



NETWORK SWITCH RECOMMENDATIONS

INTRODUCTION

The simplicity of the Smart-e VHX series of AVoIP (Audio and Video over Internet Protocol) products means that industry standard 1G/10G Ethernet network switchers can be used for all applications. There are numerous manufactures producing compatible switchers therefore providing multi-sourced products. Many existing installations are also compliant with the required standard so retro fitting to a current Ethernet network is a real possibility, helping to meet budget constraints.

SUGGESTED SWITCH MANUFACTURERS AND MODELS

SUGGESTED SWITCHERS	
Manufacturer	Model
Araknis	AN-210, AN-310 series
Cisco	SG300, SG350, SG-350X, SG500, SG550, SG550X, SF500, SF550
DLink	DGS-1510 series
Luxul	AMS-4424P, AMS-2616P, AMS-1208P
Netgear	M4250, M4300 series
Pakedge	SX-24P
TP-Link	TL-SG2428P, T1600G series
Ubiquiti	EdgeSwitch ES- series

For optimal performance please ensure the following switch requirements are met:

THIRD-PARTY NETWORK SWITCH REQUIREMENTS

- 1) 1G Managed Switch (Layer 3)**
- 2) Multicasting function**
- 3) IGMP Snooping**
- 4) IGMP Querier**
- 5) Immediate/Fast Leave**
- 6) Quality of Service (QoS)**
- 7) Jumbo Frames/Jumbo Packets/MTU**
- 8) POE (Power over Ethernet)**
- 9) EEE disable**
- 10) Multicast dropping**



1) 1G Managed Switch (Layer 3)

Layer 3 switches are very efficient in routing network information and thereby helping to reduce network traffic. They use IP packets which are more complex and geared towards transmitting data more effectively and passing further through the network.

2) Multicasting function

Multicasting is a very efficient method of transmitting the same information to multiple destinations. By using Datagrams, the protocol enables identical data transmission to be sent to a group of receiving computers simultaneously.

3) IGMP Snooping

Internet Group Management Protocol (IGMP) Snooping permits the switch to listen in to the network traffic. This allows the unit to create a map of where IP Multicast streams need to be diverted to and which links do not need them, thereby reducing traffic.

4) IGMP Querier

The IGMP querier is responsible for sending out IGMP group membership queries at a timed interval, retrieving IGMP membership reports from active members, and allowing updates to the IGMP group tables.

5) Immediate/Fast Leave

Immediate leave function prevents unnecessary transmission of data through the network by disabling needless links. Once an active link through the network has been disabled the flow of data will be instantly removed. Immediate-Leave should be enabled for every port on the VLAN.

6) Quality of service (QoS)

QoS is the use of mechanisms or technologies that work on a network to control traffic and ensure the performance of critical applications. It enables organizations to adjust their overall network traffic by prioritizing specific high-performance applications like AVoIP.

7) Jumbo Frames/Jumbo Packets/MTU

A jumbo frame is an Ethernet frame with a payload greater than the standard MTU of 1500 bytes. The MTU (Maximum Transmission Unit) size needs to be able to be changed in the network switcher to over 9000 bytes to support Jumbo Ethernet.

8) POE Budget

Care must be taken when specifying Power over Ethernet (PoE) network switches. The VHX encoders and decoders take between 4-10 Watts each depending on the specific model so it is important to check the total power rating of the network switch and the capacity of each individual port.



9) Disabling EEE

Energy Efficient Ethernet (EEE) is an IEEE 802.3az standard that is designed to reduce power consumption in Ethernet networks during idle periods. If the third-party network switch supports EEE, be sure to disable the EEE function for correct performance.

10) Unknown Multicast Dropping (or Unregistered Multicast Flooding)

Unknown multicast data refers to multicast data for which no forwarding entries exist in the IGMP snooping forwarding table. This feature enables the device to forward unknown multicast data to the router port only. If the device does not have a router port, unknown multicast data will then be dropped. If this feature is not enabled, the unknown multicast data will flood the VLAN to which the data belongs and may severely interfere with normal network operations.