
61	192.168.119.71	7061	7261	7461	7661	7961
62	192.168.119.72	7062	7262	7462	7662	7962
63	192.168.119.73	7063	7263	7463	7663	7963

Node #	Node IP	Video 1 Codec	Video 2 Codec	Control Channel	Audio Codec	Internal Video Codec
64	192.168.119.74	7064	7264	7464	7664	7964
65	192.168.119.75	7065	7265	7465	7665	7965
66	192.168.119.76	7066	7266	7466	7666	7966
67	192.168.119.77	7067	7267	7467	7667	7967
68	192.168.119.78	7068	7268	7468	7668	7968
69	192.168.119.79	7069	7269	7469	7669	7969
70	192.168.119.80	7070	7270	7470	7670	7970
71	192.168.119.81	7071	7271	7471	7671	7971
72	192.168.119.82	7072	7272	7472	7672	7972
73	192.168.119.83	7073	7273	7473	7673	7973
74	192.168.119.84	7074	7274	7474	7674	7974
75	192.168.119.85	7075	7275	7475	7675	7975
76	192.168.119.86	7076	7276	7476	7676	7976
77	192.168.119.87	7077	7277	7477	7677	7977
78	192.168.119.88	7078	7278	7478	7678	7978
79	192.168.119.89	7079	7279	7479	7679	7979
80	192.168.119.90	7080	7280	7480	7680	7980
81	192.168.119.91	7081	7281	7481	7681	7981
82	192.168.119.92	7082	7282	7482	7682	7982
83	192.168.119.93	7083	7283	7483	7683	7983
84	192.168.119.94	7084	7284	7484	7684	7984
85	192.168.119.95	7085	7285	7485	7685	7985
86	192.168.119.96	7086	7286	7486	7686	7986
87	192.168.119.97	7087	7287	7487	7687	7987
88	192.168.119.98	7088	7288	7488	7688	7988
89	192.168.119.99	7089	7289	7489	7689	7989
90	192.168.119.100	7090	7290	7490	7690	7990
91	192.168.119.101	7091	7291	7491	7691	7991
92	192.168.119.102	7092	7292	7492	7692	7992
93	192.168.119.103	7093	7293	7493	7693	7993
94	192.168.119.104	7094	7294	7494	7694	7994
95	192.168.119.105	7095	7295	7495	7695	7995
96	192.168.119.106	7096	7296	7496	7696	7996
97	192.168.119.107	7097	7297	7497	7697	7997

Node #	Node IP	Video 1 Codec	Video 2 Codec	Control Channel	Audio Codec	Internal Video Codec
98	192.168.119.108	7098	7298	7498	7698	7998
99	192.168.119.199	7099	7299	7499	7699	7999

Node # 99 is a failsafe node number with a permanent IP address. It allows the user to regain control of the node if the node has been configured with and unknown custom IP address.

To calculate the last octet value of the IP address of a node use the following formula

10 + the Node number = node IP address

To calculate the video codec1 use the following formula: 7000 + the Node number

To calculate the video codec 2 use the following formula: 7200 + the Node number

To calculate the control port use the following formula: 7400 + the Node number

To calculate the audio port use the following formula: 7600 + the Node number

To calculate the internal video codec port: 7900 + the Node number

Node 99 is a failsafe node number with a permanent IP address. It allows the user to regain control of the node if the node has been configured for a custom IP address.

Notes:
1. **Video Codec 1 and Video Codec 2 are used by the AgileMesh Viewer and can be the source for Tip of the Spear (ToS) video to ToS equipped nodes.**
2. **The internal video codec is used for local record and node-to-node video. This codec cannot be displayed on the AgileMesh Viewer**

Appendix 2 – Special Presets for AgileMesh Hardened IR Camera

AgileMesh offers two versions of a Hardened IR camera. There are several predefined presets that can be used to send camera specific commands to these cameras.

26X camera   36X camera

Preset	Function	Comments
240	Turn on the heater for 5 minutes (turns off automatically)	Used to defog lens
241	Force a heater turn off	
245	Force camera to Day (color) mode	
246	Force camera to Night (black & white) mode	
247	Place camera in Automatic mode (Day and Night controlled by photocell)	
248	Turn ON White LEDs	Only on 2nd 36X camera
249	Turn OFF White LEDs	Only on 2nd 36X camera
250	Camera Reset	**Caution will remove all previous settings**
251	Focus the camera lens	
255	Display camera settings	

To sent the command to the camera, select the Preset of interest and click "M" (Move button to the right of the Preset pull-down menu).

Appendix 3 – Troubleshooting and Tips

1. If video from cameras connected into AgileMesh equipment cannot be viewed and or controlled by the AgileMesh Viewer, check the follow list of common issues and resolutions.

Symptom	Possible cause

"Connection timeout Retrying" message displayed	Can you ping the IP address of the Node? See Appendix 1.
	• If not, is the PC running the AgileMesh Viewer connected by an Ethernet cable to a powered up AgileMesh node?
	• Is the PC LAN set to 192.168.224.XX (10 <= XX <= 20) for G1 nodes or set to 192.168.119.XX (2 <= XX <= 9) for G2 nodes
	• Click on the AutoDiscover icon to see if the camera is found.
	• Verify the information in the Site Manager:
	    o Is the proper IP address entered? (Appendix 1)
	    o Is the proper port entered? (Appendix 1)
	    o Is the User ID and Password correct?

"No Signal" displayed	• Battery voltage is too low, recharge the battery or power from AC. • Check the camera cable (does camera move during power-on-self-test?) • Make sure each of the AgileMesh nodes are set to a unique Node number?
Video from an IP camera is not displayed	• Verify the information in the Site Manager is correct. • Verify the Node is set up correctly. See "Setting up an IP Camera" in the AgileMesh Node Configuration Guide.
Pan/Tilt/Zoom Controls do not work on my analog camera connected to an AgileMesh node.	• Does the analog camera have Pan/Tilt/Zoom functionality? • Is the connection between AgileMesh node and the camera installed properly? Is the camera powered? RS-485 PTZ controls (+ and -) are required. • Is the protocol set to match the AgileMesh node. The default setup is Pelco-D, 2400 baud, 8 data bits, no parity and 1 stop bit.

2. Viewer Log File location:

Win XP	C:\Documents and Settings\loginname\AgileMesh\Viewer\viewer.log
Win 7	C:\Users\loginname\AgileMesh\Viewer\viewer.log

The "loginname" is the name you logged into the computer

3. Viewer buttons are missing or overlap each other: (W 7 instructions)

    a.   Right click the desktop and select **Screen resolution**

    b.   Just above the **OK**, **Cancel** and **Apply** button is a hyperlink called <u>Make text and other items larger or smaller</u>.   Click this hyperlink.

    c.   In the next screen make sure the **Smaller - 100% (default)** has been selected.

    d.   And click the **Apply** button.

4. To move the camera setups from one PC to another, copy the file named: groups.ini

This file is in the home directory of the user

Windows XP : c:\Documents and Settings\login_name\AgileMesh\Viewer\groups.ini

Windows 7 : c:\Users\login_name\AgileMesh\Viewer\groups.ini

5. Lost admin password

Delete "vpasswords.ini" in the C:\Users\loginname\AgileMesh\Viewer directory.   When the viewer is restarted, a new factory default password file will be installed.