Network Switch Settings

Below is a list of basic Ethernet settings for managed Network switches in order to support multicasting.

Feature of Switch	Single Switch Networking	Multiple Switch Networking	
		Core Switch	Extended Switch
Green or energy-saving feature	Disabled	Disabled	Disabled
Multicast forwarding or filtering	Enabled	Enabled	Enabled
IGMP snooping	Enabled	Enabled	Enabled
IGMP querier	Enabled	Enabled	Disabled
IGMP snooping fast leave	Enabled	Disabled	Enabled
Dynamic multicast router port	Disabled	Disabled	Enabled
Forward unknown multicast	Disabled	Disabled	Enabled
Jumbo frame	Enabled	Enabled	Enabled

System Bandwidth

The Digitalinx IP 5000 Series utilizes the JPEG2000 compression codec to deliver video resolutions up to 4K/UHD. When JPEG2000 delivers 4K video, momentary transfer rates per encoding stream can reach as high as 850 Mbps which will require a gigabit Ethernet switch. When calculating bandwidth, multiply 850 Mbps per encoding video stream (per encoder) to determine your peak performance bandwidth requirement, the decoders in an Digitalinx IP system will not impact bandwidth.

Example: (8) 4K/UHD sources are used with (8) IPEX5001 encoders therefore:
  8 * 850 Mbps = 6800 Mbps OR 6.8 Gbps, this is your maximum bandwidth required by this series

Compare this bandwidth requirement to the switching capacity of the IP switch to determine if the switch is appropriate.

PoE

When choosing a PoE switch, pay close attention to the power budget of the Ethernet switch and how it would allocate the PoE power budget in the A/V LAN design.

In the current market, many PoE Ethernet switches may be unable to provide enough power on all ports simultaneously if power is allocated per port @ 15.4 watts. Typically Digitalinx IP devices typically require 7-9 watts of PoE power and do not consume the full 15.4 watts of PoE power on each port for power. Some network switches allows for actual consumption and may be able to provide power for every port depending on PoE budget.

Approved Switches

Below is a detailed list of network switches that multicast performance has been tested and verified for use with 5000 Series Digitalinx IP systems.

Note: A comprehensive switch settings guide is located online, see product page under the documentation tab at at *www.libav.com*

Switch Manufacturer	Model	Single Switch Systems	Multiple Switch Systems	Video Wall Capable
Cisco	SG350X-24P / SG350X-48P SG350X-24MP / SG350X-48MP	Yes	Yes	Yes
	SG550X-24P / SG550X-48P SG550X-24MP / SG550X-48MP	Yes	Yes	Yes
	Cisco Catalyst 2960-S Series Switches	Yes	Yes*	Yes
Niveo	NGSME24T2H	Yes	No	Yes
	NGSME24T2H-AV	Yes	No	Yes
	NGSME48T2H/T4H	Yes	Yes	Yes
	NGSME24G4S	Yes	Yes	Yes
	NGS-IPV16 / NGS-IPV24	Yes	No	Yes
Netgear	M4250-10G2F-PoE+ (GSM4212P)	Yes	No	Yes
	M4250-10G2XF-PoE+ (GSM4212PX)	Yes	No	Yes
	M4250-10G2XF-PoE++ (GSM4212UX)	Yes	Yes	Yes
	M4250-26G4F-PoE+ (GSM4230P)	Yes	No	Yes
	M4250-26G4XF-PoE+ (GSM4230PX)	Yes	Yes	Yes
	M4250-26G4F-PoE++ (GSM4230UP)	Yes	No	Yes
	M4250-40G8F-PoE+ (GSM4248P)	Yes	No	Yes
	M4250-40G8XF-PoE+ (GSM4248PX)	Yes	Yes	Yes
Luxul	AMS-4424P	Yes	Yes	No
	XMS-7048P	Yes	Yes	No
Pakedge	SX-24P8 SX-24P16 SX-24P	Yes	No	Yes

Disclaimer: The Network switches listed above have been stress tested to work with Digitalinx IP 5000 products and the performance is guaranteed. Using a managed Network switch not on this list, but with similar multicasting features, does not guarantee performance. Liberty AV support technicians will suggest that any non-approved network switches be replaced with an approved switch on this list if the switch is deemed unable to stabilize professional IP multicasting.

*Depends on Cisco model and may require stacking cards and cabling. Contact product@libav.com for pre sales design support.