



## *AgileMesh Node Configuration Guide*



Node Software Version 4.X

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## Table of Contents

Table of Contents .....	2
FCC Statement .....	3
Industry Canada Statement.....	4
Node Configuration Web Page Login .....	5
AV2000G2 and AV3500G2 Video Settings .....	5
AV2010G2 and AV2110G2 Video Settings .....	6
AV1510G2 Video Settings.....	8
AV1520G2 Video Settings.....	10
Network Settings.....	12
Network Settings → Inbound Routing Rules (DNAT).....	13
Network Settings → Ethernet ⇔ Mesh Bridge: Disabled .....	15
Mesh Settings .....	16
General Info .....	18
Admin Settings.....	21
Audio Input.....	22
Audio Listen .....	23
Video Input.....	24
Video Output.....	25
Example of IP camera setup.....	26
Example of a 3G cellular connection .....	27
Appendix 1 – AgileMesh default IP Addresses.....	28
Appendix 2 – AV2010G2 Front and Rear Panel I/O.....	32
Appendix 3 – Default Channel Map .....	34

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## FCC Statement

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

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

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## Industry Canada Statement

The device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

This device has been designed to operate with the antennas having a maximum gain of 7.4dBi. Antennas having a gain greater than 7.4dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

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Le fonctionnement de cet appareil dans la bande 5150-5250 MHz est réservé à une utilisation en intérieur pour réduire le risque d'interférences nuisibles aux systèmes mobiles par satellite utilisant les mêmes canaux.

Cet appareil a été conçu pour fonctionner avec les antennes énumérées ci-dessous, et ayant un gain maximal de 7.4dBi. Les antennes non incluses dans cette liste ou ayant un gain supérieur à 7.4dBi sont strictement interdites pour une utilisation avec cet appareil. L'impédance d'antenne requise est de 50 ohms.

Pour réduire le risque d'interférence avec d'autres utilisateurs, le type d'antenne ainsi que son gain doivent être choisis afin que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Cet appareil est conforme la norme d'Industrie Canada exempts de licence RSS (s). Son fonctionnement est sous réserve des deux conditions suivantes: (1) cet appareil ne doit causer aucune interférence, et (2) cet appareil doit pouvoir accepter toute interférence reçue, y compris une interférence pouvant causer une opération indésirable

## Node Configuration Web Page Login

Appendix 1 lists the IP addresses for AgileMesh nodes that are based on the node number. Browse to the IP address of an AgileMesh node. The following login screen will appear.



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User Name:   
Password:

Login

User Name is “admin”; Password is “admin”. Click the “Login” button and the following screen will appear.

## AV2000G2 and AV3500G2 Video Settings

The AV2000G2 and AV3500G2 Video Settings screen is shown below.



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-----> Video Input is not supported <<-----

The AV2000G2 and the AV3500G2 have no analog video inputs, so the Video Settings screen displays “Video Input is not supported”. Both of these nodes can view video from other video capable nodes.

## AV2010G2 and AV2110G2 Video Settings

The AV2010G2 and AV2110G2 Video Settings screen is shown below. The AV2010G2 has one analog video input. The AV2110G2 has one analog video input and an analog output.



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Video Settings
Network Settings
MESH Settings
General Info
Admin Settings

Audio Input
Audio Listen
Video Input

	Codec 1	Codec 2	Internal Codec
Port Number :	7001	7201	7901
Encoder Type :	<input type="radio"/> MJPEG <input type="radio"/> H.264	<input checked="" type="radio"/> MJPEG <input type="radio"/> H.264	H.264
Resolution :	<input type="radio"/> 640x480 (VGA) <input type="radio"/> 320x240 (SIF) <input type="radio"/> 160x128 (QSIF)	<input type="radio"/> 640x480 (VGA) <input type="radio"/> 320x240 (SIF) <input type="radio"/> 160x128 (QSIF)	<input type="radio"/> 640x480 (VGA) <input type="radio"/> 320x240 (SIF) <input type="radio"/> 160x128 (QSIF)
Frame Rate :	15 fps ▼	15 fps ▼	15 fps ▼
Bit Rate (h.264) :	500000 (bps)	200000 (bps)	200000 (bps)
(Max) :	1000000	1000000	1000000

**External Camera Power :**

 ON     OFF

Apply

The “Video Settings” screen above is for a single analog video input node such as an AV2010G2. Notice that there are three separate video codecs (Codec 1, Codec 2 and an Internal Codec). Two separate video streams can be viewed simultaneously from the one analog video source, as both Codec 1 and Codec 2 may be active at the same time. The Internal Codec is used to generate node recorded video for local recording to a Flash Drive or for node-to-node video. **The AgileMesh Viewer cannot display video from the Internal Codec.** Codecs 1 & 2 can be displayed on the AgileMesh Viewer and can source Tip of the Spear (ToS) video that can be sent to a node capable of

producing composite video output. An AV2010G2 does not have a video output connector, but it can be the source of video that is sent to an AV2110G2 (ToS) node or an AV1520G2 node.

In the “Video Settings” screen above, Codec 1 is set to H.264 encoding at a resolution of 640 X 480 pixels at 15 frames per second. The bit rate is set to 200,000 bits per second. This is the default setting for codec 1. Codec 2 is set to H.264 at 640 X 480 pixels and is also set to 15 frames per second. The bit rate is set to 200,000 bits per second. This is the default setting for codec 2.

Function	Choices/Description
Port Number	The port number is based on the node number (7000 + the node number for Codec 1 and 7200 + the node number for Codec 2). See Appendix 1. The node number is 1 in the screen above.
Encoder Type	MJPEG or H.264 for Codec 1 & 2, H.264 only for the Internal Codec.
Resolution	640 X 480 (VGA), 320 X 240 (SIF), 160 X 128 (QSIF)
Frame Rate	1, 5, 10, 15, 30 frames per second (fps)
Bit Rate (H.264)	The number entered in this field sets the maximum bit rate in bits per second (bps) produced from an H.264 codec. The higher this number the more wireless bandwidth is consumed. The default value is 200,000 bps.
(Max):	The maximum H.264 bit rate is 1 million bits per second for Codecs 1 & 2 and for the Internal Codec.
External Camera Power ON/OFF <b>(AV2010G2 ONLY)</b>	When “ON” is selected (default), battery voltage is supplied to this “CAM Power” port when the node power switch is on. There is a one-amp resettable fuse which limits the current supplied to an attached camera to one amp.

The AV2110G2 does not have an External Camera Power connection as this position is used to provide a BNC connector for analog (composite) video out.

## AV1510G2 Video Settings

The AgileMesh AV1510G2 has one analog video input and an analog output. Browse to the IP address of any of these nodes and login as described previously. The “Video Settings” screen will appear.



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Video Settings | Network Settings | MESH Settings | General Info | Admin Settings

Audio Input | Audio Listen | Video Input

	Codec 1	Codec 2	Internal Codec
<b>Port Number :</b>	7000	7200	7900
<b>Encoder Type :</b>	<input type="radio"/> MJPEG <input checked="" type="radio"/> H.264	<input type="radio"/> MJPEG <input checked="" type="radio"/> H.264	H.264
<b>Resolution :</b>	<input checked="" type="radio"/> 640x480 (VGA) <input type="radio"/> 320x240 (SIF) <input type="radio"/> 160x128 (QSIF)	<input checked="" type="radio"/> 640x480 (VGA) <input type="radio"/> 320x240 (SIF) <input type="radio"/> 160x128 (QSIF)	<input checked="" type="radio"/> 640x480 (VGA) <input type="radio"/> 320x240 (SIF) <input type="radio"/> 160x128 (QSIF)
<b>Frame Rate :</b>	15 fps ▾	15 fps ▾	15 fps ▾
<b>Bit Rate (h.264) :</b>	500000 (bps)	200000 (bps)	200000 (bps)
<b>(Max) :</b>	1000000	1000000	1000000

**External Camera Power :**  
 ON |  OFF

Apply

The video port number is listed below each of the 3 codecs. Two separate video streams can be viewed simultaneously from the video source connected to the “Camera 1” input as both codecs are active at the same time.

The Encoder Type for Codec 1 is set to H.264 and a resolution of 640 X 480 pixels at 15 frames per

second. The bit rate is set to 200,000 bits per second. Codec 2 is set to H.264 at 640 X 480 pixels and is set to 15 frames per second. The bit rate is set to 200,000 bits per second. These are the default settings.

The Internal Codec is set to get video from “Camera 1” input. All video from this codec is H.264. The Internal Codec is used to generate analog video for local recording to a Flash Drive or for node-to-node video. **The AgileMesh Viewer cannot display video from the Internal Codec.**

Function	Choices/Description
Port Number	The port number is based on the node number (7000 + the node number for Codec 1 and 7200 + the node number for Codec 2). See Appendix 1. The node number is 0 in the screen above.
Video Source	Codecs 1 & 2 as well as the Internal Codec can be connected to Camera 1 or Camera 2 inputs.
Encoder Type	MJPEG or H.264 for Codec 1 & 2, H.264 only for the Internal Codec.
Resolution	640 X 480 (VGA), 320 X 240 (SIF), 160 X 128 (QSIF)
Frame Rate	1, 5, 10, 15, 30 frames per second (fps)
Bit Rate (H.264)	The number entered in this field sets the maximum bit rate in bits per second (bps) produced from an H.264 codec. The higher this number the more wireless bandwidth is consumed. The default value is 200,000 bps.
(Max):	The maximum H.264 bit rate is 1 million bits per second for Codecs 1 & 2 and for the Internal Codec.

## AV1520G2 Video Settings

The AV1520G2 has two independent analog video inputs and an analog output. Browse to the IP address of any of these nodes and login as described previously. The “Video Settings” screen will appear.



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<span>Video Settings</span> <span>Network Settings</span> <span>MESH Settings</span> <span>General Info</span> <span>Admin Settings</span>			
<span>Audio Input</span> <span>Audio Listen</span> <span>Video Input</span> <span>Video Output</span>			
	<b>Codec 1</b>	<b>Codec 2</b>	<b>Internal Codec</b>
<b>Port Number :</b>	7000	7200	7900
<b>Video Source :</b>	<input type="radio"/> Camera 1 <input type="radio"/> Camera 2	<input type="radio"/> Camera 1 <input type="radio"/> Camera 2	<input type="radio"/> Camera 1 <input type="radio"/> Camera 2
<b>Encoder Type :</b>	<input type="radio"/> MJPEG <input type="radio"/> H.264	<input type="radio"/> MJPEG <input type="radio"/> H.264	H.264
<b>Resolution :</b>	<input type="radio"/> 640x480 (VGA) <input type="radio"/> 320x240 (SIF) <input type="radio"/> 160x128 (QSIF)	<input type="radio"/> 640x480 (VGA) <input type="radio"/> 320x240 (SIF) <input type="radio"/> 160x128 (QSIF)	<input type="radio"/> 640x480 (VGA) <input type="radio"/> 320x240 (SIF) <input type="radio"/> 160x128 (QSIF)
<b>Frame Rate :</b>	15 fps ▼	15 fps ▼	15 fps ▼
<b>Bit Rate (h.264) :</b>	200000 (bps)	200000 (bps)	200000 (bps)
<b>(Max) :</b>	1000000	1000000	1000000
<span>Apply</span>			

The video port number is listed below each of the 3 codecs. Notice that there are two separate “Video Source” selection options (“Camera 1” and “Camera 2”) for each of the three codecs. This allows the user to connect any of the codecs to either to of analog input connections on an AV1520G2. Two separate video streams can be viewed simultaneously from either of the analog video sources as both codecs are active at the same time.

The Encoder Type for Codec 1 is set to H.264 and a resolution of 640 X 480 pixels at 15 frames per second. The bit rate is set to 200,000 bits per second. Codec 2 is set to H.264 at 640 X 480 pixels and is set to 15 frames per second. The bit rate is set to 200,000 bits per second. These are the default settings.

The Internal Codec is set to get video from Camera 1. All video from this codec is H.264. The Internal Codec is used to generate analog video for local recording to a Flash Drive or for node-to-node video. **The AgileMesh Viewer cannot display video from the Internal Codec.**

Function	Choices/Description
Port Number	The port number is based on the node number (7000 + the node number for Codec 1 and 7200 + the node number for Codec 2). See Appendix 1. The node number is 0 in the screen above.
Video Source	Codecs 1 & 2 as well as the Internal Codec can be connected to Camera 1 or Camera 2 inputs.
Encoder Type	MJPEG or H.264 for Codec 1 & 2, H.264 only for the Internal Codec.
Resolution	640 X 480 (VGA), 320 X 240 (SIF), 160 X 128 (QSIF)
Frame Rate	1, 5, 10, 15, 30 frames per second (fps)
Bit Rate (H.264)	The number entered in this field sets the maximum bit rate in bits per second (bps) produced from an H.264 codec. The higher this number the more wireless bandwidth is consumed. The default value is 200,000 bps.
(Max):	The maximum H.264 bit rate is 1 million bits per second for Codecs 1 & 2 and for the Internal Codec.

## Network Settings

Click on the “Network Settings” tab to display Network Settings. This screen is common to the AV2000G2, AV2010G2, AV2110G2, AV1520G2 and AV3500G2 nodes.



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Video Settings
**Network Settings**
MESH Settings
General Info
Admin Settings

Audio Input
Audio Listen
Video Input

**Ethernet <=> Mesh Bridge** Enabled ▾

**Bridge**

IP Address : 192 . 168 . 119 . 40

IP Netmask : 255 . 255 . 255 . 0

Default GW : 192 . 168 . 119 . 1

**Enable Port Forwarding**

**Inbound Routing Rules (DNAT)**

Input Interface	Input port	Output IP Address	Output port	Enable
Unassigned ▾	0	0 . 0 . 0 . 0	0	<input type="checkbox"/>
Unassigned ▾	0	0 . 0 . 0 . 0	0	<input type="checkbox"/>
Unassigned ▾	0	0 . 0 . 0 . 0	0	<input type="checkbox"/>
Unassigned ▾	0	0 . 0 . 0 . 0	0	<input type="checkbox"/>
Unassigned ▾	0	0 . 0 . 0 . 0	0	<input type="checkbox"/>

Save

The "Ethernet ⇔ Mesh Bridge" is set to "Enabled" **AND SHOULD NOT BE CHANGED**. When The "Ethernet ⇔ Mesh Bridge" is set to "Disabled", the wireless mesh data and video are disconnected and the IP address of the node is moved to a random IP address on the 192.168.2 subnet. **THIS IS FOR FACTORY USE ONLY**. See "Network Settings → Ethernet ⇔ Mesh Bridge: Disabled" section below.

The IP subnet of the node can be changed in the three “IP Address” fields. The default subnet is 192.168.119.

The default gateway for the node can be changed in the four “Default GW” fields. The factory setting for the default gateway is 192.168.119.1.

“Enable Port Forwarding” is checked **only** when a cellular modem is installed in this G2 node.

## Network Settings → Inbound Routing Rules (DNAT)

The “Input Interface” dropdown box has the following options.

Input Interface	Description
Unassigned	No forwarding rules have been defined. The node will not pass traffic in this case.
Bridge	Supports forwarding of all Ethernet or Mesh traffic across the node to the other physical interface, regardless of the IP subnets in use. For example, this could be used to allow an Ethernet-connected IP camera (e.g. 192.168.1.50) to be viewed by a computer in the same subnet (say, 192.168.1.100) even though the mesh IP subnet may be 192.168.119.xxx.
Ethernet	Enables port forwarding from the IP subnet of an Ethernet connected device to a different IP subnet at the Mesh interface using Network Address Translation (NAT) similar to what happens with a home Ethernet router. An example of use for this might be to support viewing of an IP camera with an IP address of 192.168.1.50 from a computer connected to another node of the network with an IP address of 192.168.119.8.
Mesh	Enables port forwarding from the Mesh interface to ports on a different interface. This might be used to forward IP video from mesh nodes out through a single 3G connection, for example.
3G/4G	Enables port forwarding from the Internet through a 3G/4G modem to a mesh or Ethernet connected device. Generally, the 3G/4G modem is assigned a public IP address by the 3G/4G service provider that is in a different subnet than the AgileMesh nodes. AgileMesh can provide a list of supported cellular modems.

**Input Port**

The “Input Port” is a port number assigned by the user and will be used in the AgileMesh viewer to display video from a particular node.

**Output IP Address**

The “Output IP Address” is the address of the IP camera or device connected to the AgileMesh node.

**Output Port**

The “Output Port” is the video port of the IP camera or device connected to the AgileMesh node.

**Enable**

The “Enable” box must be checked for the ports and IP address for this line to be used.

Click “Save” to retain the settings in the routing table described above.

## Network Settings → Ethernet ↔ Mesh Bridge: Disabled

### THIS IS FOR FACTORY USE ONLY!

When the "Enable Ethernet ↔ Mesh Bridge" is "Disabled" the G2 node's IP address changes to the range of 192.168.2.2 and 192.168.2.254. A PC connected to the node via Ethernet must be on the 192.168.2 subnet to access the web pages of the node. In the example below, the node that was on 192.168.119.10 is now on 192.168.2.121 because "Enable Ethernet ↔ Mesh Bridge" is "Disabled".

**Only Class C subnets are allowed for the IP address and Default Gateway.** See below:



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Video Settings
**Network Settings**
MESH Settings
General Info
Admin Settings

Audio Input
Audio Listen
Video Input
Video Output

**Ethernet <=> Mesh Bridge** Disabled ▾

Ethernet				Mesh					
IP Address :	192	. 168	. 2	. 121	IP Address :	192	. 168	. 119	. 10
IP Netmask :	255	. 255	. 255	. 0	IP Netmask :	255	. 255	. 255	. 0
Default GW :	0	. 0	. 0	. 0					

**Enable Port Forwarding**

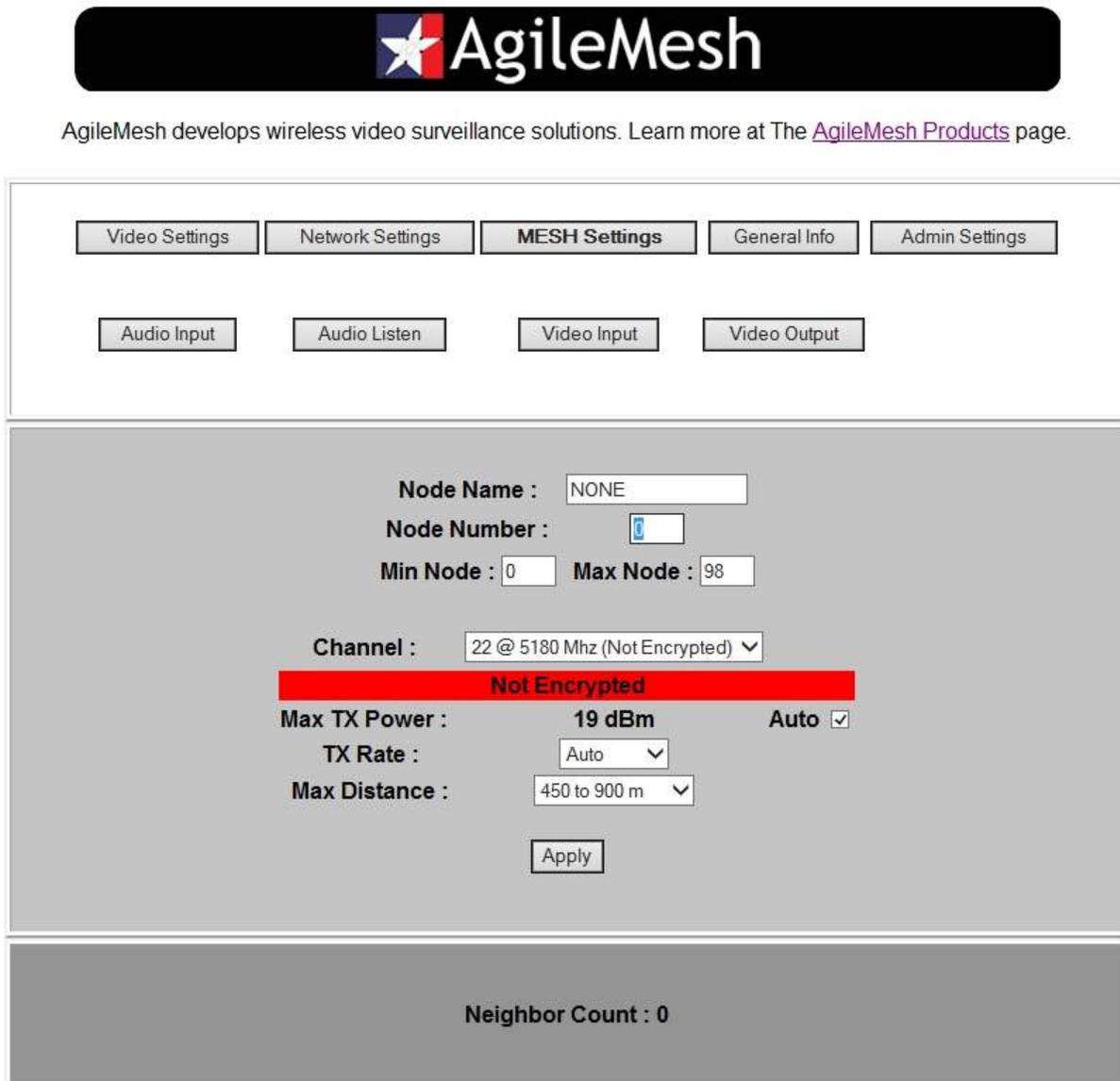
Inbound Routing Rules (DNAT)						
Input Interface	Input port	Output IP Address			Output port	Enable
Unassigned ▾	0	0	. 0	. 0	. 0	<input type="checkbox"/>
Unassigned ▾	0	0	. 0	. 0	. 0	<input type="checkbox"/>
Unassigned ▾	0	0	. 0	. 0	. 0	<input type="checkbox"/>
Unassigned ▾	0	0	. 0	. 0	. 0	<input type="checkbox"/>
Unassigned ▾	0	0	. 0	. 0	. 0	<input type="checkbox"/>

Save

A default gateway ("Default GW") can be added if required.

## Mesh Settings

Click on the “Mesh Setting” tab to display Network Settings. This screen is common to the all AgileMesh nodes.



The screenshot shows the AgileMesh Mesh Settings configuration page. At the top, there is a navigation bar with the AgileMesh logo and the text "AgileMesh". Below the logo, there is a link to "AgileMesh Products" page. The main content area is divided into two sections. The top section contains a row of tabs: "Video Settings", "Network Settings", "MESH Settings" (which is selected), "General Info", and "Admin Settings". Below these tabs are four buttons: "Audio Input", "Audio Listen", "Video Input", and "Video Output". The bottom section is a large gray area containing the following configuration options:

- Node Name : NONE
- Node Number : [input box]
- Min Node : 0 Max Node : 98
- Channel : 22 @ 5180 Mhz (Not Encrypted) [dropdown]
- Not Encrypted** (highlighted in red)
- Max TX Power : 19 dBm Auto
- TX Rate : Auto [dropdown]
- Max Distance : 450 to 900 m [dropdown]
- Apply [button]

At the bottom of the page, there is a gray box containing the text "Neighbor Count : 0".

Each AgileMesh node can be given a non-volatile name. The “Node Name” is not displayed on the viewer and can only be seen on the Mesh Settings page. The “Node Number” input box allows the node number an AgileMesh node to be changed remotely or while directly connected. The range is between “Min Node” (0 in the example above) and “Max Node” (98 in the example above). **Remember, there must never be duplicate Node Numbers in a mesh.**

The Channel drop-down menu lists all the available channels from the Channel Map that is loaded in this node. Each channel in the node's channel map can be encrypted or not. In the example above, channel 22 is not encrypted. An encrypted channel will have a green rectangle in the place of the red rectangle. See below.



The screenshot shows a configuration panel with the following settings:

- Channel : 60 @ 2412 Mhz (Encrypted) ▼
- Encrypted (indicated by a green bar)
- Max TX Power : 17 dBm Auto
- TX Rate : Auto ▼
- Max Distance : 450 to 900 m ▼

The AgileMesh default channel map is listed in Appendix 3 and contains no encrypted channels. A custom channel map can be created with the AgileMesh Channel Map Editor application. **When a new channel map is loaded, the node will reboot and the channel will be changed to 99.**

The “Max Transmit Power: XX dBm Auto” check box allows the node to save battery power by transmitting at a lower power setting when the nodes are close together. The maximum transmit power for a channel is listed. The default setting has the Auto check box checked.

The “TX Rate” drop-down menu forces the modulation and therefore the transmit/receive rate for this node to operate on a single bit-rate between 6 Mbps and 54 Mbps. The default of “Auto” is usually the best setting. As the signal strength drops, so does the bit-rate.

The “Max Distance” drop down menu is used when a directional antenna is attached to a node. The greater the distance selected, the longer a sending node will wait for packet acknowledgment from the receiving node. The default value is “400 to 900 m” (or 400 - 900 meters).

## General Info



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Video Settings
Network Settings
MESH Settings
**General Info**
Admin Settings

Audio Input
Audio Listen
Video Input
Video Output

**Front Panel Display Orientation :**     Normal     Inverted

**MAC Address :** 80:91:c0:00:01:d1

**Temperature :** 40° C (104.0° F)

**Voltage :** 13.919 V

Channel Map Name : 'DEFAULT Channel Map'

2-Way Audio Group : 0.

Main Board	Daughter Card	Software Build Info	FPGA Build Info
Desktop Revision 3 Serial # : A000769	2 Video + Audio + Vid Out Serial # : A000815	<b>Version :</b> 4.5 <b>Date :</b> 2014-12-01 <b>Time :</b> 08:36:04 <b>Rev :</b> 1466	<b>Version :</b> 0x92

**ENABLED Features**

=====

- 2 Video Inputs
- Public Safety Channels
- 900 MHz Channels
- Cellular BackHaul
- One-Way Audio
- Two-Way Audio
- Local Record
- Data Stream Encrypt
- Local Video Output

The General Info screen is common (with the exception of the “Front Panel Orientation” buttons) to all AgileMesh nodes. Click on the “General Info” tab to display information about the node as shown above.

The AV1500G2, AV1510G2 and AV1520G2 have front panel displays that can be inverted when the node is mounted upside down. When a node is mounted to the ceiling of an armored vehicle, the display is inverted. Select the “Front Panel Orientation” button, “Inverted”, when mounting a node upside down. The default setting is “Normal” (non-inverted).

The General Info page contains software and hardware information. The node’s MAC address, internal temperature, and voltage are displayed at the top of the General Info page. The Channel Map Name filename is displayed. The default “Two-Way Audio Group” number is 0.

**Note:** A Channel Map is used to set the frequency, mesh ID and encryption password of AgileMesh nodes. AgileMesh recommends that customized channel maps built by the end user be given a file name and date (i.e. DPD021412) that is meaningful. AgileMesh nodes will not communicate with each other if the units do not have the same frequency, mesh ID and encryption password. Some organizations set up 10 (or more) interoperability channels to interoperate with neighboring departments and the remaining 87 channels for exclusive use by their department.

The middle portion of the General Info page shows the Main Board and Daughter Card serial numbers and their revision levels. Also in this same area the “Software Version” and “FPGA Build Info” is displayed.

AgileMesh nodes have the following list of features that can be enabled either at the time of purchase or at a later date. All features are enabled in the “ENABLED Features” field above.

Feature	Description
Number of video inputs (0, 1 or 2)	The AV2000G2 and AV3500G2 do not have the hardware support to enable this feature. The AV2010G2, AV2110G2 and the AV1510G2 have one video input. The AV1520G2 has 2 video inputs.
Public Safety Channels	Enable operation in the licensed 4.9 GHz band (some countries do not allow this frequency band).

Feature	Description
Cellular Backhaul	Enable the 3G/4G cellular backhaul from the USB connector using AgileMesh approved cellular modems.
One-way Audio	Enable audio from and to an AgileMesh node. (Not available on the AV2000G2 or AV3500G2)
Two-way Audio	Enable Push-to-Talk (PTT) audio from node to node
Local record	Enable local recording using the USB connector.
Data Stream Encryption	Enable SAE (Simultaneous Authentication of Equals) encryption. Each <b>link</b> is uniquely AES 256-bit encrypted,
Local Video Out	If the node has the supporting hardware, composite video from another camera can be sent to the video out port and displayed on a monitor.

## Admin Settings

The “admin Settings” screen is common to all AgileMesh nodes. Click on the “Admin Settings” tab to display the information below.



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Video Settings   Network Settings   MESH Settings   General Info   **Admin Settings**

Audio Input   Audio Listen   Video Input   Video Output

Change **Username** and/or **Password**

-----  
Current Password :

-----

New Username :    New Password :   
Verify Password :

The Username and Password can be changed on this screen. The “Factory Defaults” button will set all video parameters, the channel map and Username/Password to Factor default values.

## Audio Input

An audio equipped (hardware) and Feature Enabled (software licensed) AgileMesh node with audio input can be configured as “Line Input” or “Mic Input” using the Audio Input screen. The default value is “Line Input”.



AgileMesh develops wireless video surveillance solutions. Learn more at The [AgileMesh Products](#) page.

Video Settings   Network Settings   MESH Settings   General Info   Admin Settings

Audio Input   Audio Listen   Video Input   Video Output

---

**Audio Input Settings**

Audio Input :  Line Input  
 Mic Input

Apply

## Audio Listen

An audio equipped (hardware) and Feature Enabled (software licensed) AgileMesh node with audio input can be configured to “listen” to audio from another AgileMesh node using the Audio Listen screen. The default value for the Source Node is “None”.



AgileMesh develops wireless video surveillance solutions. Learn more at The [AgileMesh Products](#) page.

Video Settings   Network Settings   MESH Settings   General Info   Admin Settings

Audio Input   **Audio Listen**   Video Input   Video Output

---

**Audio Listen Source Settings**

Source Node :  ( NONE, 0 - 99 )

Make Permanent

---

The “Source Node” input box allows the audio from one node to be routed to this node. Press the “Start” button to begin listening to the remote node’s audio input. The “Make Permanent” check box will cause the remote node to begin sending audio to this node after it is powered up without having to go to this screen. Press “Stop” button to end listening to audio from the remote node.

Negotiator audio can be sent to the Command Vehicle with this feature.

## Video Input

The Pelco-D ID for any AgileMesh node with video input can be changed using the Video Input screen. The default value for AgileMesh supplied cameras is Pelco-D ID 1.



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Video Settings	Network Settings	MESH Settings	General Info	Admin Settings
Audio Input	Audio Listen	<b>Video Input</b>	Video Output	

Video Input Settings		
	Camera 1 =====	Camera 2 =====
<b>Pelco ID :</b>	<input type="text" value="1"/> ( 1 - 255 )	<input type="text" value="1"/> ( 1 - 255 )
<b>Baud Rate :</b>	2400	2400
<b>Data Bits :</b>	8	8
<b>Parity :</b>	None	None
<b>Stop Bits :</b>	1	1
	<input type="button" value="Apply"/>	

An AV2010G2 node has only one video input and will only display Camera 1.

## Video Output

The Video Output screen is active on an AV1510G2, AV1520G2 and an AV2110G2 if the Local Video Out feature is enabled. The Video Output screen is shown below.



AgileMesh develops wireless video surveillance solutions. Learn more at The [AgileMesh Products](#) page.

Video SettingsNetwork SettingsMESH SettingsGeneral InfoAdmin Settings

Audio InputAudio ListenVideo Input**Video Output**

**Local Video Output Source Settings**

Source Node :  ( NONE, 0 - 99 )

Source Codec :  ▼

The Codec: **MUST BE** configured for **H.264**

Make Permanent

Server Port : NONE

The “Source Node” is the AgileMesh node that will send video to an AgileMesh node equipped and enabled for Local Video Output (ToS) video. “Source Codec” selects which one of the three codecs will send video. Click on the “Start” button to start the video stream and “Stop” to stop the video. The “Make Permanent” check box will cause the remote node to begin sending video to this node after it is powered up without having to go to this screen.

Note: Covert video from a drop car can be sent to the Command Vehicle with this feature.

## Example of IP camera setup

Video Settings

**Network Settings**

MESH Settings

General Info

Admin Settings

Enable Ethernet <=> Mesh Bridge

Ethernet	Mesh
IP Address : 192 . 168 . 2 . 53	IP Address : 192 . 168 . 119 . 11
IP Netmask : 255 . 255 . 255 . 0	IP Netmask : 255 . 255 . 255 . 0

Enable Port Forwarding

Inbound Routing Rules (DNAT)						
Input Interface	Input port	Output IP Address			Output port	Enable
Mesh	9000	192	168	2	100	80 <input checked="" type="checkbox"/>
Unassigned	0	0	0	0	0	<input type="checkbox"/>
Unassigned	0	0	0	0	0	<input type="checkbox"/>
Unassigned	0	0	0	0	0	<input type="checkbox"/>
Unassigned	0	0	0	0	0	<input type="checkbox"/>

## Example of a 3G cellular connection

Video Settings

**Network Settings**

MESH Settings

General Info

Admin Settings

Enable Ethernet <=> Mesh Bridge

Bridge	3G
IP Address : 192 . 168 . 119 . 10	IP Address : 166 .142 .233 .113
IP Netmask : 255 . 255 . 255 . 0	IP Netmask : 255 .255 .255 .255

Enable Port Forwarding

**Inbound Routing Rules (DNAT)**

Input Interface	Input port	Output IP Address				Output port	Enable
Ethernet <input type="button" value="v"/>	8000	192	168	0	45	80	<input type="checkbox"/>
Ethernet <input type="button" value="v"/>	7000	192	168	0	45	7000	<input type="checkbox"/>
Ethernet <input type="button" value="v"/>	7200	192	168	0	45	7200	<input type="checkbox"/>
Unassigned <input type="button" value="v"/>	0	0	0	0	0	0	<input type="checkbox"/>
Unassigned <input type="button" value="v"/>	0	0	0	0	0	0	<input type="checkbox"/>

## 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.

<b>Node #</b>	<b>Node IP</b>	<b>Video 1 Codec</b>	<b>Video 2 Codec</b>	<b>Control Channel</b>	<b>Audio Codec</b>	<b>Internal Video Codec</b>
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

<b>Node #</b>	<b>Node IP</b>	<b>Video 1 Codec</b>	<b>Video 2 Codec</b>	<b>Control Channel</b>	<b>Audio Codec</b>	<b>Internal Video Codec</b>
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
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

<b>Node #</b>	<b>Node IP</b>	<b>Video 1 Codec</b>	<b>Video 2 Codec</b>	<b>Control Channel</b>	<b>Audio Codec</b>	<b>Internal Video Codec</b>
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
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

Node #	Node IP	Video 1 Codec	Video 2 Codec	Control Channel	Audio Codec	Internal Video Codec
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
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 an unknown custom IP address.**

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

$$10 + \text{the Node number} = \text{node IP address}$$

To calculate the video codec1 use the following formula:  $7000 + \text{the Node number}$

To calculate the video codec 2 use the following formula:  $7200 + \text{the Node number}$

To calculate the control port use the following formula:  $7400 + \text{the Node number}$

To calculate the audio port use the following formula:  $7600 + \text{the Node number}$

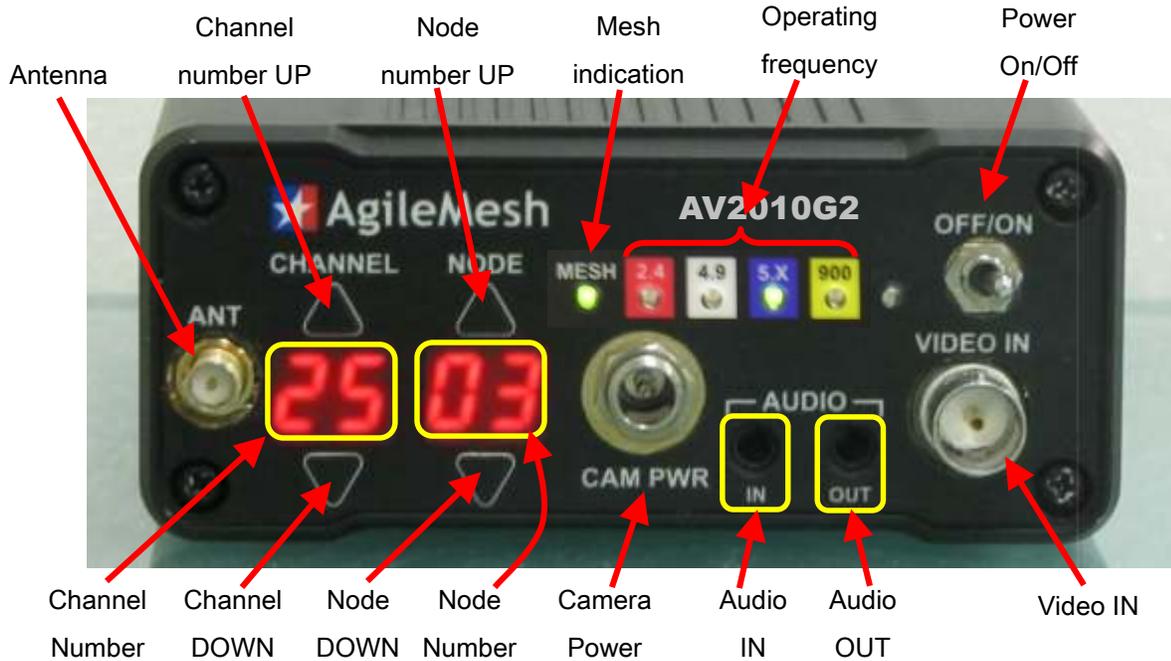
To calculate the internal video codec port:  $7900 + \text{the Node number}$

**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**

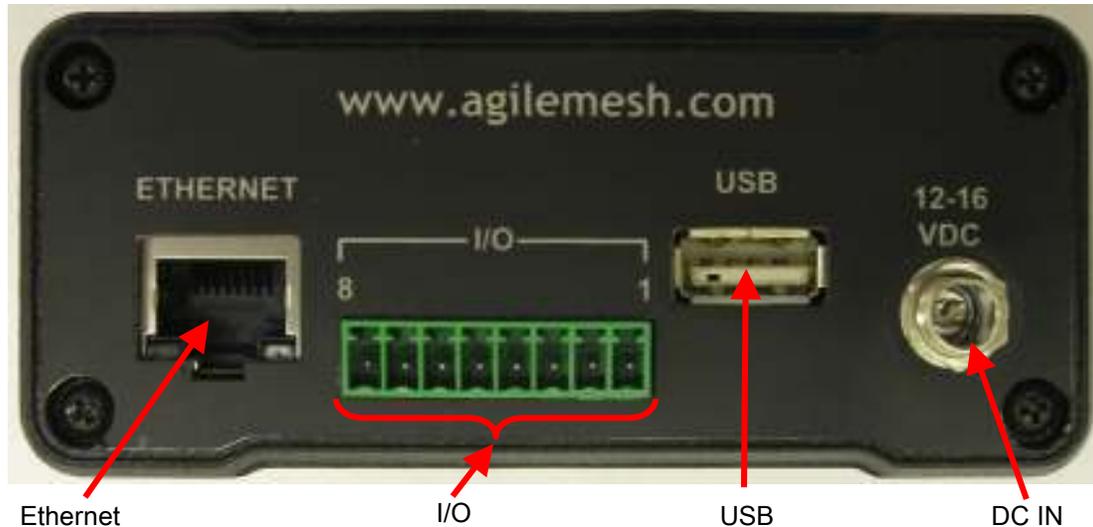
## Appendix 2 – AV2010G2 Front and Rear Panel I/O

The AgileMesh AV2010G2 has one composite (analog) video input. The front panel is shown below.



Connector	Type	Mating connector	Comments
Antenna	RP-SMA female	RP-SMA male	50-ohm
Camera Power	Locking power	Switchcraft S761K	Can be remotely controlled (On/Off)
Audio IN	3.5 mm stereo jack	3.5 mm stereo plug	Line in or Microphone In (default)
Audio OUT	3.5 mm stereo jack	3.5 mm stereo plug	Line out or Headphone out (default)
Video IN	BNC female	BNC male	RS-170 composite (Analog0 video in

The AgileMesh AV2010G2 rear panel is shown below.



Connector	Type	Mating connector	Comments/Function
Ethernet	RJ-45 female	RJ-45 male	10/100 Mbps
I/O pin 1	8-position pluggable	SH08-3.50	RS-485 D+ for PTZ control, transmit
I/O pin 2	8-position pluggable	SH08-3.50	RS-485 D- for PTZ control, transmit
I/O pin 3	8-position pluggable	SH08-3.50	RS-485 D+ (future use)
I/O pin 4	8-position pluggable	SH08-3.50	RS-485 D- (future use)
I/O pin 5	8-position pluggable	SH08-3.50	Relay Common, fused at 2 Amps
I/O pin 6	8-position pluggable	SH08-3.50	Relay Normally Open (closes on node power ON)
I/O pin 7	8-position pluggable	SH08-3.50	Digital 3.3 – 12 VDC input (future use)
I/O pin 8	8-position pluggable	SH08-3.50	Node Ground
USB	USB A-female	USB A-male	USB 2.0
DC IN	Locking power	Switchcraft 761K	9 – 16 VDC for the node (~750 ma without camera) 12 – 16 VDC when powering a camera

## Appendix 3 – Default Channel Map



Default Panel Channel Map																																																																																								
Channel	Internal Mapping	Center Freq (GHz)	Freq. Band	Channel	Internal Mapping	Center Freq (GHz)	Freq. Band	Channel	Internal Mapping	Center Freq (GHz)	Freq. Band	Channel	Internal Mapping	Center Freq (GHz)	Freq. Band																																																																									
00	1	2.4120	2.4GHz OFDM	22	36	5.1800	5.X GHz OFDM	50	16	4.9600	4.9GHz	51	17	4.9800	OFDM																																																																									
01	2	2.4170		02	3	2.4220		03	4	2.4270	04	5	2.4320	05	6	2.4370	06	7	2.4420	07	8	2.4470	08	9	2.4520	09	10	2.4570	10	11	2.4620	23	40	5.2000	24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6	2.4370	2.4 GHz	Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30			
02	3	2.4220		03	4	2.4270		04	5	2.4320	05	6	2.4370	06	7	2.4420	07	8	2.4470	08	9	2.4520	09	10	2.4570	10	11	2.4620	23	40	5.2000	24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz	Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30					
03	4	2.4270		04	5	2.4320		05	6	2.4370	06	7	2.4420	07	8	2.4470	08	9	2.4520	09	10	2.4570	10	11	2.4620	23	40	5.2000	24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30							
04	5	2.4320		05	6	2.4370		06	7	2.4420	07	8	2.4470	08	9	2.4520	09	10	2.4570	10	11	2.4620	23	40	5.2000	24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30										
05	6	2.4370		06	7	2.4420		07	8	2.4470	08	9	2.4520	09	10	2.4570	10	11	2.4620	23	40	5.2000	24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30													
06	7	2.4420		07	8	2.4470		08	9	2.4520	09	10	2.4570	10	11	2.4620	23	40	5.2000	24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																
07	8	2.4470		08	9	2.4520		09	10	2.4570	10	11	2.4620	23	40	5.2000	24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																			
08	9	2.4520		09	10	2.4570		10	11	2.4620	23	40	5.2000	24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																						
09	10	2.4570		10	11	2.4620		23	40	5.2000	24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																									
10	11	2.4620		23	40	5.2000		24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																												
23	40	5.2000	24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6	2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																																		
24	44	5.2200	25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz	Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																																					
25	48	5.2400	30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																																							
30	149	5.7450	31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																																										
31	153	5.7650	32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																																													
32	157	5.7850	33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																																																
33	161	5.8050	34	165	5.8250	96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption	97	6		2.4370	2.4 GHz		Same as default channel 5				98	16	4.9600	4.9GHz	Same as default channel 50				99	149	5.7450	5.X GHz	Same as default channel 30																																																			
34	165	5.8250																																																																																						
96	N/A	N/A	N/A	Radio OFF				} "Failsafe" channels with no encryption																																																																																
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