

HDMI over IP Extender Kit with PoE 500752 Operating Manual

Overview

The HDMI over IP Extender Kit with PoE (500752) can be used with or without the help of software. When use in an environment without the software the configuration can be manage using the DIP Switches of the device. When used with the software, all the management will be done with it. Independent of the way the product will be control a gigabit Ethernet switch is required. This manual will explain you how to setup correctly the Ethernet switch, how to manage the system manually and how to use the MuxLab software.

Applications

Applications include commercial and residential AV systems, classroom projector systems, digital signage, boardroom systems, collaborative PC systems, and medical information systems.

Configuration of the Ethernet switch

We take the assumption that the Ethernet switch will be used only for the video/audio transport of the 500752 and that no connection will be shared with the Ethernet infrastructure of the building.

When the 500752 are used in a matrix configuration it is mandatory to have an Ethernet switch with the following capability: Gigabit Ethernet, DHCP Server and IGMP. We recommend using the Cisco SG300 Series. The following section will explain you how to correctly configure the DHCP Server and enable IGMP. If you are using a different manufacturer for the Ethernet switch please look at the user manual on how to perform these steps.

Establishing communication with the Cisco Ethernet switch

- 1. Connect your computer directly to the Cisco Switch using an Ethernet patch cord.
- 2. Set an Static IP for the computer network interface, like 192.168.1.2 with a mask 255.255.255.0
- Using a browser connect to the Cisco switch. Enter the switch IP address in the address bar and press Enter. For example <u>http://192.168.1.254</u>. The Default User ID and Password are "cisco".

Enabling IGMP Protocol

The IGMP Protocol is mandatory when more than one 500752 Encoder is present on the same network. Without IGMP the video will freeze from time to time.

1. Select Multicast->Properties. Enable the Bridge Multicast Filtering Status by checking the check box.

Small Business cisco SG300-10P 10-Port	Gigabit PoE Managed Switch	cisco Language: English	Logout About Het
Getting Started Status and Statistics	Properties	Check this check box	
Administration Port Management	Bridge Multicast Filtering Status: 🔽 Enable	and click 'Apply'.	
Smartport VLAN Management Snanning Tree	VLAN ID: 1		
MAC Address Tables Multicast	C IP Group Addres C Source Specific	iess IP Group Address	
Proventies MAC Group Address IP Multicast Group Address IGMP Snooping MLD Snooping IGMP/MLD IP Multicast Group Multicast Rovier Pont Forward All Unregistered Multicast	Forwarding Method for IPv4: C MAC Group Addr C IP Group Addr C Source Specific Apply Cancel	ress IS IP Group Address	
IP Configuration			
Access Control			
Quality of Service			
▶ SNMP			

2. Select Multicast->IGMP Snooping. For the IGMP Snooping Status, check the selection box to enable it.

Small Business cisco SG300-10P 10-Port	Gig	abit Po	E Mar	naged Switch			cisco Langua	ge: English	Logout	About Help
Getting Started Status and Statistics Administration	IGMP Snooping		Che	Check this check box						
Port Management Smartport VLAN Management		Apply	Cancel		and		Apply	•		
Spanning Tree	IGI	MP Snooping	Table							
 MAC Address Tables Multicast 		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 Croup Address IP Multicast Group Address IP Multicast Group Address ICMP BALLO Finder Multicast Router Port Forward All Unregistered Multicast IV PC Configuration Security Access Control Cuality of Service		1 Copy Set	1 tings	Enabled	V3	Enabled	2	125	10	
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3. In the IGMP Snooping Table, check the radio button and click edit. In the windows you will need to check the selection box for the IGMP Snooping Status after click 'Apply'.

Small Business cisco SG300-10P 10-Port	Gigabit PoE Manage	d Switch		English	Log		
Getting Started	ICMP Speeping						
 Status and Statistics 	IGINF Shooping						
Administration	IGMP Snooping Status: 🔽 Enab	le					
Port Management Smartnort							
VI AN Management	Apply Cancel						
 Spanning Tree 	IGMP Snooping Table						
MAC Address Tables	Entry No. VLAN ID IGM	P Snooping Router MRouter Ports	Query	Query	Query Max Respons	e La	st Memb
✓ Multicast	Opera	ational Status IGMP Version Auto Learn	Robustness I	nterval (sec)	Interval (se	c) Que	ery Count
Properties	0 1 1 1	Enabled v3 Enabled	2	125		0	
IP Multicast Group Address	Copy Settings	Edit					
IGMP Snooping]				
MLD Snooping	Checl	k this radio button					
Multicast Router Port	anda	lials (Edit)					
Forward All	and c	IICK EUIL					
IP Configuration]				
Security							
Access Control							
Quality of Service							
► SNMP							
© 2010-2013 Cisco Systems, Inc. All Rights Rese VLAN ID: IGMP Snooping Status:	I Ved.	Check this selection	,	Operatio	onal IGMP Snoopin	g Status	31
		box and click Apply	· -				
MRouter Ports Auto Learn:	Enable	1 7 Default 9)		Operativ	anal Quary Robustr	000	
Query Interval:	125 sec (Ra	nge: 30 - 18000. Default: 125)		Operatio	onal Query Interval:	633.	
Cuery Max Response Interval:	10 sec (Ra	nge: 5 - 20, Default: 10)		Operatio	onal Query Max Res	ponse l	Interval:
8 Last Member Query Counter	Use Default			Onerativ	nal Last Member (uerv Cr	ounter
East member adely obtines.	C User Defined	(Range: 1 - 7, Default: 2 (Query F	Robustness))	operation	and Eductmention of	acty or	Juner.
🗢 Last Member Query Interval:	1000 mS (Ra	nge: 100 - 25500, Default: 1000)		Operatio	onal Last Member (Query Int	terval:
Immediate leave:	Enable			٦			
IGMP Querier Status:	Enable	Verify that this c	check				
Administrative Querier Source IP Address:	G Auto	box is check		Operatio	onal Querier Source	IP Add	ress:
	C User Defined 168.168.1.1	×					
IGMP Querier Version:	IGMPV2IGMPV3						
Apply Close							

Configuring the DHCP Server

The Ethernet Switch DHCP Server will configure automatically all the IP Addresses of the 500752 Encoder and Decoder, eliminating conflict between devices. If this functionality is absent from your Ethernet Switch you will have to use the MuxLab management software to assign static IP to each of the 500752. Before using the software, you will need to configure a static IP on the computer in the same Subnet (192.168.168.xxx) as the 500752, use 192.168.168.1.

1. Select Administration->Management Interface->IPv4 Interface. Set the IP Address type like Static, set the IP Address, like 168.168.1.1 and set the Mask. After applying the setting you will need to change the IP Address of the Computer Network interface for the same subnet, take an address like 168.168.1.2. Reconnect the Cisco Web Interface using HTTP://168.168.1.1

cisco SG300-10P 10-P	ort Gigabit PoE Manageo	I Switch	
Getting Started Status and Statistics	IPv4 Interface		
Administration System Settings Console Settings Vitangement Interface IP-V interface IP-VS Global Configuration IP-VS interfaces IP-VS Addresses IP-VS Addresses	Management VLAN: IP Address Type: IP Address: Mask:	Dynamic Dynamic Statc f68.168.1.1 C Network Mask 255.255.0 C Prefix Length	Need to provide the IP Address Type (Static), IP Address and Mask
IPv5 Tunnel IPv5 Neighbors IPv9 Routes User Accounts Idle Session Timeout > Time Settings > System Log > File Management Reboot Discovery - Bonjour > Discovery - CDP Ping Transmute	Administrative Default Gateway: Operational Default Gateway: Renew IP Address Now: Auto Configuration via DHCP: Apply Cancel	C UserDefined C None Enable Enabled	
Port Management Smattport VLAN Management Spanning Tree MAC Address Tables Multicast IP Configuration Occurre			

2. Select IP Configuration->DHCP Server->Network Pools. Click the 'Add..' Button.

Small Business	cisco Language: English 💌 Logout About Help
cisco SG300-10P 10-Port	Gigabit PoE Managed Switch
Getting Started Status and Statistics Administration Port Management	Network Pools Network Pool Table Pool Name Network Mask Address Pool Stat Address Pool End Lease Duration Number of Leased Addresses
Smartport Spanning Tree MAC Address Tables Multicast	MuxLab 255.255.25 168.168.1.10 168.168.1.200 Infinite 8 Add Edit Delete Details
POrtiguration Properties AP DICP SnoopingRelay DICP Server Properties <u>Retwork Foods</u> Excluded Addresses Static-Hoats Address Binding Domain Name System Security Access Control Quality of Service SINUP	Click the 'Add'
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3. In the windows provide the Pool Name, Mask (255.255.255.0), Address Pool Start (168.168.1.10) and Address Pool End (168.168.1.200). Verify that you allocate enough IP Address for the Encoder and Decoder that will be present on the network.

Foundine.	Imonau		
Subnet IP Address:			Need to provide the Pool
Mask:	Network Mask 255	5.255.255.0	Name, Mask, Address Pool
	C Prefix Length 24	(Range: 8 - 30)	Start and Address Pool Stop
Address Pool Start:	168.168.1.10]	I I I I I I I I I I I I I I I I I I I
Address Pool End:	168.168.1.200	1	
Lease Duration:	 Infinite 		
	C Days 1 Hor	urs 00 💌 Minutes 00 💌 (Default:	1 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):		1	
NetBIOS Node Type (Option 46):	 Hybrid 		
	C Mixed		
	 Peer-to-Peer Broadcast 		
SNTP Server IP Address (Option 4):	None 💌		
File Server IP Address (siaddr):		1	
File Server Host Name (sname):		(0/64 Characters Used)	
		-	

4. Select IP Configuration->DHCP Server->Properties. Enable the DHCP Server

Small Business	cisco Language: English Logout About He
cisco SG300-10P 10-Port	Gigabit PoF Managed Switch
Small Business SG300-10P 10-Port Getting Stated - Status and Statetics - Administration - Port Management - Sgnaning Tree - MAC Address Tables - Muticast - MAC Address Tables - Muticast - DHCP Snooping/Relay - DHCP Server - Static Hosts - Address Binding - Domain Hame System - Security - Access Control - Gualing Glenroce - SNMP	Cisco Language English Loout About He Gigabit PoE Managed Switch Properties DHCP Server Status: F Enable Cancel Check this check box and click 'Apply'.
SNMP	
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5. Select Administration->File Management->Copy/Save Configuration. Make the changes permanent by clicking 'Apply'.



6. Select Administration->Reboot to reboot the Ethernet switch

Small Business	cisco Language: English 🗸 Logout About Heip
cisco SG300-10P 10-Port	Gigabit PoE Managed Switch
Getting Started Status and Statistics Administration System Settings Console Settings Management Interface User Accounts Idle Session Timeout Time Settings System Log File Management Upgrade/Backup FirmwareLanguage Adve Image Devended Backup Configuration on	Reboot Success To reboot the device, click the Reboot button. Reboot C Immediate C Date Jan X OT X Time 00 X 00 X HHHMM C In Or Days 00 Y Hours 00 Y Minutes Restore to Factory Defaults C Clear Startup Configuration File
DownloadBackup Configuration1.og Configuration Files Properties Copy/Save Configuration DHCP Auto Configuration Reboot Pilagnostics Discovery - Englour Pilscovery - Englour Discovery - CDP Pilog Traceroute	Reboot Cancel Reboot Cancel
Port Management	
VLAN Management	
 Spanning Tree 	
MAC Address Tables	
▼ Multicast	
Properties MAC Group Address IP Multicast Group Address	
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7. If needed you can configure your computer Network Interface to obtain an IP Address Automatically and you can connect back to the Cisco Ethernet Switch using the IP Address 168.168.1.1

Using the product with DIP Switches

Before installing the product to their final location it's recommended to configure the units

- 1. Configure a different address using the DIP switches for each encoder that will be present on the network. Note: It's important that each encoder have a unique address.
- 2. Configure each decoder using the DIP switches to select the right encoder.
- 3. Follow the procedure explained in the installation guide to install the units.

Using the product with the Muxlab Software

- 1. Follow the procedure explained in the installation guide to install all the units.
- 2. Install the software on a computer that is connected on the same network as the 500752 units. Note: the computer network interface should be configured to use DHCP if a DHCP Server is present, else configure the computer network interface to use the same subnet as the 500752, like 192.168.168.1.
- 3. Execute the software. Click the 'Yes' button to perform a full network scan.

100000000000000000000000000000000000000	Settings	Help
🥥 : Video S	ignal Detected III : Monitor Power 'O	N' Detected
DISPLAY	Plottable	SOURCE

4. The first time the software is executed you will get a warning that all the products have the DIP Switches enable. Select 'Yes' and click 'proceed'.

Diagnostics				_ _ ×		
		Diagnosti	c Report			
WARNING	#1: The following MAC address	device(s) hav IP address	e DIP SWITCH enabled Device name			
	00-0B-78-00-70-1A	168.168.1.16	RX1			
	00-0B-78-00-70-2A	168.168.1.13	RX1			
	00-0B-78-00-70-23	168.168.1.15	RX1			
	00-0B-78-00-70-9F	168.168.1.11	TX1			
	00-0B-78-00-70-58	168.168.1.14	TX1			
	00-0B-78-00-70-D9	168.168.1.12	TX1			
ACTION:	Let the software a	utomatically disat	ble Dip Switch for the device(s) listed above			
	• Yes (recommended) • No					
		PROC	EED			

5. Go to the Matrix Connection tab to do the desired connection between the 500752 Encoder and Decoder. Note: More information is available in the Software Manual.

Troubleshooting

The following table describes some of the symptoms, probable causes and possible solutions in regard to the installation of the HDMI over IP Extender Kit with PoE:

Symptom	Probable Cause	Possible Solutions
Freezing Video	IGMP not enable or not	• Check the Ethernet switch configuration
	working properly.	and enable the IGMP protocol.
DIP Switches not	Unit set with DIP	• Use the MuxLab Software to do the
working	Switches Disable	connection or to re-enable the DIP
		Switches.
No 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 500752	network or wrong IP	the same Ethernet switch as the 500752.
	Address	• Verify that the Computer Network
		Interface is set to obtain an IP address
		automatically.
Software update 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).



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