# Configuring Network Settings of the Ethernet Switch & MuxLab AV over IP Devices

### Overview

The MuxLab AV over IP Devices can be used with or without the help of software. When use in an environment without software the configuration can be manage locally using the Device DIP Switches. When used with the software, all management functions may be performed remotely. Independent of the manner in which the product is controlled, a gigabit Ethernet Switch is required. This manual explains how to correctly setup the Ethernet Switch, how to manage the system manually, and how to use the MuxLab Management Software.

# **Applicable AV over IP Devices**

The following AV over IP Devices are applicable to this document as of this writing, and will be referred to throughout this document as "AV over IP Device(s)".

500752: HDMI over IP Extender with PoE 500753: HDMI / RS232 over IP Extender with PoE 500754: Video Wall over IP Extender with PoE 500755: Audio / RS232 over IP PoE Transceiver 500756: 3G-SDI / RS232 over IP Extender with PoE 500757: HDMI over IP H.264 PoE Extender 500758: HDMI 4K over IP PoE Extender 500759: Video Wall 4K over IP PoE Extender

Note: This document may be updated from time to time to include new AV over IP Devices as they become available.

# **Configuration of the Ethernet Switch**

It is assumed that the Ethernet Switch bandwidth is reserved for only the audio & video transport of the AV over IP Device signals, and will not be shared with other LAN intensive traffic, including daily LAN traffic within the building. This is required in order to maximize the system performance and to be able to expand the system as needed.

When the AV over IP Devices are used in a matrix configuration (multipoint-to-multipoint) it is required that the Ethernet Switch support the following capabilities: Gigabit Ethernet, DHCP Server and IGMP. AN Ethernet Switch with "Jumbo Frame" support is also required when utilizing the 500758 and 500759 models. MuxLab recommends using the Cisco SG300 Series of gigabit Ethernet Switches. The following section explains how to correctly configure the DHCP Server and enable IGMP and Jumbo Frame on the Cisco Ethernet Switch. If you are using a different brand Ethernet Switch please look at the corresponding product user manual on how to perform these steps.

There are two methods offered for configuring the Cisco Ethernet Switch, a Quick Method (via a script provided by MuxLab with default settings) and a Detailed Method (with manual entry allowing for default or custom settings).

### **Quick Method of Configuring the Cisco Ethernet Switch**

#### Establishing communication with the Cisco Ethernet switch

- 1. Connect your computer directly to the Cisco Ethernet Switch using an Ethernet patch cord. Note: The Cisco SG300 Ethernet Switch comes configured from the factory with a Static IP address of 192.168.1.254 and in order to communicate with this unit you must configure your computer to have a Static IP address in the same subnet.
- 2. Set a Static IP address on your computer network interface card, such as 192.168.1.2 along with the following mask 255.255.255.0 Reference your computer operating system manual on how to accomplish this.
- 3. Using a standard browser connect to the Cisco Ethernet Switch. Enter the Cisco Ethernet Switch Static IP address in the address bar and press **Enter**. For example <u>http://192.168.1.254</u> The Default User ID and Password for the unit is "cisco".
- 4. Go to Administration→File Management→Download/Backup Config. Set the "Transfer Method" to "via HTTP/HTTPS", and set the "Save Action" to "Download", type the file name for the script file (which is "SC-000119-B" as of this writing, although the last letter may have changed to version C, or D, etc. depending on the revision). Set the "Destination File Type" to "Startup Configuration File". Click the "Apply" button and wait for the automated configuration process to complete.

Small Business cisco SG300-10P	10-Port Gigabit PoE Managed Switch	cisco Language: English 🗸 Logout About Help
Getting Started    Status and Statistics  Administration  System Settings Console Settings	Download/Backup Configuration/Log Transfer Method:          Image: State of the state o	Via HTTP/HTTPS
Management Interface User Accounts Idle Session Timeout Time Settings System Log File Management	Save Action:   Download  Backup  Source File Name:  Browse.  SC-000119-B	SC-000119-B
Active Image Download/Backup Firmwa Active Image Download/Backup Config Configuration Files Prop Copy/Save Configuration	Destination File Type:   Running configuration file  Startup configuration file  Backup configuration file  Apply Cancel	Startup configuration file
DHCP Auto Configuration Reboot > Diagnostics Discovery - Bonjour > Discovery - LLDP	Click Apply	
Discovery - CDP     Ping     Traceroute     Port Management     Smartport		
<ul> <li>VLAN Management</li> <li>Spanning Tree</li> <li>MAC Address Tables</li> <li>Multicast</li> </ul>		
© 2010-2014 Cisco Systems, Inc. /	NI Rights Reserved.	

5. Go to Administration→File Management→Reboot, and click on the "Reboot" button to reboot the Ethernet switch.

small Business cisco SG300-10P 10-Por	t Gigabit PoE Managed Switch	cisco Language English	Logout About Help
Management Interface     User Accounts     Udle Session Timeout     Time Settings     System Log     File Management     Upgrade/Backup Firmware/Language     Active Image     Download/Backup Configuration/Log     Configuration Files Properties	Reboot To reboot the device, click the Reboot button. Reboot  Immediate Date Jan v 01 v Time 00 v 00 v HHLMM In 00 v Days 00 v Hours 00 v Minutes Restore to Factory Defaults		
Copy/Save Configuration DHCP Auto Configuration Reboot > Diagnostics Discovery - Bonjour > Discovery - LLDP > Discovery - CDP Ping Traceroute > Port Management	Click Reboot Cancel Reboot Click Reboot		
Smartport     VLAN Management     Spanning Tree			
MAC Address Tables     Multicast     IP Configuration     Security     Access Control     Quality of Service     SNMP			
© 2010-2013 Cisco Systems, Inc. All Rights Res	erved.		

6. That completes the configuration of the Ethernet Switch; you can now use it with the MuxLab AV over IP solution.

Note: The script changed the Cisco Ethernet Switch Static IP address to 192.168.168.1. If you need to access the Web interface of the Ethernet Switch via web browser you need to use this address. The User-ID and Password are still "cisco".

### **Detailed Method of Configuring the Cisco Ethernet Switch**

#### Establishing communication with the Cisco Ethernet Switch

- 1. Connect your computer directly to the Cisco Ethernet Switch using an Ethernet patch cord. Note: The Cisco SG300 Ethernet Switch comes configured from the factory with a Static IP address of 192.168.1.254 and in order to communicate with this unit you must configure your computer to have a Static IP address in the same subnet.
- 2. Set a Static IP address on your computer network interface card, such as 192.168.1.2 along with the following mask 255.255.255.0 Reference your computer operating system manual on how to accomplish this.
- 3. Using a standard browser connect to the Cisco Ethernet Switch. Enter the Cisco Ethernet Switch Static IP address in the address bar and press **Enter**. For example <u>http://192.168.1.254</u> The Default User ID and Password for the unit is "cisco".

### **Enabling IGMP Protocol**

The IGMP Protocol is mandatory when more than one AV over IP Transmitter Device is present on the same network. Without IGMP the audio/video may freeze from time to time.

1. Go to Multicast→Properties. Enable the "Bridge Multicast Filtering Status" by "check-marking" the related selection box and clicking on "Apply".

Getting Started  Status and Statistics	Properties		Check-mark this selection	
Administration     Port Management	Bridge Multicast Filtering State	is: 🔽 Enable	box and click 'Apply'.	
<ul> <li>Smartport</li> <li>VLAN Management</li> </ul>	VLAN ID:	1 💌		
<ul> <li>Spanning Tree</li> <li>MAC Address Tables</li> </ul>	Forwarding Method for IPv6:	<ul> <li>MAC Group Add</li> <li>IP Group Addres</li> <li>Source Specific</li> </ul>	35	
Multicast     Properties     MAC Group Address     IP Multicast Group Address     IOM Psnooping     MLD Snooping     MLD Snooping     IGMP/MLD IP Multicast Group     Multicast Router Port     Forward All     Unregistered Multicast	Forwarding Method for IPv4:	Source Specific     MAC Group Add     IP Group Addres     Source Specific	ress 35	
IP Configuration				
Security     Access Control				
Quality of Service				
▶ SNMP				

2. Go to Multicast→IGMP Snooping. Enable the "IGMP Snooping Status" by "check-marking" the related selection box and clicking on "Apply".

cisco SG300-10P 10-Port	Gia	ahit Po	F Man	aged Switch				e: English	Logout	
Getting Started  Status and Statistics  Administration  Fort Management	IGN	MP Snoop	oing		Che	eck-mar			on	
Smartport     VLAN Management		Apply	Cancel							
Spanning Tree	IGA	AP Snooping	Table							
<ul> <li>MAC Address Tables</li> <li>Multicast</li> </ul>		Entry No.	VLAN ID	IGMP Snooping Operational Status	Router IGMP Version	MRouter Ports Auto Learn	Query Robustness	Query Interval (sec)	Query Max Response Interval (sec)	Last Memb Query Count
Properties MAC Group Address IP Multicast Group Address IGMI Strooping IGMP/MLD IP Multicast Group Multicast Router Port Forward All Unregistered Multicast > IP Configuration > Security Access Control > Quality of Service > SINMP		1 Copy Set	1 līngs	Enabled	V3	Enabled	2	125	10	
© 2010-2013 Cisco Systems, Inc. All Rights Rese	land an									<u> </u>

3. In the "IGMP Snooping Table", "tick mark" (enable) the radio button and click on "Edit". In the resulting window "check-mark" the related selection box for "IGMP Snooping Status" and then click on "Apply".

Verify that the "Immediate Leave" selection box under the section "Last Member Query Interval" is "check-marked" (enabled).

Getting Started		
<ul> <li>Status and Statistics</li> </ul>	IGMP Snooping	
Administration		
Port Management	IGMP Snooping Status: 🔽 Enable	
▶ Smartport	Apply Cancel	
VLAN Management	Apply Cancel	
<ul> <li>Spanning Tree</li> </ul>	IGMP Snooping Table	
MAC Address Tables	Entry No. VLAN ID IGMP Snooping Router MRouter Ports Query	Query Query Max Response Last Merr
✓ Multicast		erval (sec) Interval (sec) Query Cou
Properties	1 1 Enabled v3 Enabled 2	
MAC Group Address	Copy Settings Edit	
IP Multicast Group Address	Copy county Cont	
IGMP Snooping MLD Snooping		
IGMP/MLD IP Multicast Group	Tick-mark this radio	
Multicast Router Port	1. ((	
Forward All	button and click 'Edit'	
Unregistered Multicast		
IP Configuration		
Security		
<ul> <li>Access Control</li> </ul>		
<ul> <li>Quality of Service</li> </ul>		
▶ SNMP		
9 2010-2013 Cisco Systems, Inc. All Rights Reso	R .	
9 2010-2013 Cisco Systems, Inc. All Rights Rese VLAN ID:	rved.	
VLAN ID:	Check-mark this selection	Describer 1/248 Reservice Strive
	Check-mark this selection	Operational IGMP Snooping Status:
VLAN ID:	Check-mark this selection box and click 'Apply'.	Operational IGMP Snooping Status:
VLAN ID: IGMP Snooping Status: MRouter Ports Auto Learn:	Check-mark this selection	Operational IGMP Snooping Status: Operational Query Robustness:
VLAN ID: IGMP Snooping Status: MRouter Ports Auto Learn: Query Robustness:	Check-mark this selection box and click 'Apply'.	
VLAN ID: IGMP Snooping Status:	Image: Enable       Check-mark this selection box and click 'Apply'.         Image: Enable       (Range: 1-7, Default 2)	Operational Query Robustness: Operational Query Interval:
VLAN ID: IGMP Snooping Status: MRouter Ports Auto Learn: Query Robustness: Query Interval: Query Max Response Interval:	Image: 1-7, Default 2)         Image: 1-7, Default 2)         Image: 1-7, Default 10)	Operational Query Robustness: Operational Query Interval: Operational Query Max Response Interva
VLAN ID: IGMP Snooping Status: MRouter Ports Auto Learn: Query Robustness: Query Interval: Query Max Response Interval:	Image: Enable       Check-mark this selection box and click 'Apply'.         Image: Enable       (Range: 1-7, Default 2)         Image: Sec (Range: 30 - 18000, Default 125)       Sec (Range: 30 - 18000, Default 125)	Operational Query Robustness: Operational Query Interval: Operational Query Max Response Interva
VLAN ID: IGMP Snooping Status: MRouter Ports Auto Learn: Query Robustness: Query Interval: Query Max Response Interval: Last Member Query Counter:	Image: 1-7, Default 2)         I25       sec (Range: 1-7, Default 2)         I25       sec (Range: 5-20, Default 10)         I0       sec (Range: 5-20, Default 10)	Operational Query Robustness: Operational Query Interval: Operational Query Max Response Interva Operational Last Member Query Counter
VLAN ID: IGMP Snooping Status: MRouter Ports Auto Learn: Query Robustness: Query Interval:	Image: 1-7, Default 2)         I25       sec (Range: 1-7, Default 2)         I25       sec (Range: 30 - 18000, Default 125)         I0       sec (Range: 5 - 20, Default 10)         © User Defined       (Range: 1-7, Default 2 (Query Robustness))         I000       mS (Range: 10 - 25500, Default: 1000)         Penable       Image: 10 - 25500, Default: 1000)	Operational Query Robustness: Operational Query Interval: Operational Query Max Response Interva Operational Last Member Query Counter
VLAN ID: IGMP Snooping Status: MRouter Ports Auto Learn: Query Robustness: Query Interval: Query Max Response Interval: Last Member Query Counter: Last Member Query Interval: Immediate leave:	Image: 1-7, Default: 2)         125       sec (Range: 1-7, Default: 2)         125       sec (Range: 30 - 18000, Default: 125)         10       sec (Range: 5 - 20, Default: 10)         @ Use Default       (Range: 1-7, Default: 2 (Query Robustness)))         1000       mS (Range: 10 - 25500, Default: 1000)         Werify that this selection	Operational Query Robustness: Operational Query Interval: Operational Query Max Response Interva Operational Last Member Query Counter
VLAN ID: IGMP Snooping Status: MRouter Ports Auto Learn: Query Robustness: Query Interval: Query Max Response Interval: Last Member Query Counter: Last Member Query Interval: Immediate leave: IGMP Querier Status:	Check-mark this selection box and click 'Apply'.  Enable  (Range: 1-7, Default 2)  Sec (Range: 30 - 18000, Default 125)  Sec (Range: 5 - 20, Default 10)  User Defined  (Range: 1-7, Default 2 (Query Robustness))  Sec (Range: 100 - 25500, Default 1000)  Enable  Verify that this selection  Enable  Verify that this selection  how in check merilied	Operational Query Robustness: Operational Query Interval: Operational Query Max Response Interva Operational Last Member Query Counter Operational Last Member Query Interval:
VLAN ID: IGMP Snooping Status: MRouter Ports Auto Learn: Query Robustness: Query Interval: Query Max Response Interval: Last Member Query Counter: Last Member Query Interval: Immediate leave:		Operational Query Robustness:
VLAN ID: IGMP Snooping Status: MRouter Ports Auto Learn: Query Robustness: Query Interval: Query Max Response Interval: Last Member Query Counter: Last Member Query Interval: Immediate Ieave: IGMP Querier Status:	Check-mark this selection box and click 'Apply'.  Enable  (Range: 1-7, Default 2)  Sec (Range: 30 - 18000, Default 125)  Sec (Range: 5 - 20, Default 10)  User Defined  (Range: 1-7, Default 2 (Query Robustness))  Sec (Range: 100 - 25500, Default 1000)  Enable  Verify that this selection  Enable  Verify that this selection  how in check merilied	Operational Query Robustness: Operational Query Interval: Operational Query Max Response Interva Operational Last Member Query Counter Operational Last Member Query Interval:

#### Enabling Jumbo Frame (required for MuxLab 500758 and 500759 models)

Jumbo Frame support is required when using the MuxLab 500758 and 500759 models. Without Jumbo Frame supported and enabled, these units will not perform as intended and video output will be negatively affected.

1. Go to Port Management→Port Settings. Enable "Jumbo Frames" by "check-marking" the related selection box and clicking on "Apply".

Oetting Started  Status and Statistics  Administration  Port Management  Port Settings	Jur	t Setting nbo Frames nbo frames	: 🔽 Er	nable	box and clic	this selection k 'Apply'. saving the configuration	on and rebooting	g the swit	ch.			
Error Recovery Settings Loopback Detection Settings		Apply	Cance	9 <b>1</b>								
Link Aggregation	Рог	t Setting Ta	ble									
UDLD     PoE     Green Ethernet		Entry No.	Port	Description	Port Type	Operational Status	Link Status SNMP Traps	Time R	ange State	Port Speed	Duplex Mode	LAG
Smartport	0	1	GE1		1000M-Copper	Down	Enabled	Name	State	opeeu	Mode	
VLAN Management	0	2	GE2		1000M-Copper	Up	Enabled			1000M	Full	
Spanning Tree	õ	3	GE3		1000M-Copper	Down	Enabled			10000	1 dii	
MAC Address Tables	0	4	GE4		1000M-Copper	Up	Enabled			100M	Full	
Multicast	0	5	GE5		1000M-Copper	Up	Enabled			100M	Full	
IP Configuration		6	GE6		1000M-Copper	Up	Enabled			100M	Full	
Security	0	7	GE7		1000M-Copper	Down	Enabled			1001	, an	
Access Control	0	8	GE8		1000M-Copper	Down	Enabled					
Quality of Service	õ	9	GE9		1000M-ComboC	Down	Enabled					
SNMP	0	10	GE10		1000M-ComboC	Down	Enabled					
		Copy Set	tings	Edi	t							

#### **Configuring the DHCP Server**

The Ethernet Switch DHCP Server will automatically configure all the IP addresses of each AV over IP Device, eliminating any conflict between devices.

**Note:** If DHCP Server functionality is supported by your Ethernet Switch skip to step 1 below, otherwise you need to use the MuxLab Management Software to assign Static IP addresses to each AV over IP Device. However, before using the Management software, you need to configure a Static IP address on your computer within the same subnet as on the AV over IP Devices, we recommend using 192.168.168.2

To set the Ethernet Switch Static IP address to the same subnet as the AV over IP Devices, go to Administration→Management Interface→IPv4 Interface. Set the "IP Address Type" to Static, and enter the IP Address, we recommend using 192.168.168.1 and set the Network Mask to 255.255.255.0 After applying these settings you need to change the IP address on your computer network interface card to the same subnet just set above, we recommend 192.168.168.2 Reconnect with the Cisco Ethernet Switch Web Interface using HTTP://192.168.168.1 as was configured above.

Small Business CISCO SG300-10P 10-Port	Gigabit PoE Managed	Switch	cisco Language: English	
Getting Started    Status and Statistics	IPv4 Interface			
Administration     System Settings     Console Settings     Management Interface     IPv6 Global Configuration     IPv6 Interfaces     IPv6 Addresses     IPv6 Addresses     IPv6 Addresses     IPv6 Addresses	Management VLAN: IP Address Type: IP Address: Mask:	1	Need to provide the Address Type (Star Address and Mask	tic), IP
IPv6 Tunnel IPv6 Routes IPv6 Routes User Accounts Ide Gession Timeout • Time Settings • System Log • Site Management Reboot • Diagoostics Discovery - Bonjour • Discovery - LDP • Discovery - CDP Ping Traceroute	Administrative Default Gateway: Operational Default Gateway: Renew IP Address Now: Auto Configuration via DHCP: Apply Cancel	C UserDefined C None Enable Enabled		
	ved.			

2. Go to IP Configuration $\rightarrow$ DHCP Server $\rightarrow$ Network Pools. Click on the "Add..." Button.

Small Business SG300-10P 10-Port	Gigabit PoE Managed Switch
Getting Started       Status and Statistics       Administration       Port Management       Spanning Tree       MAC Address Tables       Multicast       • IPV4 Management and Interfaces       ARP       • DHCP Snooping/Relay       • Decision       • Outling of Sentce       • SNMP<	Network Pools Network Pool Table Multab 25525555 192188.188.10 192168.250 Infinite 8 Add Edit Delete Details. Click the 'Add'
© 2010-2013 Cisco Systems, Inc. All Rights Reser	ved.

3. In the window provided, set the "Pool Name", the "Network Mask" (255.255.255.0), the "Address Pool Start" (192.168.168.10), and the "Address Pool End" (192.168.168.250). An example is shown below. Verify that you allocate enough IP addresses for all Transmitters and Receivers present on the network.

© Pool Name: Subnet IP Address:	Muxlab	(6/32 Characters Used)	)	Need to provide the Pool Name,
9 Mask:	Network Mask 25     Prefix Length 24		nge: 8 - 30)	Network Mask, Address Pool Start and Address Pool End
Address Pool Start	192.168.168.10	7		Start and Address 1 601 End
Address Pool End:	192.168.168.250	-		
Lease Duration:	Infinite	urs 00 💌 Minutes 0	0 💌 (Default; 1 l	Day)
Default Router IP Address (Option 3):		]		
Domain Name Server IP Address (Option 6):	None 💌			
Domain Name (Option 15):	[	(0/32 Characters Used)	)	
NetBIOS WINS Server IP Address (Option 44):				
NetBIOS Node Type (Option 46):	<ul> <li>Hybrid</li> <li>Mixed</li> <li>Peer-to-Peer</li> <li>Broadcast</li> </ul>			
SNTP Server IP Address (Option 4):	None 💌			
File Server IP Address (siaddr):				
File Server Host Name (sname):	[	(0/64 Characters Used)	)	
Configuration File Name (file):	<b></b>	(0/128 Characters Use	d)	

 Go to IP Configuration→IPv4 Management and Interfaces→DHCP Server→Properties. Enable the "DHCP Server Status" by "check-marking" the related selection box and clicking on "Apply".

Small Business CISCO SG300-10P 10-Port	Gigabit PoE Managed Switch	
Cisco SG300-10P 10-Port  Cetting Stated  Status and Statistics  Administration  Port Management  Sanarport  VLAN Management  Address Tables  Match Address Tables  DHCP SnoopingRelay  DHCP Server  Propertic  Network Pools Excluded Addresses Static Hosts Address Binding  Domain Name System  Address Binding  Static Hosts Address Binding  Address Binding  Static Hosts Address Binding  Address Binding  Static Hosts Address Binding  Static Hosts Address Binding  Address Binding  Static Hosts Address A	Gigabit PoE Managed Switch  Properties  DHCP Server Status:  Cancel  Check this selection box and click 'Apply'.	
© 2010-2013 Cisco Systems, Inc. All Rights Rese	ved.	

5. Go to Administration→File Management→Copy/Save Configuration. "Tick-mark" (enable) "Running Configuration" and "Startup Configuration" as shown below and save all changes made thus far by clicking "Apply".

Getting Started	0	
Status and Statistics	Copy/Save Config	guration
<ul> <li>Administration</li> </ul>		switch is currently using are in the running configuration file which is volatile and is not retained between reboots.
System Settings Console Settings	To retain the configuration all your changes.	between reboots, make sure you copy the running configuration file to the startup configuration file after you have complete
Management Interface User Accounts Idle Session Timeout     Time Settings     System Log		Running configuration     Startup configuration     Gatavup configuration     Mirror configuration
<ul> <li>File Management</li> <li>Upgrade/Backup Firmware/Language</li> <li>Active Image</li> </ul>	Destination File Name:	CRuming configuration     Statup configuration     Backup configuration
Download/Backup Configuration/Log Configuration Files Properties Copy/Save Configuration DHCP Auto Configuration	Sensitive Data:	Exclude     Encryled     Force Plaintet Available sensitive data options are determined by the current user's SSD rules
Reboot	Save Icon Blinking:	Enabled
<ul> <li>Diagnostics</li> </ul>		
Discovery - Bonjour	Apply Cance	Disable Save Icon Blinking
Discovery - LLDP		
Discovery - CDP		
Ping		
Traceroute		
Port Management		
Smartport		
VLAN Management		
Spanning Tree		
MAC Address Tables		
<ul> <li>Multicast</li> </ul>		
P Configuration		
Security		
Access Control		

6. Go to Administration→File Management→Reboot, and click on the "Reboot" button to reboot the Ethernet switch.



7. If needed you can configure your computer network interface card to obtain an IP address automatically and you can reconnect with the Cisco Ethernet Switch via a browser and using the IP address 192.168.168.1

### Using the AV over IP Device with DIP Switches (Manual Method)

Before installing the AV over IP Device in the intended operating location it is recommended that you first configure the Dip Switch address of each Transmitter and Receiver unit.

- 1. Configure each AV over IP Transmitter Device with a unique DIP Switch address setting. There are 16 unique possibilities and thus you are allowed up to 16 Transmitters on a given local network (subnet). Note that it is very important that each Transmitter have a unique DIP Switch address.
- 2. Configure the DIP Switches of each Receiver to match a corresponding Transmitter address (in order that they communicate with each other). More than one Receiver can have the same DIP Switch setting of a given Transmitter (for point-to-multipoint configurations).
- 3. Follow the above procedure to install the remaining AV over IP Devices, and reference the AV over IP Device Installation Guide for additional setup information.

#### Using the product with the MuxLab Management Software

- 1. Reference the AV over IP Device Installation Guide to correctly setup and install all Devices.
- 2. Install the software on a computer that is connected on the same subnet as the AV over IP Devices.

Note: The computer network interface card should be configured to use DHCP if a DHCP Server is present, otherwise configure the computer network interface card to use the same subnet as the AV over IP Devices, such as 192.168.168.2

3. Run the MuxLab Management Software. Click on "Yes" to perform a full network scan.

		Help
🥥 : Video Sign	al Detected 🛛 📓 : Monitor Power 'C	DN' Detected
DISPLAY	Boy you want to perform a Kill network scare?       (V)       (Vrice, the latence configuration will be loaded)       (Veria)       (Veria) </th <th>SOURCE</th>	SOURCE
	Apply REFRESH	

4. The first time the software is executed you will receive a warning that all the devices have DIP Switches enabled. Click on "Yes" and then on "Proceed", to allow the software to override the DIP Switch settings.

gnostics					
Diagnostic Report					
WARNING #	#1: The following	g device(s) hav	e DIP SWITCH enabled		
	MAC address	IP address	Device name		
	00-0B-78-00-70-1A	192.168.168.16	RX1		
	00-0B-78-00-70-2A	192.168.168.13	RX1		
	00-0B-78-00-70-23	192.168.168.15	RX1		
	00-0B-78-00-70-9F	192.168.168.11	TX1		
	00-0B-78-00-70-58	192.168.168.14	TX1		
	00-0B-78-00-70-D9	192.168.168.12	TX1		
ACTION:	Let the software automatically disable Dip Switch for the device(s) listed above				
	© Yes (recommended) C No				
		PRO	CEED		

5. Select the "Matrix Connection" tab to perform the desired connections between AV over IP Devices (Transmitters and Receivers).

Note: For further information on how to operate the MuxLab Management Software, please download the software from the MuxLab website, and reference the MuxLab Management Software Manual.

# Troubleshooting

The following table describes some of the symptoms, probable causes and possible solutions in regard to the installation of the AV over IP Devices:

Symptom	Probable Cause	Possible Solutions
Freezing Audio or	IGMP not enable or not	• Check the Ethernet Switch configuration
Video	working properly.	and enable the IGMP protocol.
DIP Switches not	Unit DIP Switches have	• Use the MuxLab Management Software to
working	been disable via software.	perform the connection or to re-enable the DIP Switches.
No Audio or Video	IP Address Conflict.	• Check the Ethernet Switch configuration
		and enable the DHCP Server.
Software cannot detect	Computer not on the same	• Check that the computer is connected to
the AV over IP Device	network or wrong IP	the same Ethernet Switch as the AV over
	address.	IP Device.
		• Verify that the computer network
		interface card is set to obtain an IP
		address automatically.
Software updates are	Too much traffic on the	• Turn off all the sources during software
very slow	network.	update.

If you still cannot diagnose the problem, please call MuxLab Customer Technical Support at 877-689-5228 (toll-free in North America) or (+1) 514-905-0588 (International).



8495 Dalton Road, Mount Royal, Quebec, Canada. H4T 1V5 Tel: (514) 905-0588 Fax: (514) 905-0589 Toll Free (North America): (877) 689-5228
E-mail: <u>videoease@muxlab.com</u> URL: <u>www.muxlab.com</u>