INCITE DIGITAL VIDEO PRESENTATION SYSTEMS

NCITE-813
NCITE-813A
NCITE-813AC

AV FOR AN IT WORLD

IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.
12. USE ONLY with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
16. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
17. Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
18. DO NOT overload wall outlets or extension cords beyond their rated capacity as this can cause electric shock or fire.

The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.

ESD Warning: The icon to the left indicates text regarding potential danger associated with the discharge of static electricity from an outside source (such as human hands) into an integrated circuit, often resulting in damage to the circuit.

WARNING: To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.

WARNING: No naked flame sources - such as candles - should be placed on the product.

WARNING: Equipment shall be connected to a MAINS socket outlet with a protective earthing connection.

COPYRIGHT NOTICE

LIABILITY NOTICE

AMX WARRANTY AND RETURN POLICY

The AMX Warranty and Return Policy and related documents can be viewed/downloaded at www.amx.com.

ESD WARNING
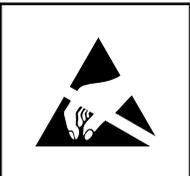
To avoid ESD (Electrostatic Discharge) damage to sensitive components, make sure you are properly grounded before touching any internal materials.

When working with any equipment manufactured with electronic devices, proper ESD grounding procedures must be followed to make sure people, products, and tools are as free of static charges as possible. Grounding straps, conductive smocks, and conductive work mats are specifically designed for this purpose. These items should not be manufactured locally, since they are generally composed of highly resistive conductive materials to safely drain static discharges, without increasing an electrocution risk in the event of an accident.

Anyone performing field maintenance on AMX equipment should use an appropriate ESD field service kit complete with at least a dissipative work mat with a ground cord and a UL listed adjustable wrist strap with another ground cord.

	WARNING: Do Not Open! Risk of Electrical Shock. Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel. Place the equipment near a main power supply outlet and make sure that you can easily access the power breaker switch.

WARNING: This product is intended to be operated ONLY from the voltages listed on the back panel or the recommended, or included, power supply of the product. Operation from other voltages other than those indicated may cause irreversible damage to the product and void the products warranty. The use of AC Plug Adapters is cautioned because it can allow the product to be plugged into voltages in which the product was not designed to operate. If the product is equipped with a detachable power cord, use only the type provided, or specified, by the manufacturer or your local distributor.

BATTERY INSTRUCTIONS:

THIS PRODUCT CONTAINS A LITHIUM PACK OR COIN/BUTTON CELL BATTERY. IF MISUSED OR ABUSED THIS CAN RESULT IN:
- Smoke or gas hazard
- Heat hazard
- Fire hazard
- Explosion hazard

WARNING: Do not place batteries in mouth or ingest. Chemical burn hazard. Keep new and used batteries out of reach of children and pets. If swallowed, it can cause severe internal burns in just 2 hours and can lead to death.
If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.
WARNING: If battery compartment does not close securely, stop using the product and keep it away from children and pets.
WARNING: Do not handle leaking or damaged Lithium batteries.
WARNING: Risk of leakage. Only use the specified type of batteries. Never mix new and used batteries.
Observe correct polarity. Remove batteries from products that are not in use for extended periods of time. Store batteries in a dry place.
WARNING: Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.
WARNING: Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.
Dispose of used batteries according to the instructions.
WARNING: Do not recharge non-rechargeable batteries.
WARNING: Avoid exposure to extreme heat or cold.
Please dispose of any used batteries properly, following any local regulations. Do not incinerate.
WARNING: Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, can result in an explosion.

RACK MOUNTING:

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."

FCC AND CANADA EMC COMPLIANCE INFORMATION:

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.
NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.
WARNING: This product must not be used in residential areas.
CAUTION: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this device.
WARNING: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.
NOTE: For interference purposes, the residential and domestic environments are defined as an environment within 10meters of radio or broadcast receiving equipment or home use. CAN ICES-3 (A)/NMB-3(A)

警 告

此为 A 级产品。在生活环境中，该产品可能会造成无线电干扰。在这种情况下，可能需要用户对干扰采取切实可行的措施

EU COMPLIANCE INFORMATION:

Hereby, AMX LLC declares that the equipment type NCITE-813, NCITE-813A, NCITE-813AC are in compliance with the following: European Union Low Voltage Directive 2014/35/EU; European Union EMC Directive 2014/30/EU; European Union Restriction of Hazardous Substances Recast (RoHS2) Directive 2011/65/EU; European Union Eco-Design 1275/2008; European Union Eco-Design 801/2013; European Union Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Directive 1907/2006

The full text of the EU declaration of conformity is available at the following internet address: http://www.amx.com/ techcenter/certifications.asp.

WEEE NOTICE:

	This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

ENVIRONMENTAL:

	This device is designed and evaluated under the condition of non-tropical climate; it can only be usedin locations in non-tropical climate areas. Using the device in tropical climate areas could result in apotential safety hazard. 该设备的设计和测试是在非热带气候条件进行的 ，它只适用在非热带气候的地区．在热带气候地区使用可 能会导致潜在的安全隐患 ．
	This device is designed and evaluated under the condition of altitude below 2000 meters above sealevel; it can only be used in locations below 2000 meters above sea level. Using the device above 2000meters could result in a potential safety hazard.该设备的设计和测试是在海拔 2000 米高度以下进行的，它只适用在海拔2000 米以下的地区．在海拔2000米以上使用可能会导致潜在的安全隐患．
	此标识适用于在中华人民共和国销售的电子信息产品．标识中间的数字为环保实用期限的年数.

产品中有毒有害物质或元素的名称及含量

部件名称	有毒有害物质或元素					
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
金属部件 (包括紧固件)	X	O	O	O	O	O
印刷电路板组件和元件	X	O	O	O	O	O
缆线和缆线组件	X	O	O	O	O	O
塑料和聚合物部件	O	O	O	O	O	O
显示器，包含灯泡	X	X	O	O	O	O
除印刷电路板外的其他电子组件	X	O	O	O	O	O
光学玻璃材料	X	O	X (光学玻璃)	O	O	O
干电池	O	O	O	O	O	O

本表格依据 SJ/T 11364 的规定编制。

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

以销售日期为准，此表显示在"思科系统公司"的电子信息产品部件中何处存在这些有毒有害物质，请注意，并非上列所示部件都有包含在内装产品中。

除非产品上另有标记，所有内附产品及其部件的'环保使用期限'均由此显示的符号表示。此环保使用期限只适用于产品手册中所规定的使用条件。

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Overview

AMX Incite Digital Video Presentation Systems are the next generation of presentation switchers that combine AMX control and signal distribution with HARMAN audio. Video presentation features include advanced windowing with scaling allowing for various video configurations (side-by-side, top-bottom, and picture-in-picture), and live production style video features such as transition effects. Support and scaling for 4K/60 4:4:4 and HDCP 2.2, as well as lower resolutions, ensures the Incite family provides flexibility for visiting devices and compatibility from source to display whether using legacy or new devices. Audio features include DSP with advanced capabilities like independent 10-band parametric EQ, independent input gain adjustments, and variable compression, Advanced Feedback Suppression™ and two of the three models also include DriveCore amplification technology.

FIG. 1 displays the NCITE-813AC.

FIG. 1 NCITE-813AC

The Incite Digital Video Presentation Systems covered in this manual include the following devices:

Incite Digital Video Presentation Systems			
Name	FG#	Description	Page Ref
NCITE-813	FG1901-10	8x1:3 4K60 4:4:4 Digital Video Presentation Switcher with HDCP 2.2, Video Scaling, Distance Transport, Advanced Windowing, DSP, Advanced Feedback Suppression	page 16
NCITE-813A	FG1901-12	8x1:3 4K60 4:4:4 Digital Video Presentation Switcher with HDCP 2.2, Video Scaling, Distance Transport, Advanced Windowing, DSP, Advanced Feedback Suppression, DriveCore Amplification	page 16
NCITE-813AC	FG1901-16	8x1:3 4K60 4:4:4 Digital Video Presentation Switcher with HDCP 2.2, Video Scaling, Distance Transport, Advanced Windowing, DSP, Advanced Feedback Suppression, DriveCore Amplification, NX Central Control	page 19

4K/60 4:4:4 Support

Incite supports today's 4K content without modifying the color space or reducing the frame rate.

HDMI 2.0 and HDCP 2.2 Support

By incorporating HDMI 2.0 and HDCP 2.2, the NCITE products are compatible with all the latest 4K sources and displays.

Scaled Outputs

Provides current and future support for permanent and visiting source devices connected at the same time, both 4K and non 4K. Current HD signals can be up-scaled, while 4K60 can be downscaled, providing flexible compatibility from source to display.

Advanced Windowing with Scaling

Send two sources to a single display in various preset configurations (side-by-side, top-bottom, and picture-in-picture) regardless of source resolution, Incite will scale the sources to fit the resolution requirements of the destination display. The Incite also includes "Live Production" Style Video Features such as transition effects when switching between sources providing presenters with a professional look and feel.

DSP by BSS

Includes an integrated digital signal processor with advanced capabilities like independent 10-band parametric EQ, independent input gain adjustments and variable compression, allow precision tuning to match unique source and room attributes. Enhanced Microphone Processing includes 3-band EQ, compressional, gating, auto-ducking, and limiting on each microphone input to ensure crystal clear communication.

dbx AFS (Advanced Feedback Suppression)

Never experience feedback problems again, Advanced Feedback Suppression (AFS) takes the guesswork out of controlling feedback, which is not only annoying but can even damage speakers – and ears. AFS is flexible and easy to use: just choose the level of suppression you want, and you're done. AFS automatically stops feedback in its tracks.

Crown DriveCore Amplification (NCITE-813A/AC only)

Seamlessly integrates the amplifier drive stage into the power output stage fusing everything into a chip the size of a dime. The foundational DriveCore™ circuitry is based on breakthroughs by Crown's own Gerald Stanley with five patents applying to the advanced feedback, modulation and output stage technologies. DriveCore's front-end drive circuits leverage the inherent efficiency of Class D output stages while also maintaining superb sonic characteristics. The end result is an ultra-efficient one-piece audio amplifier circuit that exhibits the exemplary audio quality of a highly evolved Class AB design.

Distance Transport

Extend the reach of 4K60 4:4:4 to 100 meters, well beyond the capabilities of typical HDMI cabling.

Flexible Interface Options

Interface options include integrated web GUI, front control panel, On Screen Menu Setup and is a Native NetLinx device which can be controlled via native NetLinx ICSP commands. Full feedback and notifications are provided for NetLinx integration.

Integrated NX Central Control (NCITE-813AC only)

The NCITE-813AC is a programmable network appliance specifically designed to control AV and building technology using multiple analog and digital formats. The NCITE-813AC provides a scalable platform for the future by combining high performance, backward compatibility and extensive network security features. The NCITE-813AC is ideal for control and automation of medium-sized rooms and multi-room applications.

Incite Digital Video Presentation Systems

NCITE-813/813A

FIG. 2 displays the NCITE-813:

FIG. 2 NCITE-813 (front panel)

Specifications

The following table lists the specifications for the NCITE-813/813A Digital Video Presentation Systems:

NCITE-813/813A Specifications	
General:	
Enclosure:	Metal with black matte finish
Dimensions (HWD):	1 11/16" x 19" x 14" (4.4 cm x 48.3 cm x 35.6 cm)
Weight:	TBA
Regulatory Compliance:	TBA
Included Accessories:	• (1) Power Cord, Universal • (2) Front Rack Mounting Brackets • (4) Rubber Feet
Active Power Requirements:	
Power Consumption:	TBA
Power Connector:	• IEC Power Card Connector •100-240 VAC •50-60 Hz
Environmental:	
Temperature (Operating):	0° C to 40° C (32° F to 104° F)
Temperature (Storage):	-10° C to 70° C (14° F to 158° F)
Humidity (Operating):	5% to 85% RH
Ethernet:	
Connection:	(1) RJ-45
Description:	10/100 Port RJ-45 connector provides TCP/IP communication
Link/Act Indicator:	Link/Activity LED (green) blinks when receiving Ethernet data packets, one on Ethernet RJ-45 connector and one on the front panel
Speed Indicator:	Speed LED (yellow) lights On when the connection speed is 100 Mbps Ethernet connection and turns OFF when the speed is 10 Mbps
Integrated Amplifier (NCITE-813A only):	
Crown DriveCore Amplification:	• Integrated Crown DriveCore Amplifier (NCITE-813A only) • 8 Ohm stereo / 70 V / 100 V mono selectable amplifier
Integrated Matrix Switcher Control:	
Source Select Buttons 1-8:	Press to select audio and video source selection.
Navigation Control (Up, Down, Left, Right, Select):	For on-screen menu navigation and selection
Menu On/Off:	For entering or exiting on-screen menu mode
Video Mute:	Press to mute/un-mute (enable/disable) all video output displays. Video mute results in a blank screen on the output display.
Volume Knob:	Turn on volume up/down, push to mute/un-mute, assigned to audio group 1.

NCITE-813/813A Specifications (Cont.)

Presentation Switcher:

Video Switching:	8x1:3 4K60 4:4:4 Video Switching, selected scaled image presented to 3 outputs simultaneously
Video Inputs:	• (2) HD15; supports RGBHV • (4) HDMI; supports 4K60 4:4:4 HDMI 2.0/HDCP 2.2 • (2) DXLite; supports 4K60 4:4:4 HDMI 2.0, HDCP 2.2, audio, and power (receives signals from DX-TX-DWP-4K DXLink 4K HDMI Decor Style Wallplate Transmitter
Video Outputs:	• (2) HDMI; supports 4K60 4:4:4 HDMI 2.0/HDCP 2.2 • (1) DXLite; supports 4K60 4:4:4 HDMI 2.0, HDCP 2.2, audio, power, and USB 2.0 (sends signal to DXL-RX-4K60 DXLite RX)
HDCP Support:	• Yes, including HDCP 1.x and HDCP 2.2 • Key Management System • AMX HDCP InstaGate Pro™ Technology • Key support up to 16 devices per output, independent of source device
EDID Management:	A preferred EDID can be selected for each input or any display EDID can be mirrored to any input independently.

HDMI with HDMI:

Signal Type Support:	• HDMI 2.0, HDCP 2.2 • DVI-D (Single Link with HDMI Cable Adapter) • DisplayPort ++ (Input Only, with HDMI Cable Adapter)
Input Connectors:	(4) HDMI Type A Female Ports
Output Connectors:	(2) HDMI Type A Female Ports
Output Scaling:	Yes, selected scaled image presented to 3 outputs (2 HDMI and 1 DXLite) simultaneously
Video Data Rate (Max):	18 Gbps (Max)
Video Pixel Clock (Max):	Up to 600 MHz
Progressive Resolution Support:	480p up to 4096x2160@60Hz 4:4:4 including 3840x2160 4:4:4
Interlaced Resolution Support:	480i, 576i, 1080i
4K Resolution Support (Max):	• 3840x2160p@24/25/30/60Hz @ 4:4:4 • 4096x2160p@24/25/30/60Hz @ 4:4:4
HDMI Cable Requirement:	HDMI High Speed Cable, Category 2, Required
HDCP Support:	• Yes, including HDCP 1.x and HDCP 2.2 • Key Management System • AMX HDCP InstaGate Pro™ Technology • Key support up to 16 devices per output, independent of source device

Audio:

Audio Inputs:	• (6) 3.5mm 5-position captive-wire terminals; support balanced (differential) or unbalanced (single-ended) stereo audio • (2) 3.5mm 3-pin captive-wire MIC connectors; supports up to two mono microphones, unbalanced or balanced audio • (4) HDMI connections support digital audio • (2) DXLink connections support embedded DXLite audio
Audio Outputs:	• (1) Amplified audio output; 4-position captive-wire connector; supports amplified, variable, mono or stereo audio (NCITE-813A only) • (2) Line level audio output; supports balanced or unbalanced mono or stereo • (2) HDMI connections support embedded digital audio • (1) DXLite output support embedded digital audio

Analog Video (RGBHV with HD15):

Compatible Formats:	RGBHV
Input Connector:	HD-15
Resolution Support:	Up to 1920x1200@60Hz Reduce Blanking
Auto-Adjust Input:	Supported
Digital Processing:	24-bit, 165 MHz

NCITE-813/813A Specifications (Cont.)

DXLite with RJ-45:

Input Connections:	(2) RJ-45
Input Compatible Formats:	Supports 4K60 4:4:4 HDMI 2.0, HDCP 2.2, audio, and power (input)
Output Connection:	(1) RJ-45
Output Formats:	Supports 4K60 4:4:4 HDMI 2.0, HDCP 2.2, audio, and power; output supports all this plus USB 2.0
Output Scaling:	Yes, selected scaled image presented to 3 outputs (2 HDMI and 1 DXLite) simultaneously
HDCP Support:	Yes
Twisted Pair Cable Type:	Shielded Cat6, Cat6A, and Cat7
	DXLink and DXLite twisted pair cable runs for equipment shall only be run within a common building where a common building is defined as: the walls of the structure(s) are physically connected and the structure(s) share a single ground reference.
	For more details and helpful cabling information, reference the white paper titled Cabling for Success with DXLink, or contact your AMX representative.

Microphone Audio:

Microphone Input Connections:	(2) 3.5mm 3-pin captive-wire connectors; supports up to two mono microphones, unbalanced or balanced audio
Microphone Input Format Support:	Line or Mic level, balanced or unbalanced audio
Microphone input Equalizer:	• 3-band parametric EQ with variable center frequency, filter type and Q • Center Frequency: 20 Hz to 20 kHz • EQ Gain per Band: -12 to +12 dB • Q per band: 0.1 to 20 • Filter Types: Bell, Base Shelving, Treble Shelving, Low Pass, High Pass, Band Pass, Band Stop
Microphone Input Compression:	• Independent Compression per Microphone • Attack: 1 to 2000 ms • Release: 10 to 5000 ms • Compression Ratio: 1 to 20 • Threshold: -60 to 0 dB
Microphone Gating:	• Independent Gating per Microphone • Attack: 1 to 2000 ms • Release: 10 to 5000 ms • Depth: 0 to 20 dB • Hold Off: 0 to 2000 ms • Threshold: -60 to 0 dB
Microphone Limiter:	• Independent Limiting per Microphone • Attack: 1 to 2000 ms • Release: 10 to 5000 ms • Threshold: -60 to 0 dB
Microphone Ducking:	• Independent Ducking per each of 3 audio paths • Attack: 1 to 2000 ms • Release: 10 to 5000 ms • Attenuation: 0 to 20 dB • Hold Off: 0 to 4000 ms • Threshold: -60 to 0 dB

NCITE-813AC

FIG. 3 displays the NCITE-813AC:

FIG. 3 NCITE-813AC (front panel)

Specifications

The following table lists the specifications for the NCITE-813AC Digital Video Presentation System:

NCITE-813AC Specifications	
General:	
Enclosure:	Metal with black matte finish
Dimensions (HWD):	3 1/2" x 19" x 14" (8.82 cm x 48.3 cm x 35.6 cm)
Weight:	TBA
Regulatory Compliance:	TBA
Included Accessories:	• (1) Power Cord, Universal • (2) Front Rack Mounting Brackets • (4) Rubber Feet
Active Power Requirements:	
Power Consumption:	TBA
Power Connector:	• IEC Power Card Connector •100–240 VAC •50-60 Hz
Environmental:	
Temperature (Operating):	0º C to 40º C (32º F to 104º F)
Temperature (Storage):	-10º C to 70º C (14º F to 158º F)
Humidity (Operating):	5% to 85% RH
Heat Dissipation (Typical):	TBA
Heat Dissipation (Standby):	TBA
Ethernet:	
Connection:	(1) RJ-45
Description:	10/100 Port RJ-45 connector provides TCP/IP communication
Integrated Amplifier:	
Crown DriveCore Amplification:	• Integrated Crown DriveCore Amplifier • 8 Ohm stereo / 70 V / 100 V mono selectable amplifier
ICSLAN:	
ICSLan Connection:	(1) RJ-45, 10/100 Port RJ-45 connector. Auto MDI/MDI-X enabled. Supports IPv4 and IPv6 networks. Supports HTTP, HTTPS, Telnet, FTP.
ICSLan Link/Active Indicator:	ICSLan LED (green) blinks when receiving Ethernet data packets, one on Ethernet RJ-45 connector and one on the front panel
ICSLan Speed Indicator:	Speed LED (yellow) lights On when the connection speed is 100 Mbps Ethernet connection and turns OFF when the speed is 10 Mbps

NCITE-813AC Specifications (Cont.)

Onboard Master:

Controller:	Integrated Controller is the equivalent of a NetLinx NX-2200 Integrated Controller
Memory:	•NVRAM: 1 MB •Memory Card: 16 GB SD •DDRAM: 1 GB **NOTE:** *Supports external USB Solid State Drive*
Processor:	1600 MIPS
Program Port:	(1) USB Standard B
Configuration Dip Switch:	4-Position
ID Pushbutton:	Black ID pushbutton for setting IP mode and reverting to default configuration and firmware It has no effect on the Internal Switcher Device.
Status Indicator:	Status LED (green) blinks to indicate that the system is programmed and communicating properly
Input Indicator:	Input LED (yellow) blinks to indicate that the Controller is receiving data
Output Indicator:	Output LED (red) blinks to indicate that the Controller is transmitting data
USB Host Port:	(2) USB Standard A, one on front and one on back, USB Host port supports Solid State drive for upgrading firmware, loading code files, copying configuration data and remote storage

Control Parts and Indicators:

AxLink Port (1):	(1) 4-position 3.5mm Screw Terminal, provides data and power to external AxLink control devices
AxLink Indicator:	(1) AxLink LED (green) indicates the state of the AxLink port
RS-232/422/485 Port:	• (1) 10-position 3.5mm Screw Terminal •NetLinx Port 1 • XON/XOFF (transmit on / transmit off) • CTS/RTS (clear to send/ready to send) • 300 - 115,200 baud
RS-232 Port:	• (3) 5-position 3.5mm Screw Terminal •NetLinx Ports 2-4 • XON/XOFF (transmit on / transmit off) • CTS/RTS (clear to send/ready to send) • 300 - 115,200 baud
Serial Indicator:	(4) sets of LEDs (red/yellow) indicate when serial Ports 1-4 are transmitting and receiving data
IR/Serial:	• (4) 2-position 3.5mm Screw Terminal • 4 IR Transmit / 1-way Serial ports •NetLinx Ports 11-14 • Support high-frequency carriers up to 1.142 MHz • 4 IR/Serial data signals can be generated simultaneously
IR/Serial Indicators:	(4) LEDs (red) indicate when each of the IR/Serial ports (11-14) are transmitting control data
I/O Channels:	• (4) One 6-position 3.5mm Screw Terminal • 4-channel binary I/O port for contact closure with each • input being capable of voltage sensing •NetLinx Port 22 • Channels 1-4
I/O Indicator:	(4) LEDs (yellow) indicate each of the I/O channels (1-4) are active
Relays:	• (4) One 2-position 3.5 mm Screw Terminal, (4) singlepole, single-throw relays •NetLinx Port 21 • Channels 1-4 • Each relay can switch up to 24 VDC or 28 VAC @ 1 A • Each relay is independently controlled
Relays Indicators:	(4) LEDs (red) indicate when each of the relay channels (1-4) are active (closed)

Integrated Matrix Switcher Control:

Source Select Buttons 1-8:	Press to select audio and video source selection.
Navigation Control (Up, Down, Left, Right, Select):	For on-screen menu navigation and selection
Menu On/Off:	For entering or exiting on-screen menu mode

NCITE-813AC Specifications (Cont.)

Integrated Matrix Switcher Control: (Cont.)

Video Mute:	Press to mute/un-mute (enable/disable) all video output displays. Video mute results in a blank screen on the output display.
Volume Knob:	Turn on volume up/down, push to mute/un-mute, assigned to audio group 1.

Presentation Switcher:

Video Switching:	8x1:3 4K60 4:4:4 Video Switching, selected scaled image presented to 3 outputs simultaneously
Video Inputs:	• (2) HD15; supports RGBHV • (4) HDMI; supports 4K60 4:4:4 HDMI 2.0/HDCP 2.2 • (2) DXLite; supports 4K60 4:4:4 HDMI 2.0, HDCP 2.2, audio, and power (receives signals from DX-TX-DWP-4K DXLink 4K HDMI Decor Style Wallplate Transmitter
Video Outputs:	• (2) HDMI; supports 4K60 4:4:4 HDMI 2.0/HDCP 2.2 • (1) DXLite; supports 4K60 4:4:4 HDMI 2.0, HDCP 2.2, audio, power, and USB 2.0 (sends signal to DXL-RX-4K60 DXLite RX)
HDCP Support:	• Yes, including HDCP 1.x and HDCP 2.2 • Key Management System • AMX HDCP InstaGate Pro™ Technology • Key support up to 16 devices per output, independent of source device
EDID Management:	A preferred EDID can be selected for each input or any display EDID can be mirrored to any input independently.

HDMI with HDMI:

Signal Type Support:	• HDMI 2.0, HDCP 2.2 • DVI-D (Single Link with HDMI Cable Adapter) • DisplayPort ++ (Input Only, with HDMI Cable Adapter)
Input Connectors:	(4) HDMI Type A Female Ports
Output Connectors:	(2) HDMI Type A Female Ports
Output Scaling:	Yes, selected scaled image presented to 3 outputs (2 HDMI and 1 DXLite) simultaneously
Video Data Rate (Max):	18 Gbps (Max)
Video Pixel Clock (Max):	Up to 600 MHz
Progressive Resolution Support:	480p up to 4096x2160@60Hz 4:4:4 including 3840x2160 4:4:4
Interlaced Resolution Support:	480i, 576i, 1080i
4K Resolution Support (Max):	• 3840x2160p@24/25/30/60Hz @ 4:4:4 • 4096x2160p@24/25/30/60Hz @ 4:4:4
HDMI Cable Requirement:	HDMI High Speed Cable, Category 2, Required
Input Equalization:	TBA
Input Re-clocking (CDR):	TBA
HDCP Support:	• Yes, including HDCP 1.x and HDCP 2.2 • Key Management System • AMX HDCP InstaGate Pro™ Technology • Key support up to 16 devices per output, independent of source device

Audio:

Audio Inputs:	• (6) 3.5mm 5-position captive-wire terminals; support balanced (differential) or unbalanced (single-ended) stereo audio • (2) 3.5mm 3-pin captive-wire MIC connectors; supports up to two mono microphones, unbalanced or balanced audio • (4) HDMI connections support digital audio • (2) DXLink connections support embedded DXLite audio
Audio Outputs:	• (1) Amplified audio output; 4-position captive-wire connector; supports amplified, variable, mono or stereo audio (NCITE-813A only) • (2) Line level audio output; supports balanced or unbalanced mono or stereo • (2) HDMI connections support embedded digital audio • (1) DXLite output support embedded digital audio

NCITE-813AC Specifications (Cont.)

Analog Video (RGBHV with HD15):

Compatible Formats:	RGBHV
Input Connector:	HD-15
Resolution Support:	Up to 1920x1200@60Hz Reduce Blanking
Auto-Adjust Input:	Supported
Digital Processing:	24-bit, 165 MHz

DXLite with RJ-45:

Input Connections:	(2) RJ-45
Input Compatible Formats:	Supports 4K60 4:4:4 HDMI 2.0, HDCP 2.2, audio, and power (input)
Output Connection:	(1) RJ-45
Output Formats:	Supports 4K60 4:4:4 HDMI 2.0, HDCP 2.2, audio, and power; output supports all this plus USB 2.0
Output Scaling:	Yes, selected scaled image presented to 3 outputs (2 HDMI and 1 DXLite) simultaneously
HDCP Support:	Yes
Twisted Pair Cable Type:	Shielded Cat6, Cat6A, and Cat7 DXLink and DXLite twisted pair cable runs for equipment shall only be run within a common building where a common building is defined as: the walls of the structure(s) are physically connected and the structure(s) share a single ground reference. For more details and helpful cabling information, reference the white paper titled Cabling for Success with DXLink, or contact your AMX representative.

Microphone Audio:

Microphone Input Connections:	(2) 3.5mm 3-pin captive-wire connectors; supports up to two mono microphones, unbalanced or balanced audio
Microphone Input Format Support:	Line or Mic level, balanced or unbalanced audio
Microphone input Equalizer:	• 3-band parametric EQ with variable center frequency, filter type, and Q • Center Frequency: 20 Hz to 20 kHz • EQ Gain per Band: -12 to +12 dB • Q per band: 0.1 to 20 • Filter Types: Bell, Base Shelving, Treble Shelving, Low Pass, High Pass, Band Pass, Band Stop
Microphone Input Compression:	• Independent Compression per Microphone • Attack: 1 to 2000 ms • Release: 10 to 5000 ms • Compression Ratio: 1 to 20 • Threshold: -60 to 0 dB
Microphone Gating:	• Independent Gating per Microphone • Attack: 1 to 2000 ms • Release: 10 to 5000 ms • Depth: 0 to 20 dB • Hold Off: 0 to 2000 ms • Threshold: -60 to 0 dB
Microphone Limiter:	• Independent Limiting per Microphone • Attack: 1 to 2000 ms • Release: 10 to 5000 ms • Threshold: -60 to 0 dB
Microphone Ducking:	• Independent Ducking per each of 3 audio paths • Attack: 1 to 2000 ms • Release: 10 to 5000 ms • Attenuation: 0 to 20 dB • Hold Off: 0 to 4000 ms • Threshold: -60 to 0 dB

Port Numbers

The following table lists the port numbers for the NCITE-813AC:

NCITE-813AC Port Numbers				
RS-232	RS-232/422/485	IR/Serial	I/O	Relay
2-4	1	11-14	22	21

Installation

Overview

This chapter provides information on installing a presentation system into an equipment rack.

Mounting the NCITE-813 into an Equipment Rack

The NCITE-813/813A occupies one rack unit (1 RU) in a standard equipment rack. The NCITE-813AC occupies two rack units (2 RU) in a rack. The following steps apply to mounting the presentation systems.

1. Discharge any static electricity from your body by touching a grounded metal object.

2. Position and install the mounting brackets, as shown in FIG. 4, using the supplied mounting screws. FIG. 4 displays how the brackets should be attached to the NCITE-813AC:
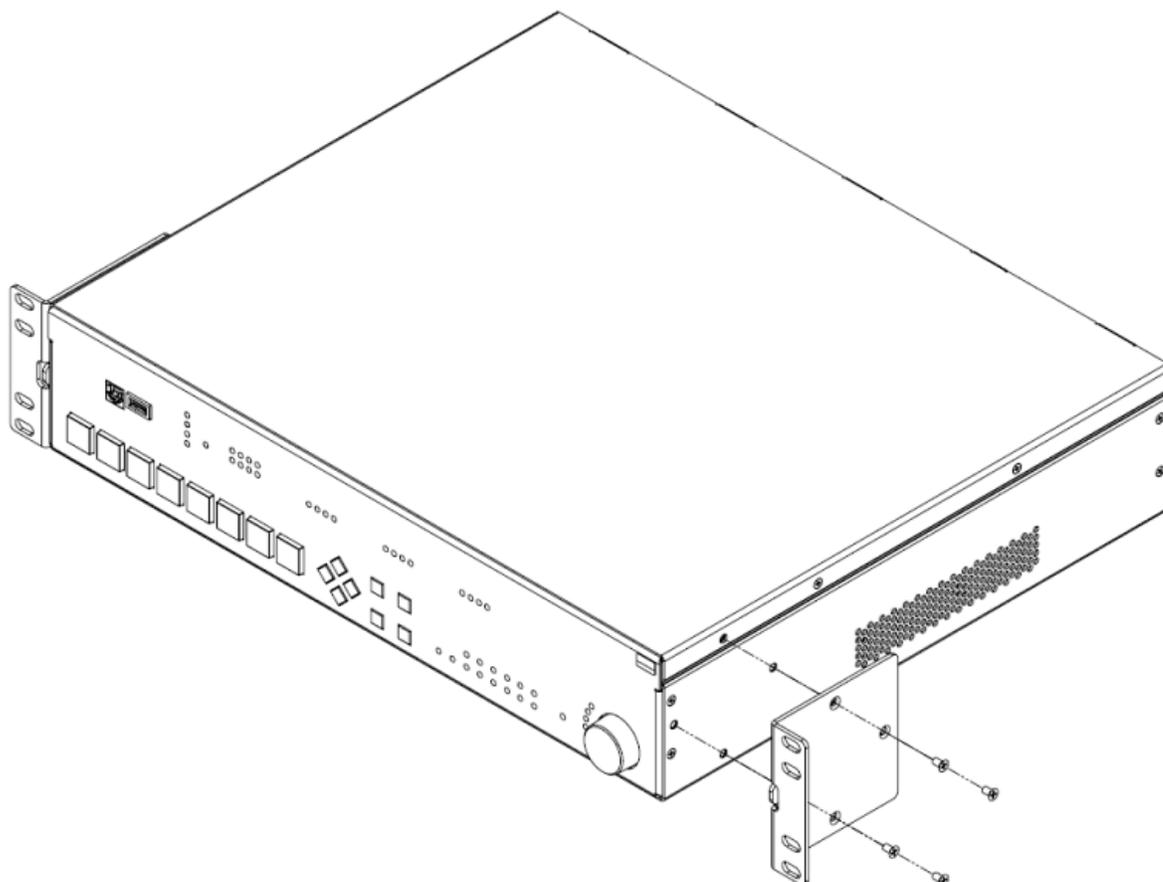
FIG. 4 Rack mounting the NCITE-813AC

FIG. 5 displays how the brackets should be attached to the NCITE-813/813A:
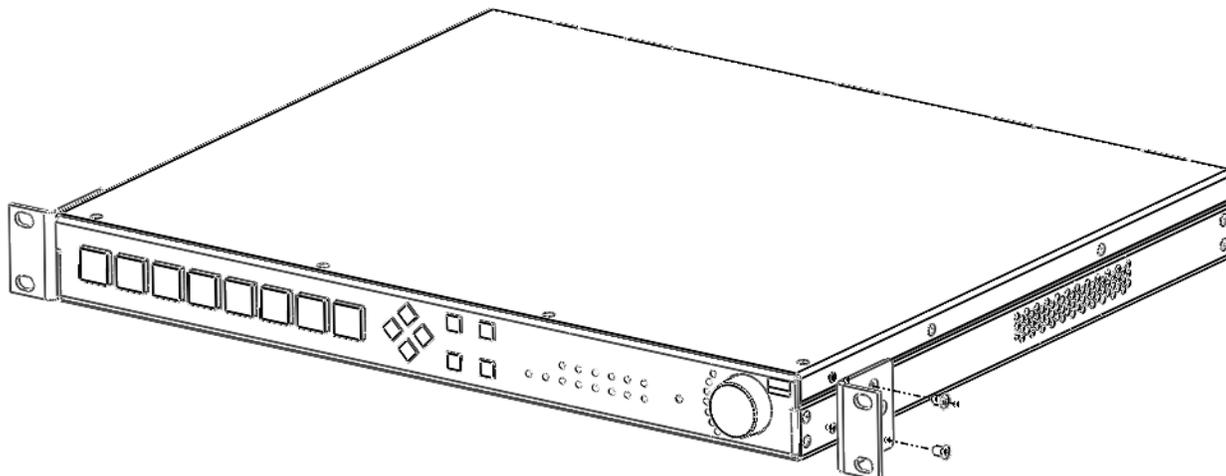
FIG. 5 Rack Mounting the NCITE-813/813A

3. Install the presentation system in the mounting rack by using the mounting screws to affix the unit to the rack. Use four screws to mount each bracket on the NCITE-813AC. The NCITE-813/813A requires only two screws for each bracket.

NOTE: *You can also rotate the mounting brackets on each type of unit to mount the device to the underside of a surface such as a table or desk.*

4. Connect any applicable wires to the presentation system. Refer to the *Wiring and Device Connections (Incite Devices)* section on page 22 for wiring diagrams and pinout descriptions.

CAUTION: *DO NOT stand other units directly on top of the presentation system when it is rack mounted, as this will place excessive strain on the mounting brackets.*

Ventilation

ALWAYS ensure that the rack enclosure is adequately ventilated. Do not block any ventilation openings. Sufficient airflow must be achieved (by convection or forced-air cooling) to satisfy the ventilation requirements of all the items of equipment installed within the rack.

NOTE: *The maximum operating ambient temperature is 40C (104F).*

CAUTION: *When installing equipment into a rack, distribute the units evenly. Otherwise, hazardous conditions may be created by an uneven weight distribution.*
Reliable earthing (grounding) of rack-mounted equipment should be maintained.
The presentation system should not be installed in enclosed spaces. It is recommended that you leave 1 RU of space above the presentation system when you install it in a rack.

Wiring and Device Connections

Overview

This chapter provides functional details for each item on the front and rear panel of the Incite Presentation Systems. Wiring specifications are also provided, when applicable. FIG. 6 displays the front panel of the NCITE-813.
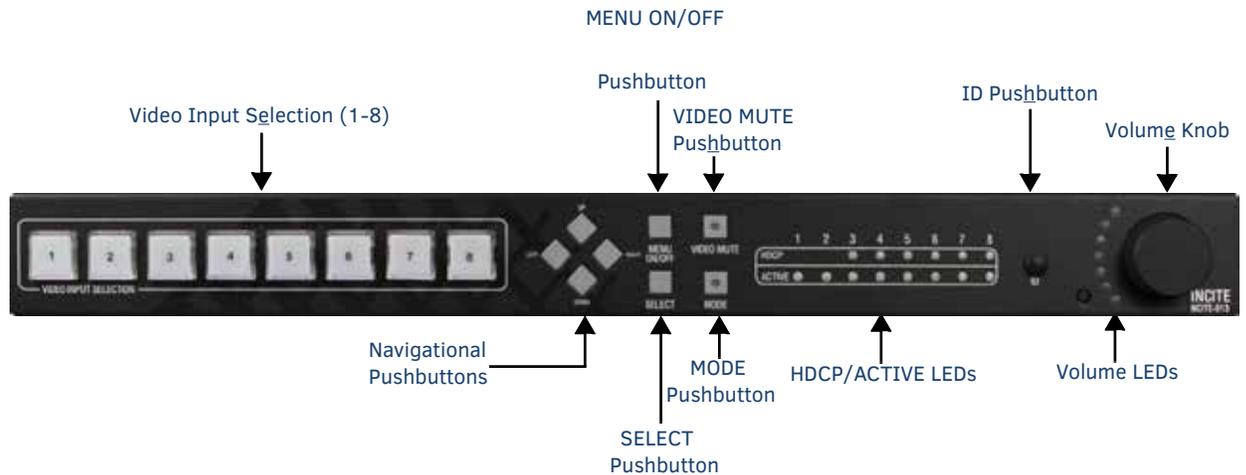
FIG. 6 NCITE-813 front panel

FIG. 7 displays the rear panel of the NCITE-813:
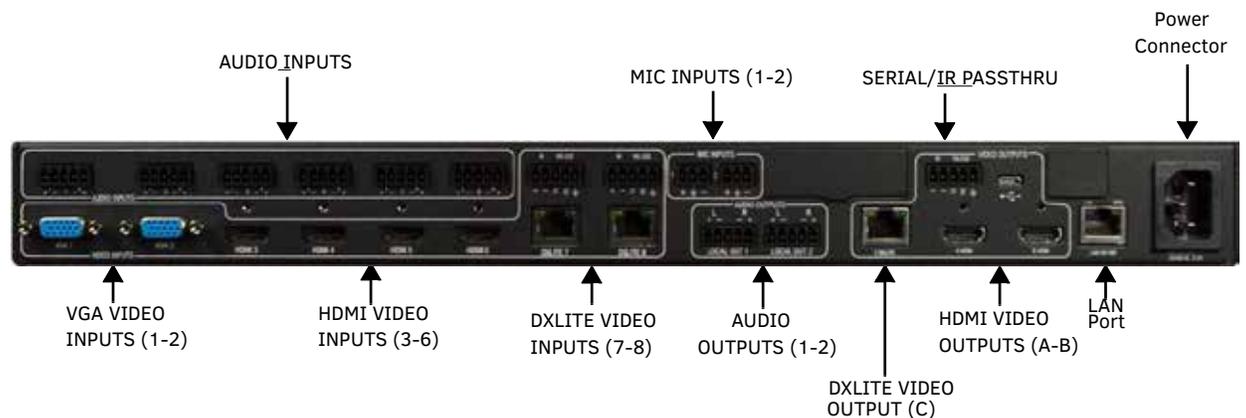
FIG. 7 NCITE-813 rear panel

The NCITE-813A features the same options on the rear panel as the NCITE-813 with the exception of also featuring 2 AMP OUT captive-wire connectors.

FIG. 8 displays the rear panel of the NCITE-813A.

FIG. 8 NCITE-813A rear panel

The NCITE-813AC features the same options on the rear panel as the NCITE-813A but also features several control ports including RS-232, RS-232/422/485, Relay, I/O, IR/Serial, AxLink, and ICSLAN ports.

FIG. 9 displays the rear panel of the NCITE-813AC.
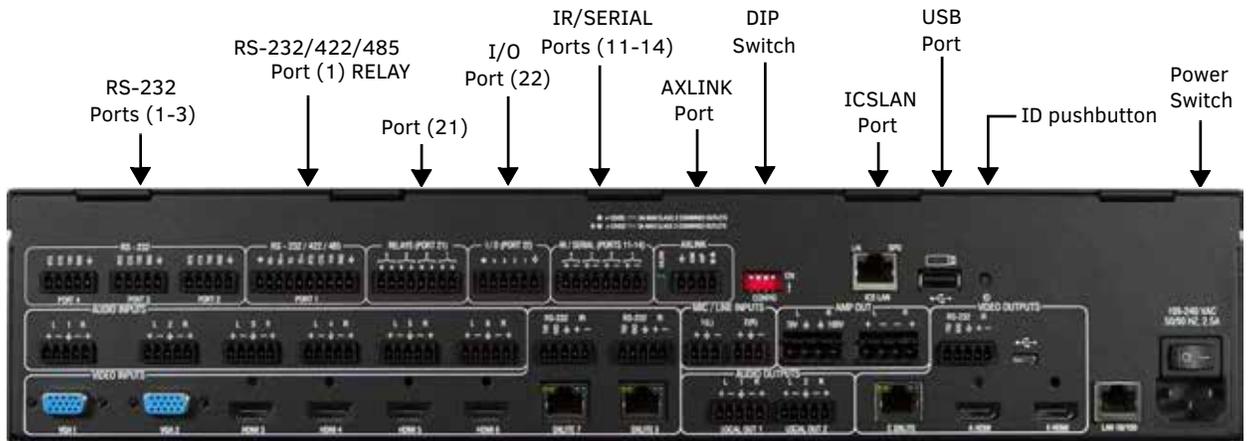
FIG. 9 NCITE-813AC rear panel

FIG. 10 displays the front panel of the NCITE-813AC:

FIG. 10 NCITE-813AC front panel

Front Panel Controls and Indicators

The following sub-sections describe each component on the front panel of the NCITE-813 units. Refer to FIG. 6 on page 26 for the component layout of the front panel.

LEDs (All NCITE units)

This section details the LEDs that appear on the front of all NCITE-813 units.

FIG. 12 displays the front panel LEDs for the NCITE-813:
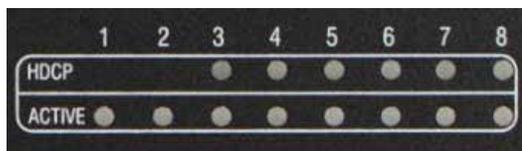
FIG. 11 Front Panel - HDCP and ACTIVE LEDs

LEDs (NCITE-813AC only)

This section details the LEDs that only are featured on the front panel of the NCITE-813AC.

FIG. 12 displays the front panel LEDs for the NCITE-813AC:
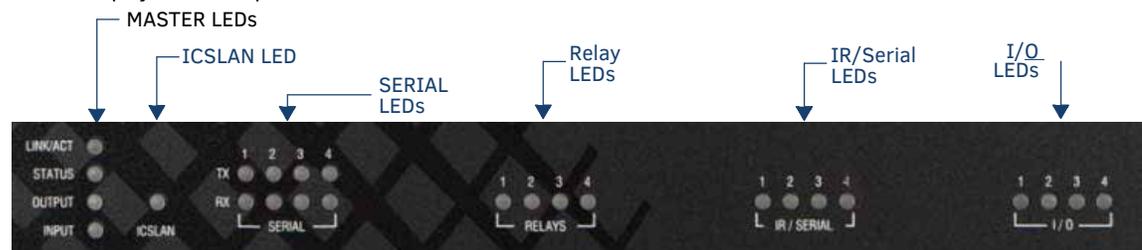
FIG. 12 Front Panel - LEDs

The LEDs on the front panel indicate the communications status of several different connections, as described in the following table:

Front Panel LEDs		
Label	Color	Description
LINK/ACT	green	Blinks when receiving LAN data packets.
STATUS	green	Blinks to indicate that the system is programmed and communicating properly.
OUTPUT	red	Blinks to indicate that the Controller is transmitting data.
INPUT	yellow	Blinks to indicate that the Controller is receiving data.
ICSLAN	red	Blinks when the category cable to port 1 is connected and terminated correctly. The LED also blinks when receiving LAN data packets.
SERIAL (1-4)	red/yellow	4 sets of LEDs indicate that the RS-232 ports (2-4) and RS-232/422/485 port (1) are transmitting or receiving data. Red = transmitting data Yellow = receiving data
RELAYS (1-4)	red	Lights to indicate that one or more of the relay channels (1-4) of port 21 are currently active (closed).
IR/SERIAL (1-4)	red	Lights to indicate that one or more of the IR/Serial channels (1-4) of ports 11-14 are currently transmitting control data.
I/O (1-4)	yellow	Lights to indicate that one or more of the I/O channels (1-4) of port 22 are currently active.

General Status LEDs

The General Status LEDs include the Link/Activity, Status, Output, and Input LEDs.

FIG. 13 displays the General Status LEDs on the NCITE-813AC.

FIG. 13 General Status LEDs

- Link/Act - Lights green when the link is up and toggles off when a data packet is sent or received.
- Status - Lights green and blinks once per second if the master is functioning normally and has established communication with a DHCP server.
- Output - Lights red when the controller transmits data
- Input - Lights yellow when the controller receives data

The following table lists the following special LED patterns for the Link/Act and Status LEDs:

LED Patterns		
Mode	Link/Act	Status
Normal	ON if connected to the Master, blinks off on receiving data	Blinks as instructed by NetLinx BLINK message. ON solid if offline with Master.
Normal Boot (DHCP found) **NOTE:** *This state continues from the time an IP address is obtained until the device is online with the Master.*	OFF	ON
Normal Boot (DHCP, no server) **NOTE:** *This state continues until a valid IP address is obtained.*	Fast Blink*, then normal operation	ON
Normal Boot (Static IP) **NOTE:** *This state continues until the device finishes the initialization sequence.*	OFF until connected to Master	Fast Blink (through initialization sequence), then ON until first blink from Master.
Boot with ID Pushbutton held down	Slow Blink (1Hz)	Slow Blink (1Hz)
ID Pushbutton held down long enough for reset to default parameters	Fast Blink* until ID Pushbutton is released, then OFF	Fast Blink* until ID Pushbutton is released, then OFF
ID Pushbutton held down long enough for reset to default firmware image	Solid ON, transitions to OFF once the unit completes writing to flash and is ready to reboot	Solid ON, transitions to OFF once the unit completes writing to flash and is ready to reboot
In Auto ID mode	Normal	Blink (2Hz)
ID Pushbutton held down long enough to accept new ID	2 Blinks, then normal	2 Blinks, then normal
After boot: ID Pushbutton held down, but not long enough for IP mode change	Slow Blink (1Hz)	Slow Blink (1Hz)
After boot: ID Pushbutton held down long enough for IP mode change	Fast Blink*, then OFF	Fast Blink*, then OFF
Downloading firmware	Fast Blink*, alternating with Status LED	Fast Blink*, alternating with Link/Act LED

ICSLAN LEDs
The ICSLAN LED lights green when there is an active link on the ICSLAN port. The light toggles off when a data packet is sent or received (see FIG. 14).

FIG. 14 ICSLAN LEDs

SERIAL LEDs
The SERIAL LEDs are two sets of LEDs which light to indicate that the RS-232 ports are transmitting or receiving RS-232, 422, or 485 data (red= TX, yellow = RX). The light toggles on when a data packet is sent or received. There are two sets of four SERIAL LEDs on the NCITE-813AC (see FIG. 15).
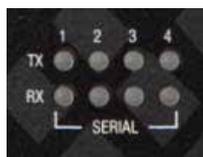
FIG. 15 SERIAL LEDs

RELAYS LEDs
The RELAYS LEDs light red to indicate that the corresponding relay port is active. The light toggles off when the relay port is not engaged. There are four RELAY LEDs on the NCITE-813AC (see FIG. 16).

FIG. 16 RELAYS LEDs

IR/SERIAL LEDs

The IR/SERIAL LEDs light red to indicate that the corresponding IR/Serial port is transmitting data. There are four IR/SERIAL LEDs on the NCITE-813AC (see FIG. 17).
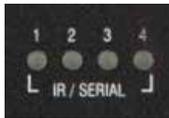
FIG. 17 IR/SERIAL LEDs

I/O LEDs

The I/O LEDs light yellow to indicate that the corresponding I/O port is active. There are four I/O LEDs on the NCITE-813AC (see FIG. 18).

FIG. 18 I/O LEDs

Video Input Selection (1-8)

The eight backlit Video Input Selection buttons (1-8) allow you to select an active video input (see FIG. 19).

FIG. 19 Video Input Selection

Each numbered VIDEO INPUT SELECTION button is associated with the corresponding numbered Input on the rear panel (refer to FIG. 7 on page 26):

Video Input Selection Options	
Video Input Selector	Corresponding Input Connector
Input 1	VIDEO INPUT 1 (VGA connector)
Input 2	VIDEO INPUT 2 (VGA connector)
Input 3	VIDEO INPUT 3 (HDMI connector)
Input 4	VIDEO INPUT 4 (HDMI connector)
Input 5	VIDEO INPUT 5 (HDMI connector)
Input 6	VIDEO INPUT 6 (HDMI connector)
Input 7	DXLITE VIDEO INPUT 7 (RJ-45 connector)
Input 8	DXLITE VIDEO INPUT 8 (RJ-45 connector)

Navigation Pushbuttons

The four directional navigation buttons (Left/Right/Up/Down) enable you to navigate through and adjust the configurable parameters shown on the On-Screen menu (OSM). The UP and DOWN navigation buttons are used to move between configurable parameters within a menu. Pressing UP takes you to the previous configuration parameter. Pressing DOWN takes you to the next configuration parameter. These buttons do not change the currently selected menu. The LEFT and RIGHT navigation buttons are used to change the setting of the displayed parameter. If the parameter is read-only the value cannot change. Pressing LEFT decreases the value displayed if the setting is numeric, or goes to the previously set item if the setting is a set selection. Pressing RIGHT increases the value displayed if the setting is numeric, or goes to the next set item if the setting is a set selection. These buttons do not change the currently selected menu. FIG. 20 displays the navigation pushbuttons.

Move up to next menu configuration parameter

Decrease value, or change the state of the selected parameter

Increase value, or change the state of the selected parameter

Move down to next menu configuration parameter
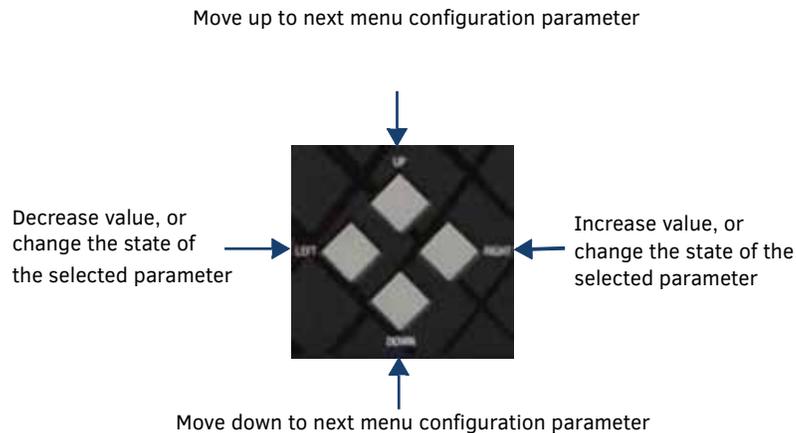
FIG. 20 Navigation Pushbuttons

MENU ON/OFF Pushbutton

Press the MENU ON/OFF pushbutton to access the SWITCH menu on the OSM. Press this button to configure the audio or video inputs and outputs.

FIG. 21 displays the MENU ON/OFF pushbutton.

FIG. 21 MENU ON/OFF Pushbutton

SELECT Pushbutton

Press the SELECT pushbutton to select and configure video or audio parameters. This button does not access the menus or change the currently selected menu. FIG. 22 displays the SELECT pushbutton.

FIG. 22 SELECT Pushbutton

VIDEO MUTE Pushbutton

Press the VIDEO MUTE button to enable or disable video on all output displays.

FIG. 23 displays the VIDEO MUTE pushbutton.

FIG. 23 VIDEO MUTE Pushbuttons
The pushbuttons light (red) to indicate that Video muting is active.

MODE Pushbutton

Press the MODE pushbutton is reserved for future use.

FIG. 24 displays the MODE pushbutton.

FIG. 24 MODE Pushbutton

Program Port (NCITE-813AC only)

The front panel of the NCITE-813AC features one Type-B USB port for connecting the controller to a PC via USB cable. The Program port uses a standard Type-A-to-Type-B USB cable to connect to a PC. When connected, you can view your NCITE-813AC among the listed Masters connected via USB in NetLinx Studio. See the Initial Configuration chapter in the *NX-Series Controllers WebConsole and Programming Guide* for more information.

FIG. 25 Program port

USB Port (NCITE-813AC only)

The front panel of the NCITE-813AC features one Type-A USB port you can use to connect a mass storage device for loading .tkn files, reading or writing configuration files and log files, or updating the firmware on the unit.

NOTE: *This USB port only supports a FAT32 file system.*

This USB port (FIG. 26) uses standard USB cabling to connect to any mass storage or peripheral devices.

FIG. 26 USB port

NOTE: *USB hubs are not supported on this port.*

Rear Panel Inputs and Outputs

The following sub-sections describe each component on the rear panel of the Digital Video Presentation Systems. Refer to FIG. 7 on page 26 for the component layout of the rear panel.

VIDEO INPUTS (1-8)

The VIDEO INPUTS area on the rear panel consists of eight video ports including 2 VGA ports, 4 HDMI ports, and 2 DXLITE ports. FIG. 27 displays the VIDEO INPUTS ports.

FIG. 27 VIDEO INPUTS ports

The following sections provide more details for each type of input port.

VGA INPUTS (1-2)

The NCITE-813AC features two HD-15 VGA connectors for RGBHV video input. These connectors are used to accept a variety of analog video signals from a source device. These ports support standard VGA cables and standard HD-15 to RCA component cables (**FG10-2170-03**). The following table provides cable pinout details for HD-15 connections for VGA, component, S-Video, and composite.

VGA INPUT Connector Cable Pinouts			
Input Pin #	VGA-RGBHV	Component	S-Video	Composite
1	Red	Pr	n/c	n/c
2	Green	Y	Y	Composite
3	Blue	Pb	C	n/c
4	n/c	n/c	n/c	n/c
5	GND	n/c	n/c	n/c
6	GND – Red	GND – Pr	n/c	n/c
7	GND – Green	GND – Y	GND – Y	GND – Composite
8	GND – Blue	GND – Pb	GND – C	n/c
9	+5 V DDC	n/c	n/c	n/c
10	GND	n/c	n/c	n/c
11	n/c	n/c	n/c	n/c
12	DDC_SDA	n/c	n/c	n/c
13	H Sync	n/c	n/c	n/c
14	V Sync	n/c	n/c	n/c
15	DDC_SCL	n/c	n/c	n/c

FIG. 28 displays the location of the pins for each VGA input.
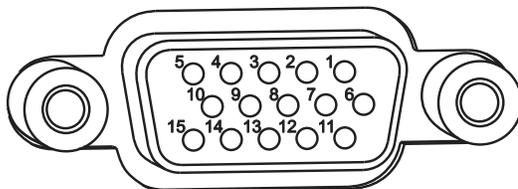
FIG. 28 Pinout table and HD-15 receptacle pins on NCITE-813AC

HDMI INPUTS (3-6)

The HDMI INPUT connectors on the rear panel are used to connect source input devices to the presentation system. The presentation system routes digital video and audio from connected source input devices to the connected output devices. These ports support HDMI (with Deep Color) and HDCP 2.2.

NOTE: *When an input sends protected content to a non-HDCP compliant monitor, the video output displays a black screen rather than a red screen as displayed via Enova DVX Presentation Switchers.*

These inputs support 2 CH L-PCM.

The following table describes the pinout configuration of the HDMI INPUTS connectors:

HDMI INPUT Connectors - Pinouts and Signals			
Pin	Signal	Pin	Signal
1	TMDS Data 2+	11	TMDS Clock Shield
2	TMDS Data 2 Shield	12	TMDS Clock-
3	TMDS Data 2-	13	CEC
4	TMDS Data 1+	14	Reserved, HEC Data
5	TMDS Data 1 Shield	15	SCL
6	TMDS Data 1-	16	SDA
7	TMDS Data 0+	17	DDC/CEC/HEC Ground
8	TMDS Data 0 Shield	18	+5V Power (max 50mA)
9	TMDS Data 0-	19	Hot Plug Detect, HEC Data+
10	TMDS Clock+		

FIG. 29 displays the pin locations for the HDMI pinouts:
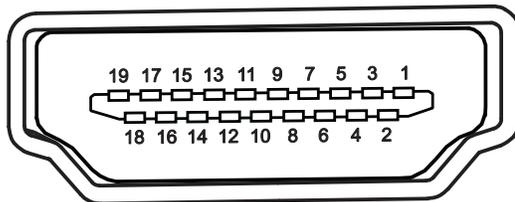
FIG. 29 HDMI pinouts

To connect HDMI input source devices (DVI and HDMI) to the HDMI INPUT connectors, the following (optional) adapter cables are required:

DVI Input Adapter Cables			
Name	Description	Length	FG#
HDMI Interface Cable	HDMI Male to HDMI Male	6 1/2' (2m)	FG10-2178-05
HDMI to DVI Cable	HDMI Male to DVI Male	6' (1.828m)	FG10-2179

DXLITE INPUTS (7-8)

Two DXLite (RJ-45) connectors transport digital video, embedded audio, and bi-directional control over twisted pair cable to DXLink devices or boards, including digitally transcoded analog video signals. Both inputs support HDCP 2.2.

NOTE: *When an input sends protected content to a non-HDCP compliant monitor, the video output displays a black screen rather than a red screen as displayed via Enova DVX Presentation Switchers.*

AUDIO INPUTS (1-6)

The AUDIO INPUTS connectors are 3.5 mm 5-position captive-wire terminals that can be wired for either balanced (differential) or unbalanced (single-ended) stereo audio. Since the NCITE allows independent switching of video and audio, video and audio inputs of the same number do not have to be connected to the same source equipment. These connectors feature the following specifications:

- Nominal input level: +4 dBu (1.228 Vrms) balanced or -10 dBu (0.3262 Vrms) unbalanced
- Maximum input level: 2 Vrms
- Input impedance: >12k ohms unbalanced, >12k ohms balanced, DC coupled FIG. 30 displays the AUDIO INPUTS connectors.

FIG. 30 AUDIO INPUTS connectors

Source devices require either balanced (differential) or unbalanced (single-ended) connections. FIG. 31 illustrates options for wiring between sources and input connectors. More than one option can be used in the same system.
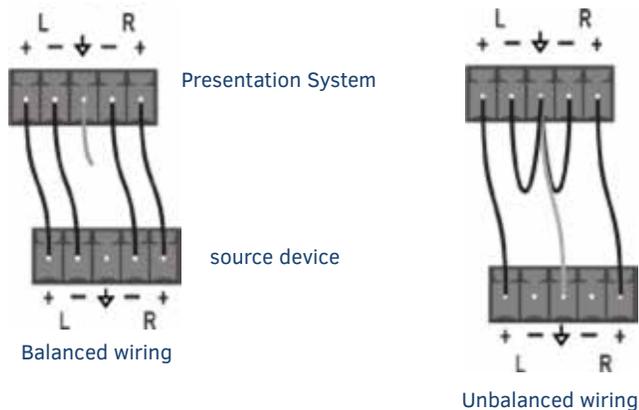
FIG. 31 Stereo 5-terminal wiring

FIG. 32 provides details for wiring from an audio input to a an unbalanced source device that has RCA connectors. Positive and ground wires connect to the source. You also can use a CC-3.5ST5-RCA2F 2 RCA Female to 5-Pin Phoenix Cable (**FG10-003-20**) for this type of connection.
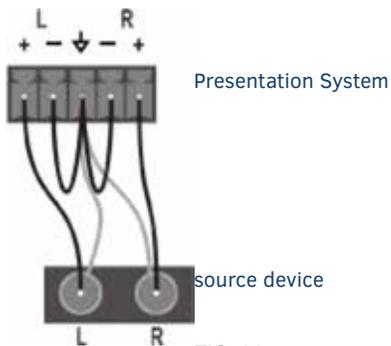
FIG. 32 RCA Stereo audio source wiring

CAUTION: Do not connect the negative terminals to the source connector. Doing so can cause damage to your device.

MIC/LINE INPUTS

Two 3.5mm 3-pin captive-wire MIC/LINE INPUT connectors allow up to two mono microphones to be connected to the presentation system. Each microphone input supports balanced and unbalanced audio. Each input supports up to 48V of phantom power.

FIG. 33 displays the MIC/LINE INPUTS connectors.
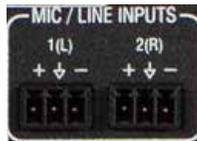
FIG. 33 MIC/LINE INPUTS

FIG. 34 illustrates wiring connections between the presentation system and a mono RCA output and an XLR output.

NCITE   NCITE

RCA output
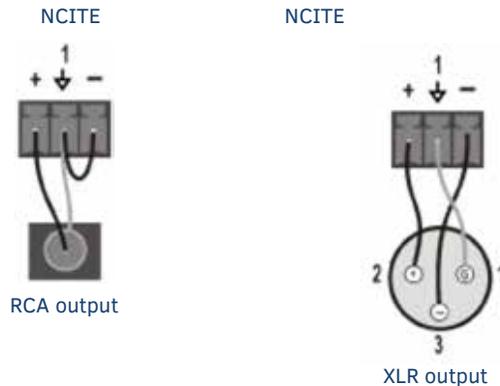
XLR output

FIG. 34 RCA (mono) and XLR output wiring

FOR INICTE VERSIONS WITH AMPLIFIER (FG1901-12, FG1901-16):

⚠ **CAUTION:** Never use shielded cable for output wiring.

⚠ **CAUTION:** Never connect the speaker return to the chassis of the Incite, or damage to the device may result.

⚠ **NOTE:** Custom wiring should only be performed by qualified personnel. Class 2 output wiring is required.

AMP OUT

The AMP OUT amplified audio outputs are available only on the NCITE-813A and NCITE-813AC, and each model offers two separate wiring options:

- The 4-position captive wire connector provides amplified, variable, mono or stereo audio output.
- The two 2-position captive wire connectors provide 70V or 100V mono amplified audio output. Connect a speaker to either the 70V or 100V terminal, but not both simultaneously. FIG. 35 displays the AMP OUT audio output.

FIG. 35 AMP OUT CLASS 2 WIRING Output

For standard 8-Ohm speaker loads, connect speakers to the AMP OUT output as displayed in FIG. 36.
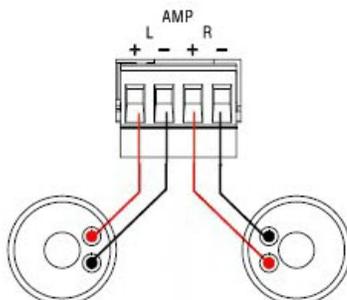
FIG. 36 Connecting speakers to the Amplified Audio output

For mono amplified output, connect a speaker to either the 70V or 100V terminals as displayed in FIG. 37.
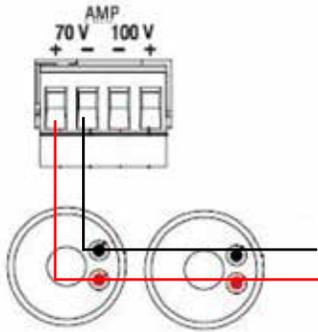
FIG. 37 Connecting speakers to the Amplified Audio output (-T models)

AUDIO OUTPUTS

The Line Level audio outputs (ports 1-2) provide balanced or unbalanced, mono or stereo line-level audio output.

FIG. 38 displays the AUDIO OUTPUTS connectors,
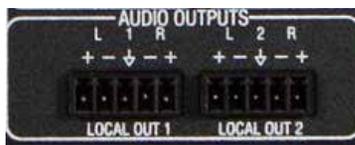
FIG. 38 AUDIO OUTPUTS

Destination devices require either balanced (differential) or unbalanced (single-ended) connections. FIG. 39 illustrates options for wiring between output connectors and the destinations.

destination device

NCITE

Balanced wiring

Unbalanced wiring
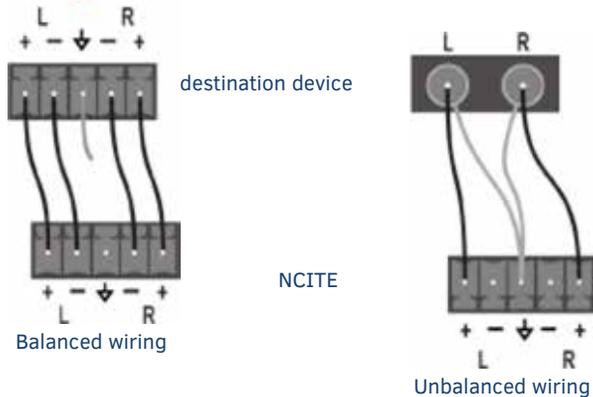
FIG. 39 Stereo 5-terminal wiring

CAUTION: Do not connect the negative terminals to the source connector. Doing so can cause damage to your device.

Rear Panel Control and Power (NCITE-813AC only)

The following sub-sections describe the control and power components on the rear panel of the NCITE-813AC. These compo-
nents are not featured on the NCITE-813 or NCITE-813A. Refer to FIG. 9 on page 27 for the component layout of the rear panel.

Serial Ports

The NCITE-813AC features device control serial ports that support either RS-232 or RS-232, RS-422, and RS-485 communication
protocols. Each port supports the following specifications:

- XON/XOFF (transmit on/transmit off)
- CTS/RTS (clear to send/ready to send)
- 300-115,200 baud rate

RS-232 Ports

The RS-232 ports (ports 2-4 on the NCITE-813AC) are 5-pin 3.5 mm male connectors used for connecting
A/V sources and displays. These ports support most standard RS-232 communication protocols for data transmission.

FIG. 40 displays the RS-232 ports for the NCITE-813AC.

FIG. 40 RS-232 ports

The following table lists the pinouts for the RS-232 ports.

RS-232 Port Pinouts	
Pin 1	GND
Pin 2	RXD
Pin 3	TXD
Pin 4	CTS
Pin 5	RTS

In the above table, pin 1 is located on the right side of the port, and the pinouts count up to the left.

RS-232/422/485 Port

The RS-232/422/485 port (port 1) is a 10-pin 3.5 mm male connector used for connecting A/V sources and displays. This port
can be used as a RS-232 port by disabling RS-422 and RS-485 on the ports. By default, RS-422 and RS-485 are disabled on this
port. Only with RS-422/485 disabled will the ports operate as RS-232. See the SET BAUD command and the TSET BAUD com-
mand in the NetLinx Programming chapter of the NX-Series Controllers WebConsole and Programming Guide for more information
on enabling and disabling RS-422 and RS-485 on these ports. These ports support most standard RS-232, RS-422, and RS-485
communication protocols for data transmission.

FIG. 41 displays the RS-232/422/485 port for the NCITE-813AC.

FIG. 41 RS-232/422/485 ports

The following table lists the pinouts for the RS-232/422/485 port.

RS-232/422/485 Port Pinouts	
Pin 1	GND (used in RS-232 and RS-422)
Pin 2	RXD (used in RS-232)
Pin 3	TXD (used in RS-232)
Pin 4	CTS (used in RS-232)
Pin 5	RTS (used in RS-232)
Pin 6	TX+ (used in RS-422 and RS-485)
Pin 7	TX- (used in RS-422 and RS-485)
Pin 8	RX+ (used in RS-422 and RS-485)
Pin 9	RX- (used in RS-422 and RS-485)
Pin 10	+12V

In the above table, pin 1 is located on the right side of the port, and the pinouts count up to the left.

Relay Port

The relay port (port 21 on the NCITE-813AC) is an 8-pin 3.5 mm male connector used for connecting external relay devices. You can connect up to 4 independent external relay devices on the NCITE-813AC. When a relay is "OFF", terminals A and B are open-circuit. When a relay is "ON", terminals A and B are shorted together.

Relay Connections

Use connectors A for common and B for output (FIG. 42). Each relay is isolated and normally open.

A metal connector strip is also provided to common multiple relays.
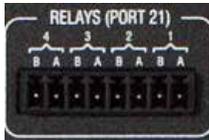
FIG. 42 RELAY connector (male)
- 8-channel single-pole single-throw relay ports
- Each relay is independently controlled
- Supports up to 4 independent external relay devices
- Channel range = 1-8
- Each relay can switch up to 24 VDC or 28 VAC peak @ 1 A
- One 8-pin 3.5mm male connector provides relay termination

I/O Port

The I/O port (port 22 on the NCITE-813AC) is a 6-pin 3.5 mm male connector used for connecting logic-level outputs. The I/O port responds to either switch closures, voltage level (high/low) changes, or it can be used for logic-level outputs.
Each port is capable of being used as an input or an output.

FIG. 43 displays the I/O port for the NCITE-813AC.

FIG. 43 I/O ports
- A contact closure between the GND and an I/O port is detected as a Push.
- When used for voltage inputs, the I/O port detects a low signal (0 - 1.5 VDC) as a Push, and a high signal (3.5 - 5 VDC) as a Release. (This I/O port uses 5V logic but can handle up to 12V without harm).
- When used for outputs, the I/O port acts as a switch to GND and is rated for 200mA @ 12 VDC.
- The NCITE-813AC can use up to 4 I/O ports
- The PWR pin provides +12 VDC @ 200 mA and is designed as a power output for the PCS Power Current Sensors, VSS2 Video Sync Sensors (or equivalent).
- The GND connector is a common ground and is shared by all I/O ports. A common ground is shared with I/O ports 1-4.
- The input impedance on the I/O port is 22k.

I/O Port Wiring Specifications		
Pin	Signal	Function
1	GND	Signal GND
2	I/O 1	Input/Output
3	I/O 2	Input/Output
4	I/O 3	Input/Output
5	I/O 4	Input/Output
6	12 VDC	PWR

In the above table, pin 1 is located on the right side of the port, and the pinouts count up to the left.

IR/SERIAL Port: Connections and Wiring

The IR/SERIAL ports provide IR transmit/one-way serial connections that support high-frequency carriers up to 1.142 MHz. You can simultaneously generate up to four IR/Serial data signals on the NCITE-813AC.

These ports accept an IR Emitter (CC-NIRC) that mounts onto the device's IR window, or a mini-plug (CC-NSER) that connects to the device's control jack. You can also connect a data 0 - 5 VDC device to these ports. FIG. 44 displays the IR/SERIAL ports for the NCITE-813AC.

FIG. 44 IR/SERIAL connector (male)

NOTE: *The maximum baud rate for ports using DATA mode is 19200. Also, DATA mode works best when using a short cable length (< 10 feet).*

NOTE: *For each data signal, the negative (-) terminal is for Signal GND, and the positive (+) terminal is for IR/Serial data.*

The IR/Serial connector wiring specifications are listed in the following table.

IR/SERIAL Connector Wiring Specifications (per Port)	
Signal #	NCITE-813AC Port #
1	11
2	12
3	13
4	14

AxLink Port and LED (4-pin captive-wire)

The AxLink port allows the central controller to support AMX AxLink devices.

FIG. 45 displays the AXLINK port for the NCITE-813AC.

FIG. 45 AxLink Ports and LEDs

The (green) AxLink LED indicates AxLink data activity:

- **Off** - No power, or the controller is not functioning properly.
- **1 blink per second** - Normal operation.
- **3 blinks per second** - AxLink bus error. Check all AxLink bus connections.

The AxLink port can be used to supply power to downstream AxLink-compatible devices as long as the maximum current draw is less than 0.5 Amps on the NCITE-813AC. To isolate the central controller from high in-rush current, AxLink devices, or potential power faults on the AxLink bus, it is strongly recommended that you power external AxLink devices from an independent power supply.

NOTE: *The AxLink port provides only limited power to connected AxLink devices. It is recommended to use an alternate power source when connecting AxLink devices to the central controller.*

IMPORTANT: *The NCITE-813AC CANNOT be powered via the AxLink port. The +12V pin on the AxLink connectors are designed only for voltage output. Do NOT connect +12V from a power supply or the NXA-PDU to the +12V pin on the AxLink connectors, or you may permanently damage the NCITE-813AC and/or the power supply.*

Refer to the following table for the wiring length information used with the AxLink port:

Wiring Guidelines	
Wire size	Maximum wiring length
18 AWG	154.83 feet (47.19 meters)
20 AWG	98.30 feet (29.96 meters)
22 AWG	63.40 feet (19.32 meters)
24 AWG	38.68 feet (11.79 meters)

FIG. 46 provides wiring requirements for the AxLink connector:
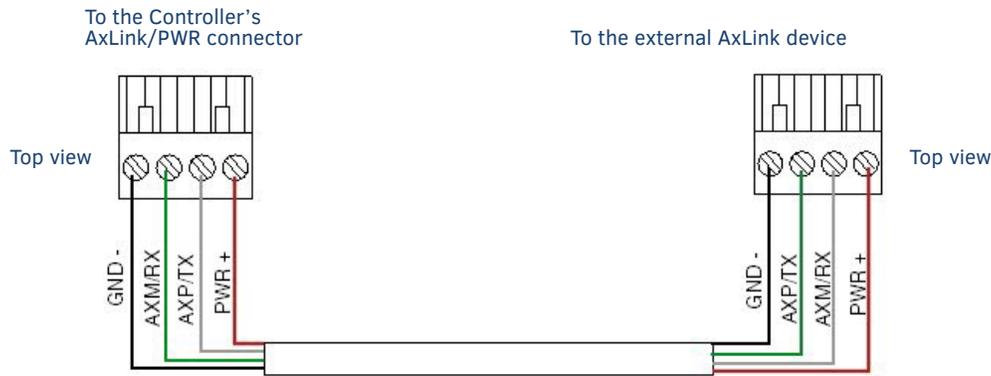
FIG. 46 Mini-Phoenix connector wiring diagram (direct data and power)

To use the 4-pin 3.5 mm mini-Phoenix (male) captive-wire connector for data communication and power transfer, the incoming PWR and GND cable from the 12 VDC-compliant power supply must be connected to the AxLink cable connector going to the central controller. FIG. 47 shows the wiring diagram:
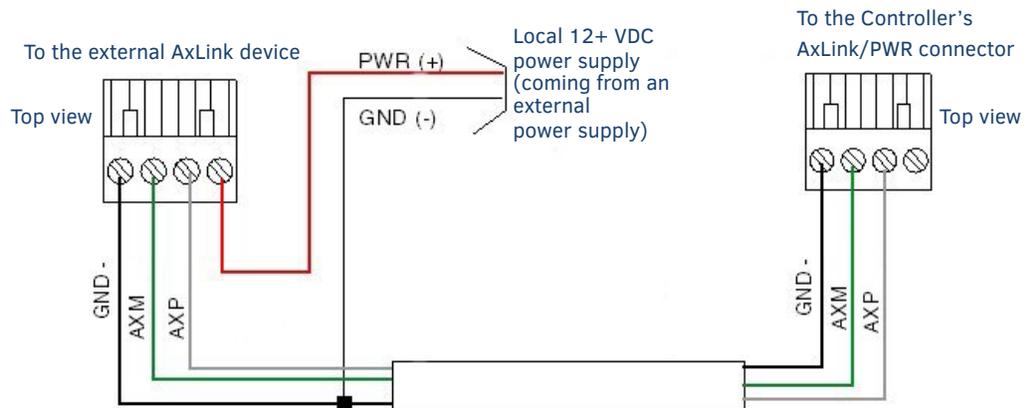
FIG. 47 4-pin mini-Phoenix connector wiring diagram (using external power source)

CAUTION: When you connect an external power supply, do not connect the wire from the PWR terminal (coming from the external device) to the PWR terminal on the Phoenix connector attached to the Controller unit. Make sure to connect only the AXM, AXP, and GND wires to the Controller?s Phoenix connector when using an external power supply.

Make sure to connect only the GND wire on the AxLink/PWR connector when using a separate 12 VDC power supply. Do not connect the PWR wire to the AxLink connector's PWR (+) opening.

Configuration DIP Switch

The NCITE-813AC has a configuration DIP switch which allows for certain operations to occur during boot-time. FIG. 48 displays the Configuration DIP Switch for the NCITE-813AC.

FIG. 48 Configuration DIP Switch

Program Run Disable (PRD) Mode

You can use the Configuration DIP switch to set the on-board Master to Program Run Disable (PRD) mode. PRD mode prevents the NetLinx program stored in the on-board Master from running when you power up the Integrated Controller. You should only use PRD mode when you suspect the resident NetLinx program is causing inadvertent communication and/or control problems.

If necessary, place the on-board Master in PRD mode and use the NetLinx Studio program to resolve the communication and/or control problems with the resident NetLinx program. Then download the new NetLinx program and try again. FIG. 49 displays the default DIP switch settings and the settings for PRD mode. To switch to PRD mode, move the position 1 DIP switch to ON.

Default mode   PRD mode
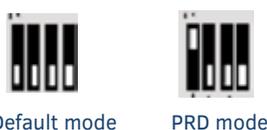
FIG. 49 DIP Switch settings - PRD mode

NOTE: *Consider equating PRD Mode to a PC?s SAFE Mode setting. With PRD mode, you can continue to power a unit, update the firmware, and download a new program while circumventing any problems with a currently downloaded program. You must power cycle the unit after activating/deactivating PRD mode on Program Port DIP switch #1.*

ICSLAN Port

The NCITE-813AC has two types of Ethernet ports: LAN and ICSLAN. The LAN port is used to connect the master to an external network, and the ICSLAN port is used to connect to other AMX equipment or third-party A/V equipment. The ICSLAN port provides Ethernet Communication to connected AMX Ethernet Equipment in a way that is isolated from the primary LAN connection.

The ICSLAN port is a 10/100 Port RJ-45 connector and Auto MDI/MDI-X enabled. The NCITE-813AC features one port. The port supports IPv4 and IPv6 networks, as well as HTTP, HTTPS, Telnet, and FTP.

FIG. 50 ICSLAN port

The ICSLAN port gets its IP addresses in one or more of the following ways:

- IPv4 - Static assignment of the subnetwork address by the user
- IPv6 - Link local address

Using the ICSLAN Network

The default IP address for the ICSLAN network is 198.18.0.1 with a subnet mask of 255.255.0.0.

It is important that the ICSLAN and LAN subnets do not overlap. If the LAN port is configured such that its address space overlaps with the ICSLAN network, the ICSLAN network will be DISABLED.

NOTE: *Typically, the NCITE-813AC communicates with an A/V switcher via ICSLAN. Since the A/V switcher has a static IP address on the ICSLAN network, and you cannot change the IP address on the switcher, you cannot change the 198.18 subnet information on the NCITE-813AC platform of processors. You can only change the Host name and DHCP server settings.*

DHCP Server

The ICSLAN port has a built-in DHCP server. This DHCP server is enabled by default and will serve IP addresses to any connected devices set to DHCP mode.

The DHCP server can be disabled from telnet with the command:

```
SET ICSLAN
```

The DHCP address range is fixed. The server will provide addresses in the range x.x.0.2 through x.x.63.255.

Devices using static IP addresses on the ICSLAN network should be set within the reserved static IP address range of x.x.64.1 to x.x.255.255.

Opening LAN and ICSLAN Sockets from Code

When opening sockets from NetLinx or Java code there is no mechanism to indicate which network to use. The controller will open the socket on whichever network has an IP subnet that matches the address provided in the command to open the socket. There is no indication which network was used, only whether the socket was created successfully.

USB Port

The NCITE-813AC features one Type-A USB port you can use to connect a mass storage device for loading .jar files and IR data files (.irl), reading or writing configuration files and log files, or updating the firmware on the unit.

NOTE: *This USB port only supports a FAT32 file system.*

This USB port (FIG. 51) uses standard USB cabling to connect to any mass storage or peripheral devices.

FIG. 51 USB port

NOTE: *USB hubs are not supported on this port.*

ID Pushbutton

The NCITE-813AC features an ID pushbutton which you can use to toggle between static and dynamic IP addressing. You can also use the pushbutton to reset the default settings on the controller or restore the controller to its factory firmware image.

FIG. 52 displays the ID pushbutton for the NCITE-813AC.

FIG. 52 ID pushbutton

Switching to Static or Dynamic IP Addressing

To toggle between static or dynamic IP addressing, the controller cannot be currently booting or it must be in ID Mode. If these conditions are met, holding the ID pushbutton for 10 seconds toggles the current IP addressing mode between static and dynamic IP addressing.

Restoring the Controller Settings to the Factory Defaults

To restore the controller settings to the factory defaults, the controller must be currently booting and you must press the ID pushbutton for 10 seconds. The controller is booting when the System and Input LEDs are both ON and the Output LED is OFF. This includes resetting the static IP address to its default and deleting the NetLinx program.

NOTE: *The presentation system cannot detect a press of the ID pushbutton until 30 seconds into the booting process. While booting the unit, any ID pushbutton presses before 30 seconds have elapsed are not detected. You can verify the unit has detected a button press when the front panel LEDs begin to flash at one second intervals.*

CAUTION: *Pressing the ID pushbutton for 20 seconds restores the factory firmware image on the controller. Do not press the pushbutton significantly longer than the necessary 10 seconds if you only want to restore the default settings on the controller.*

Restoring the Controller's Factory Firmware Image

To restore the controller's factory firmware image, the controller must currently be booting and you must press the ID pushbutton for 20 seconds. This also deletes all code and IRL files.

NOTE: *The presentation system cannot detect a press of the ID pushbutton until 30 seconds into the booting process. While booting the unit, any ID pushbutton presses before 30 seconds have elapsed are not detected. You can verify the unit has detected a button press when the front panel LEDs begin to flash at one second intervals.*

LAN 10/100 Port

The NCITE-813 features a LAN 10/100 port to provide 10/100 Mbps communication via Category cable. This is an Auto MDI/MDI-X enabled port, which allows you to use either straight-through or crossover Ethernet cables. The port support IPv4 and IPv6 networks, as well as HTTP, HTTPS, SSH, and FTP.

The LAN port automatically negotiates the connection speed (10 Mbps or 100 Mbps), and whether to use half duplex or full duplex mode.

FIG. 53 displays the LAN port for the NCITE-813.

FIG. 53 LAN 10/100 port

FIG. 54 provides the pinouts and signals for the LAN connector and cable.
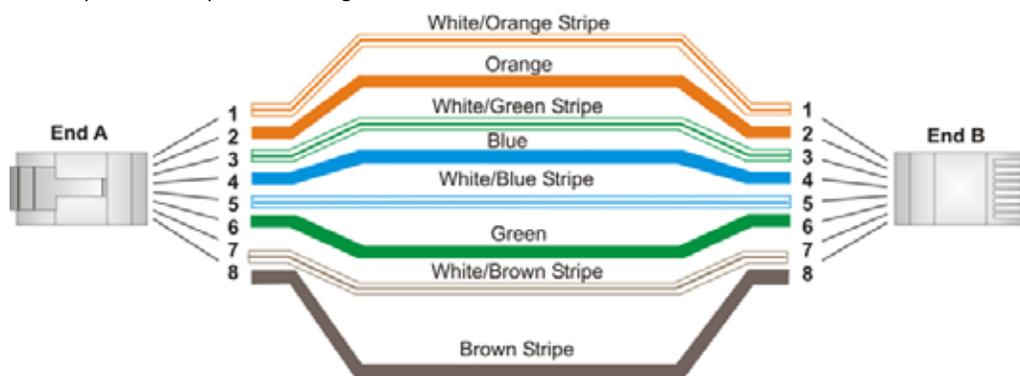
FIG. 54 RJ-45 wiring diagram

FIG. 55 describes the blink activity for the LAN connector and cable.

L/A - Activity LED (green) lights when receiving or transmitting LAN data packets

SPD - Link LED (amber) lights when connected; it does not differentiate between the two speeds.
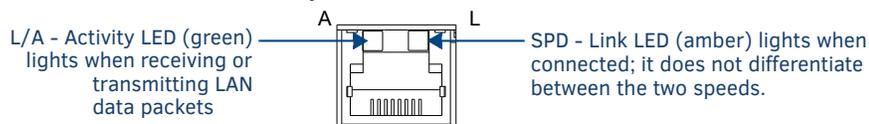
FIG. 55 LAN connector / LEDs

The LAN port gets its IP address(es) in one or more of the following ways:

IPv4
- Static assignment by the user
- Dynamic assignment by an IPv4 DHCP server
- Link local as a fall back when configured for DHCP but unable to successfully obtain an address

IPv6
- Link local address
- Prefix(es) assigned by a router

Power Connector/Switch

FIG. 56 displays the power switch and connector for the NCITE-813AC.
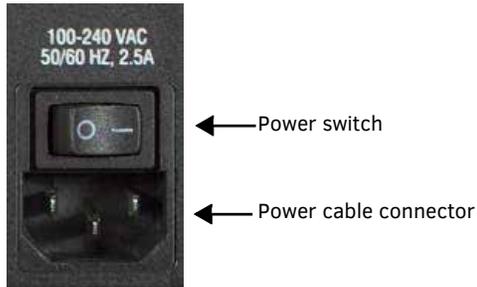
FIG. 56 Power Connector/Switch/Fuse

CAUTION: *This unit should only have one source of incoming power. Using more than one source of power to the device can result in damage to the internal components and a possible burn out. Apply power to the unit only after installation is complete.*

Audio/Video Configuration

Overview

You can access the configuration settings for the Digital Video Presentation System by using one of the following methods:

- Using the on-screen menu
- Using the WebConsole via a Web browser (see page 52)

Using the On-Screen Menu

You can access the configuration settings for the presentation system by using the MENU ON/OFF button on the front panel of the device. FIG. 57 displays the on-screen menu.
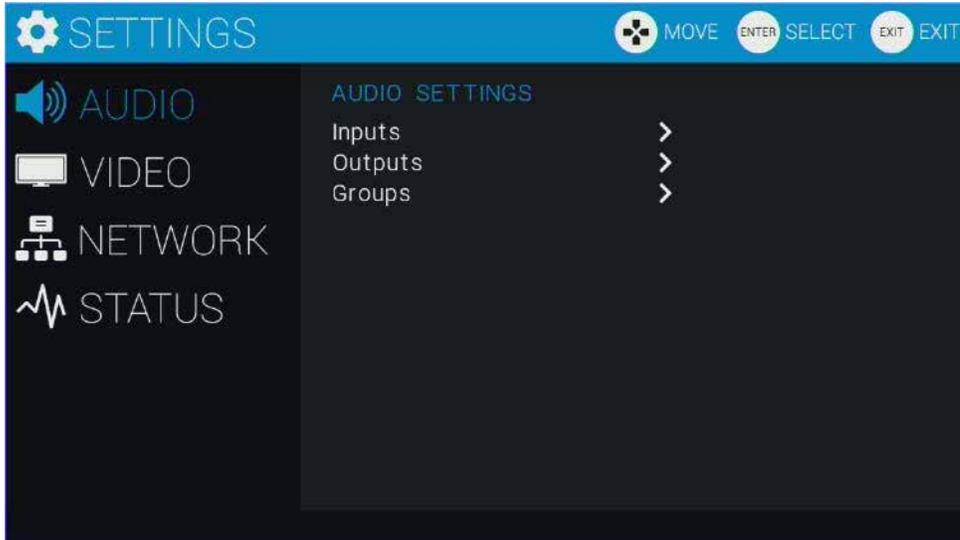
FIG. 57 On-Screen menu

Use the Navigational buttons to traverse the available configuration parameters and change their settings. FIG. 58 displays the navigational function of each button.

Move up to next menu configuration parameter

Decrease value, or change the state of the selected parameter

Increase value, or change the state of the selected parameter

Move down to next menu configuration parameter
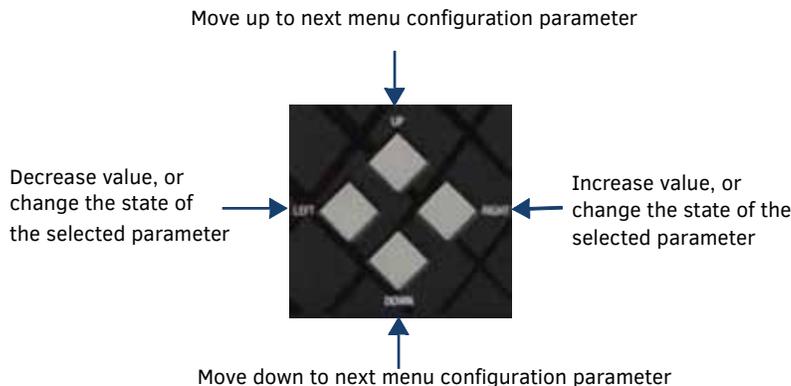
FIG. 58 Navigation buttons

Press the SELECT pushbutton to select the highlighted setting on the on-screen menu and use the navigational buttons to peruse the available options for that setting or increase/decrease the value of the setting.

When navigating the on-screen menu, you can change the setting of any option that appears blue when highlighted. Any option that appears gray cannot be altered. Any option featuring a guillemet (>) indicates that the option contains one or more sub-options. Use the right navigational button to view the sub-options. Pressing the MENU ON/OFF button a second time closes the on-screen menu.

NOTE: *The on-screen menu may appear pixelated when downscaling video at lesser resolutions.*

Audio Settings

Press the MENU ON/OFF button on the front panel of the presentation system to access the on-screen menu and the Audio settings. The Audio settings appear as default when you access the on-screen menu. The following table lists the audio options available for inputs on the on-screen menu:

Audio Settings - Inputs Menu Options	
INPUTS/OUTPUTS 1-8	
Input Name	Displays the name of the audio input. This option is view-only.
Stereo	Use the left and right navigational buttons to select a group of preset equalizer settings. You can choose from Enable or Disable.
Input Gain	Use the left and right navigational buttons to adjust the gain/attention level of the audio input. You can set the gain from -24 to +24dB in 1dB increments. The default setting is 0.
Analog Audio	Use the left and right navigational buttons to change the audio format of the selected audio input. You can choose from Enable or Disable.
Test Tone Enable	Use the left and right navigational buttons to enable or disable the test tone set for the selected audio output. This option is only available for audio outputs.
Test Tone Generator	Use the left and right navigational buttons to select a test tone for the selected audio output. You can choose from Off, 60Hz, 250Hz, 400Hz, 1kHz, 3kHz, 5kHz, 10kHz, Pink Noise, and White Noise. This option is only available for audio outputs.
MICROPHONE	
Mic Mode	Use this option to switch between Single Stereo and Dual Mono microphone modes. Select Single Stereo to adjust both microphone inputs or Dual Mono Mode to adjust the microphone settings individually. See the Changing the Microphone Mode section on page 47 for information on how to the change the microphone mode.
Single Stereo	Use the left and right navigational buttons to set the mix level of microphone 1 in the overall mix. You can set the mix level from 0 to -100. The default setting is 0.
Enable	Use the left and right navigational buttons to toggle whether the selected microphone is active. You can choose from Off or On. The default setting is Off.
Phantom Power	Use the left and right navigational buttons to turn on or turn off phantom power for the selected microphone. You can set the Phantom Power to On or Off. The default setting is Off.
Preamp Gain	Use the left and right navigational buttons to adjust the preamp gain level of the microphone input. You can set the gain from 0 to +65dB in 1dB increments. The default setting is 0.
Dual Mono	Use the left and right navigational buttons to adjust the maximum volume of the audio output. You can set the maximum volume from 0 to 100 in increments of 1. The default value is 100.
Enable	Use the left and right navigational buttons to toggle whether the selected microphone is active. You can choose from Off or On. The default setting is Off.
Phantom Power	Use the left and right navigational buttons to turn on or turn off phantom power for the selected microphone. You can set the Phantom Power to On or Off. The default setting is Off.
Preamp Gain	Use the left and right navigational buttons to adjust the preamp gain level of the microphone input. You can set the gain from 0 to +65dB in 1dB increments. The default setting is 0.

The following table lists the audio options available for inputs on the on-screen menu:

Audio Settings - Outputs Menu Options	
OUTPUTS 1-8	
Output Name	Displays the name of the audio output. This option is view-only.
Volume	Use the left and right navigational buttons to adjust the volume level of the audio output. You can set the level from 0 to -100.
Mute	Use the left and right navigational buttons to enable or disable volume muting on the audio output.
Test Tone Enable	Use the left and right navigational buttons to enable or disable the test tone set for the selected audio output.
Test Tone Generator	Use the left and right navigational buttons to select a test tone for the selected audio output. You can choose from Off, 60Hz, 250Hz, 400Hz, 1kHz, 3kHz, 5kHz, 10kHz, Pink Noise, and White Noise.
Audio Group	Displays the audio group this to which the audio output belongs.
Amp	The options below appear when you press the right navigation button while this option is highlighted.
Volume	Use the left and right navigational buttons to adjust the volume level of the amplifier. You can set the level from 0 to -100.
Mute	Use the left and right navigational buttons to enable or disable volume muting on the amplifier.
Test Tone Enable	Use the left and right navigational buttons to enable or disable the test tone set for the selected audio output.

Audio Settings - Outputs Menu Options (Cont.)	
Test Tone Gener ator	Use the left and right navigational buttons to select a test tone for the selected audio output. You can choose from Off, 60Hz, 250Hz, 400Hz, 1kHz, 3kHz, 5kHz, 10kHz, Pink Noise, and White Noise.
Audio Group	Displays the audio group this to which the amplifier belongs.

Using the WebConsole, you can create a group of several different audio inputs and outputs and collectively adjust specific settings for the entire group. The following table lists the audio group options available on the on-screen menu.

Audio Settings - Groups Menu Options	
Mix	The options below appear when you press the right navigation button while this option is highlighted.
Input	Use the left and right navigational buttons to adjust the mix level of the audio input for the audio group. You can set the level from 0 to -100.
Microphone 1	Use the left and right navigational buttons to adjust the mix level of microphone 1 for the audio group. You can set the level from 0 to -100.
Microphone 2	Use the left and right navigational buttons to adjust the mix level of microphone 2 for the audio group. You can set the level from 0 to -100.
Format	Use the left and right navigational buttons to change the audio format of the selected audio input. You can set the audio format to Stereo or Mono. The default setting is Stereo.
Stereo Output Options	The options below appear when you press the right navigation button while this option is highlighted.
Mute	Use the left and right navigational buttons to mute the audio on all devices in the group.
Volume	Use the left and right navigational buttons to adjust the volume levels for all devices in the group.
Balance	Use the left and right navigational buttons to adjust the balance level of the selected audio output. You can set the balance level from -20 to +20. The default value is 0.
Sync Delay	Use the left and right navigational buttons to set the number of milliseconds to delay the audio. You can set the delay between 0 to 200 milliseconds. The default value is 32.
Mono Output Options	The options below appear when you press the right navigation button while this option is highlighted.
Mute	Use the left and right navigational buttons to mute the audio on all devices in the group.
Volume	Use the left and right navigational buttons to adjust the volume levels for all devices in the group.
Adv. Sup. Feedback	Use the left and right navigational buttons to enable or disable Advanced Suppression Feedback for the audio group.

Selecting an Audio Test Tone

Selecting a test tone for your input source can help determine if you have your audio devices connected correctly. Perform these steps to select a test tone:

1. Press the **MENU ON/OFF** button on the front panel of the presentation system to open the On-Screen menu.

2. With **AUDIO** highlighted, press the right navigational button to view the audio options.

3. Press the down navigational button to select the audio device you want, then press the right navigational button to view its options.

4. Press the down navigational button to select **OUTPUTS**, then press the right navigational button to view its options.

5. Press the down navigational button to highlight the **Test Tone Generator** option.

6. Press the **SELECT** button on the front panel and use the left and right navigational buttons to scroll through the available test tones. Press **SELECT** again when you see the test tone you want.

7. Press the up navigational button to highlight the **Test Tone Enable** option.

8. Press the **SELECT** button on the front panel and use the left and right navigational buttons to enable the test tone.

Changing the Microphone Mode

Perform these steps to change the microphone mode:

1. Press the **MENU ON/OFF** button on the front panel of the device.

2. With the Audio Settings highlighted, press the right arrow button one time to access the Audio settings menu.

3. Press the down arrow button until the Microphone option is highlighted, then press the right arrow button to access the Microphone options.

4. With Mic Mode selected, press the SELECT button and use the left and right arrow buttons to toggle between Single Stereo and Dual Mono microphones.

5. Press the SELECT button to accept the option you want.

Video Settings

Press the MENU ON/OFF button on the front panel of the presentation system to access the on-screen menu and the Video settings. When the on-screen menu appears, use the DOWN navigational button to access the Video settings. The following table lists the video options available on the on-screen menu:.

Video Settings Options	
INPUTS 1-8	
Input Name	The name of the video input. This information is view-only. You can change the input name by using the WebConsole. **NOTE:** The maximum number of characters allowed for the input name is 32, however, longer names may not be viewable on the OSD. To keep the input name from appearing truncated, the input name should be a maximum of 18 characters.
Format	The analog format for the video input. You can choose from Stereo or Mono. This information is view-only.
Resolution	The current video resolution and refresh rate for the selected video input. For a complete list of output resolutions, see the DVI and HDMI Supported Output Resolutions section on page 137. This information is view-only.
EDID Mode	The type of EDID data to be sent to the source or which output's EDID you would like to mirror to that source. This information is view-only.
Preferred EDID	The type of EDID data to be sent to the source or which output's EDID you would like to mirror to that source. This information is view-only.
HDCP Compliance	Use the left and right navigational buttons to activate HDCP compliance on the selected input. HDCP compliance is active by default.
More Info	The options below appear when you press the right navigation button while this option is highlighted.
Color Space	This option lists the color space on the video input. This option is view-only
VIC	This option lists the VIC on the video input. This option is view-only
V Freq	This option lists the video frequency on the video input. This option is view-only
PIP	This option lists whether the input is part of a Picture-in-Picture (PIP) setup. This option is view-only.
Color Depth	This option lists the color depth on the video input. This option is view-only
Pixel Clock	This option lists the pixel clock on the video input. This option is view-only
OUTPUTS	
Scaler Setup	Press the right navigational button to access the options for Picture Settings, Scaling Mode, Resolution, and Aspect Ratio.
Picture Settings	The options below appear when you press the right navigation button while this option is highlighted.
Brightness	Use the left and right navigational buttons to alter the brightness level adjustment applied to all outputs. You can set the brightness level from 0-100. The default setting is 50.
Contrast	Use the left and right navigational buttons to alter the contrast level adjustment applied to all outputs. You can set the contrast level from 0-100. The default setting is 50.
Scaling Mode	Indicates whether the output image is scaled. This information is view-only.
Resolution	The resolution and refresh rate of the selected output. For a complete list of output resolutions, see the DVI and HDMI Supported Output Resolutions section on page 137. This information is view-only.
Aspect Ratio	Indicates the aspect ratio and is set to one of the following options: • MAINTAIN: Maintains the input aspect ratio while filling the screen either vertically or horizontally. Black bars may appear above and below or to the left and right of the image. • STRETCH: Ignores the input aspect ratio and stretches the image to fill the screen in all directions. • ZOOM: Maintains the input aspect ratio while zooming the image to fill the screen in all directions. Image data may be lost on the top and bottom or to the left and right of the displayed image. • ANAMORPHIC: Use with anamorphic formatted video sources so that images appear correctly on the display. This information is view-only.

Video Settings Options (Cont.)

General Setup	Press the right navigational button to access the options for OSD, Video Transition, and Blank/Color Logo.
OSD	Press the right navigational button to access the options for OSD.
Enable OSD	Use the left and right navigational buttons to toggle whether you want the On-Screen Display (OSD) overlay to be turned on or off. You can choose from Enabled or Disabled. When enabled, the input name and resolution displays in a small box in the upper left-hand corner of the screen whenever you select a new input source. The location of the input name and resolution can be changed using the OSD Position option. The default setting is Disabled. **NOTE:** *The OSD may appear pixelated when downscaling video at lesser resolutions.*
OSD Color	Use the left and right navigational buttons to select the background color for the on-screen display. You can choose from Black, White, Yellow, or Blue. The default setting is Black.
Allow Display Sleep	Use the left and right navigational buttons to enable or disable sleep delay on the selected video output.
Display Sleep Delay	Use the left and right navigational buttons to set the sleep delay for the OSD.
OSD Position	Use the left and right navigational buttons to select the on-screen display's relative position so it is unobtrusive to video. You can choose from Top Left, Top Right, Bottom Left, and Bottom Right. The default setting is Top Left.
Video Mute	Use the left and right navigational buttons to mute/un-mute (enable/disable) all video output displays. Video mute results in a blank screen on the output displays.
Video Freeze	Use the left and right navigational buttons to toggle whether you want the current image to freeze and remain on the screen. You can choose from Enable or Disable. The default setting is Disable.
Video Transition	Use the left and right navigational buttons to select a transition between the previously selected video input and the currently selected video input. You can choose from Diag Top Left, Diag Top Right, Diag Bottom Left, Diag Bottom Right, Horiz From Left, Horiz From Right, Vert From Top, Vert From Bottom, and Fade.
Blank Color/Logo	Use the left and right navigational buttons to choose a blanking screen. You can choose from Blue, Black, or an uploaded Logo. **NOTE:** *If you have uploaded a logo to display on the output, you can also select the logo from this option. Logo images must be 24-bit color bitmap files at least 36x36 pixels in size.*
LOCAL HDMI OUTPUT A-B/DXLite OUTPUT C The following options appear for all three of these outputs unless specified otherwise.	
Port	This option lists the output port currently being used. This option is view-only.
H ACTIVE	This option lists the horizontal active pixels on the video output. This option is view-only.
V ACTIVE	This option lists the vertical active pixels on the video output. This option is view-only.
Color Space	This option lists the color space on the video output. This option is view-only.
Color Depth	This option lists the color depth on the video output. This option is view-only.
VIC	This option lists the VIC on the video output. This option is view-only.
Pixel Clock	This option lists the pixel clock on the video output. This option is view-only.
Source Channel	This option lists the video input currently sending video to the video output. This option is view-only.
DXLite Quality	This option lists the degree or lack of quality in the video output. This option is only available on DXLite Output C and is view-only.
WINDOWS:	
Windows Settings	Press the right navigational button to view the settings for Window Position, Window Size, Left/Large Input, and Right/Small Input.
Window Position	Use the left and right navigational buttons to choose a window position for the windows when the View Mode is set to Windows. You can choose from Side By Side and Top Bottom.
Window Size	Use the left and right navigational buttons to choose a window size for the windows when the View Mode is set to Windows. You can choose from Top Large and Bottom Large.
Left/Large Input	Use the left and right navigational buttons to choose a video input for the left window when the View Mode is set to Windows.
Right/Small Input	Use the left and right navigational buttons to choose a video input for the right window when the View Mode is set to Windows.

Video Settings Options (Cont.)

PIP Settings	Press the right navigational button to view the settings for PIP Position, PIP Size, Main Window Input, and PIP Window Input.
PIP Position	Use the left and right navigational buttons to choose a PIP position for the video output. You can choose from Top Left, Top Right, Bottom Left, and Bottom Right.
PIP Size	Use the left and right navigational buttons to choose a PIP size for the video output. You can choose from Small, Medium, and Large.
Main Window Input	Use the left and right navigational buttons to choose a video input for the main window when the View Mode is set to PIP.
PIP Window Input	Use the left and right navigational buttons to choose a video input for the PIP window when the View Mode is set to PIP.
View Mode	Use the left and right navigational buttons to choose a viewing mode for the video output. You can choose from Transition, PIP, and Window.
Video Transition	Use the left and right navigational buttons to choose a video transition mode for the video output. You can choose from Diag Top Left, Diag Top Right, Diag Bottom Left, Diag Bottom Right, Horiz From Left, Horiz From Right, Vert From Top, Vert From Bottom, and Fade In. You can only access this option when the View Mode is set to Transition.

Network Settings

Press the MENU ON/OFF button on the front panel of the presentation system to access the on-screen menu and the Network settings. When the on-screen menu appears, use the DOWN navigational button to access the Network settings. The following table lists the video options available on the on-screen menu:

Network Menu Options

IPV4:	
DHCP/Static:	Displays how the device is assigned an IP address: either dynamically (DHCP) or manually (Static). This option only appears on NCITE-813/813A models.
IP Address:	Displays the IP address of the device.
Subnet Mask:	Displays the subnet mask of the network.
Gateway:	Displays the gateway address of the network.
Hostname:	Displays the hostname of the device.
MAC Address	Displays the MAC address of the device.
System Number	Displays the system number for the device.
IPV6: (These options only appear on NCITE-813/813A models.)	
Address 1	The primary IPv6 address of the device.
Address 2	The secondary IPv6 address of the device.
Address 3	The third IPv6 address of the device.
Subnet Mask	The IPv6 subnet mask of the device.
Gateway	The IPv6 gateway of the device.
NetLinx: (These options only appear on NCITE-813/813A models.)	
Device Status	Displays the device status.
Master Mode	Displays the Master mode.
IP/URL	Displays the IP address/URL of the device.
Device Number	Displays the device number.
System Number	Displays the system number for the device.

Status Menu

Press the MENU ON/OFF button on the front panel of the presentation system to access the on-screen menu and the Status settings. When the on-screen menu appears, use the DOWN navigational button to access the Status settings. The following table lists the status options available on the on-screen menu. These options are view-only.

Status Menu

Serial Number	Displays the serial number of the presentation system.
Switcher Firmware	Displays the version number of the firmware the switcher is using.
Master Firmware	Displays the version number of the firmware the Master is using.
Device Firmware	Displays the version number of the firmware the device is using.
Temperature	Displays the temperature of the device in degrees Celsius (C).
Fan Speed	Displays the speed in Revolutions per Minute (RPM) for each fan.

WebConsole

The Incite presentation systems feature an on-board WebConsole that allows you to configure the device and make various adjustments to audio/video and system settings. The WebConsole is accessed via a web browser on a PC that has network access to the presentation system.

The WebConsole can be divided into two primary parts:

- Audio/Video Switcher Configuration Settings
- Master Controller Configuration Options

Accessing the WebConsole

From any PC that has access to the LAN that the target Master resides on:

1. Open a web browser and type the IP Address of the target Master in the Address Bar.

2. Press Enter to access WebConsole for that Master. The initial view is the Web Control page (FIG. 59).
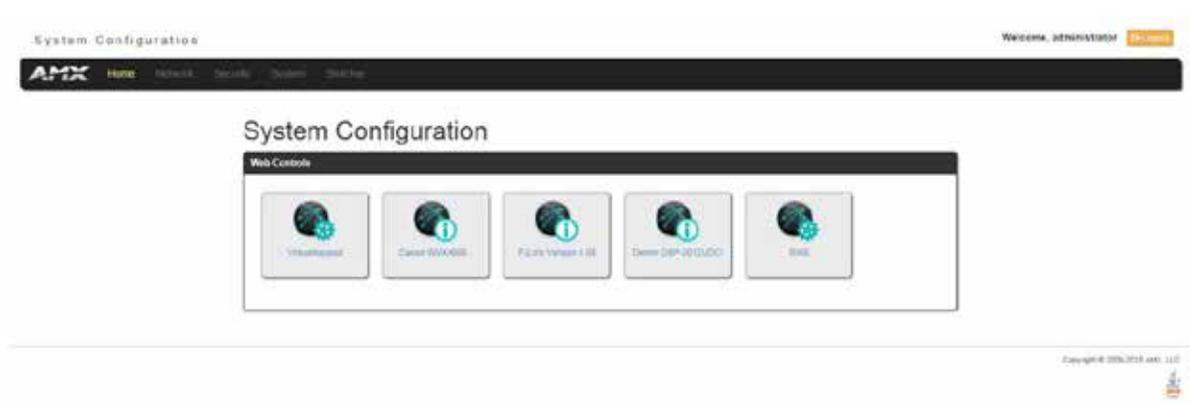
FIG. 59 WebConsole - WebControl Page (initial view)

When using the Microsoft Internet Explorer browser in Windows 8, you may not be able to login and connect to the Master via the WebConsole. If you cannot login and connect, try any of the following options:

- Shift+Right-click Internet Explorer icon and select Run as administrator.
- Select Internet Options | Advanced | Security Settings, and check Enable Enhanced Protection Mode. A Windows 8 restart will be required.
- Use the Master's Hostname instead of its IP numeric address to enter the URL (e.g.: http://AMXM98A1A2B rather than http://192.168.1.123).
- Use a non-Windows 8 device if Internet Explorer 10+ is required.

Master Controller Configuration Options

The NCITE-813AC Presentation System features a NetLinx central controller functionally equivalent to an NX-2200. The NCITE-813AC provides the same set of configuration pages that are available to the NX-series controllers.

NOTE: *All NX-Series NetLinx Masters share a common WebConsole, as described in the NetLinx Integrated Controllers WebConsole & Programming Guide (available at www.amx.com).*

WebConsole - System Configuration

The NCITE-813AC (and all other NetLinx Masters) features a built-in WebConsole that allows you to make various configuration settings via a web browser on any PC that has access to the Master.

The webconsole consists of a series of web pages that are collectively called the "Master Configuration Manager" (FIG. 59).

The webconsole is divided into six primary sections, indicated by six control buttons across the top of the main page (FIG. 60):
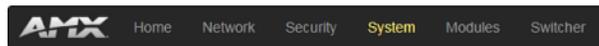
FIG. 60 System Configuration Menu Options

- **Home**: This option appears when you access the System Configuration page. Use these options to view any connected device or access a module. This option only appears on the NCITE-813AC.
- **Network**: Click to access the Network Settings for the Master. The options on these pages enable you to view and modify the IPv4 and IPv6 network settings and the clock settings for the system.
- **Security**: Click to access the System Security page. The options in this page allow you to configure various aspects of NetLinx System and Security on the Master, including network configuration and creating users and roles.
- **System**: Click to access the System Details page. The options on this page allow you to view and configure various aspects of the NetLinx System. This option only appears on the NCITE-813AC.
- **Modules**: Click to access several different device-related pages. This option only appears on the NCITE-813AC.
- **Switcher**: Click to access the Switcher Configuration page.

WebConsole User Interface - Additional Documentation

For a full description of all System Configuration pages, refer to the NX-Series Controllers WebConsole & Programming Guide, available at www.amx.com.

Using a Web Browser

You can access the configuration settings for the Presentation System by using the latest, industry-accepted version of HTML5 web browsers. If a browser is inconsistent, upgrade or try a different browser. The system configuration pages are available by entering the IP address of the NetLinx master into the location bar of your web browser. Entering your IP address into your web browser opens the Main WebControl page (FIG. 61).
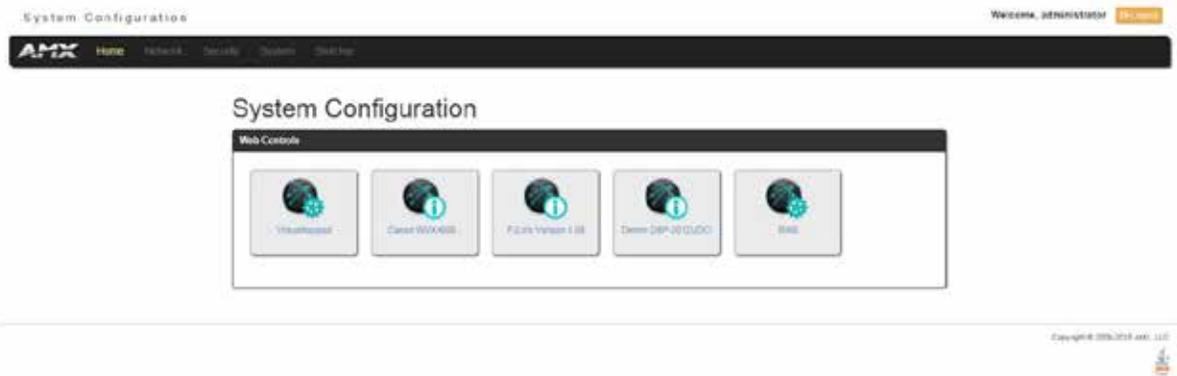
FIG. 61 Main WebControl page

Perform these steps to access the configuration settings:

1. Open a web browser.
2. Enter the IP address of the presentation system in the location bar of the web browser. (If you do not know your device's IP address, see the *Locating the IP Address of the Presentation System* section on page 53.) The Main WebControl page opens (FIG. 61).

NOTE: *WebControl requires that you install the latest version of the Adobe Flash Player plug-in for your browser. If your browser does not have the Flash Player plug-in installed, you will be prompted to install it.*

3. Click the Switcher tab to open the Switcher Configuration page.

If a web browser or Flash Player is not available, the buttons on the front panel and NetLinx commands provide equivalent controls for audio/video configuration. See the *Using the On-Screen Menu* section on page 45 for more information.

Locating the IP Address of the Presentation System

You can locate the IP address of the presentation system by using the buttons on the front panel of the unit. The IP address appears on the LCD display on the front panel of the device. Perform these steps to locate the IP address of the unit:

1. Press the **MENU ON/OFF** button on the front panel of the unit. The on-screen menu appears on the connected output display.

2. Use the **UP** and **DOWN** navigational arrow buttons to navigate to the Network options. Press **SELECT** and you can see the IP address is listed among the network settings. Note the IP address for future reference.

Default User Names and Passwords

The following table lists the default user names and passwords for accessing the NCITE-813AC through NetLinx Studio or the WebConsole.

Default User Names and Passwords		
	User Name	Password
NetLinx Studio	netlinx	password
WebConsole	administrator	password

On-Board WebConsole User Interface

WebConsole UI Overview

Incite Digital Video Presentation Systems have a built-in System Configuration interface that allows you to make various con-figuration settings via a web browser on any PC that has access to the Master. The System Configuration interface (an on-board web configuration) contains a comprehensive set of web pages that can be used during setup to manage your system's network, security, and system needs, as well as configure its inputs and outputs while executing switches (FIG. 62).
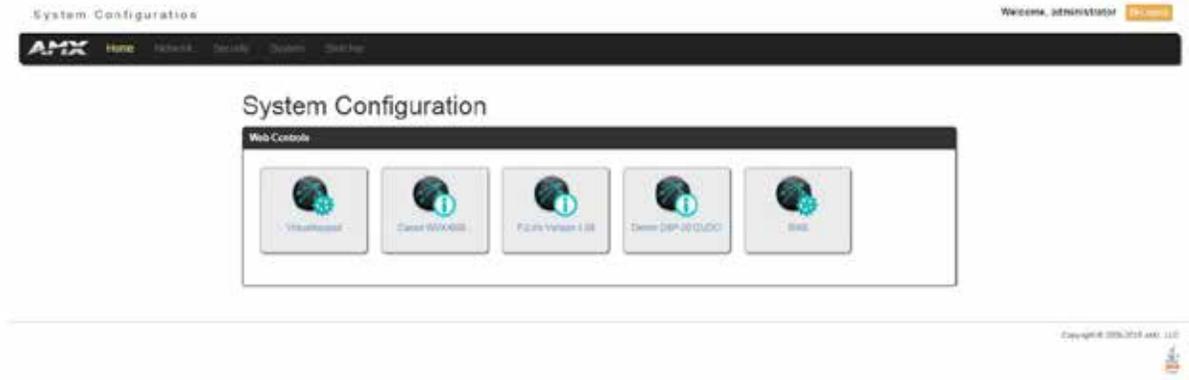
FIG. 62 WebConsole - Web Controls page (initial view)

The options available via the WebConsole differ depending on the on the Presentation System model.

NCITE-813AC WebConsole Options

On the NCITE-813AC, the WebConsole offers six primary sections from a menu located at the top of the page, indicated by six menu options across the top of the main page (FIG. 63):
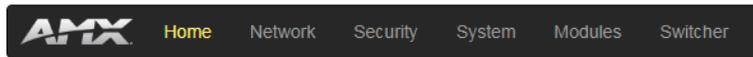
FIG. 63 System Configuration Menu Options (NCITE-813AC)

- **Home**: This option appears when you access the System Configuration page. Use these options to view any connected device or access a module.
- **Network**: Click to access the Network Settings for the Master. The options on these pages enable you to view and modify the IPv4 and IPv6 network settings and the clock settings for the system (see the *WebConsole - Network Options* section on page 56).
- **Security**: Click to access the System Security page. The options in this page allow you to configure various aspects of NetLinx System and Security on the Master, including network configuration and creating users and roles (see the *Web-Console - Security Options* section on page 63).
- **System**: Click to access the System Details page. The options on this page allow you to view and configure various as-pects of the NetLinx System (see the *WebConsole - System Options* section on page 80).
- **Modules**: Click to access several different device-related pages (see the *WebConsole - Modules Options* section on page 82).
- **Switcher**: Click to access the Switcher Configuration page (see the *WebConsole - Switcher Options* section on page 90). This page only appears for Enova devices.

From the Home page, Web Control options become available (e.g., RMS, Virtual Keypad, and device details pages for any connect-ed devices).

NCITE-813/813A WebConsole Options

On the NCITE-813AC, the WebConsole offers three primary sections from a menu located at the top of the page, indicated by three menu options (Network, Security, and Switcher) across the top of the main page (FIG. 64):
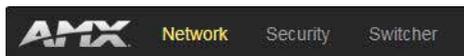
FIG. 64 System Configuration Menu Options (NCITE-813/813A)

System Configuration Interface Tips:
- It is recommended that you use the latest, industry accepted version of HTML5 browsers. If a browser is inconsistent, upgrade or try a different browser. To-date, browsers tested include Google Chrome (preferred), Mozilla Firefox, Apple Safari, and Microsoft Internet Explorer 10+/Edge.
- To access the interface after initial setup, simply type the integrated Master's IP address in the address bar of the browser and press the Enter key. You can locate the IP address of your device by using the on-screen menu (see the *Using the On-Screen Menu* section on page 45 for more information).
- Some devices run on a secured file-system. As such, file-system operations (e.g., Load and Save operations) may not be supported by the device's default capabilities and may require downloading a file manager application.
- When selecting Inputs and Outputs for switches – you may select an input followed by multiple outputs, but only one input is selectable if you select an output first.
- Inputs and Outputs can only have one name each, regardless of whether the name is set via the Video tab or the Audio tab in the Configuration page (or via NetLinx SEND_COMMANDs VIDIN_NAME, VIDOUT_NAME, AUDIN_NAME, AUDOUT_NAME). Inputs and Outputs may be named independently.

Accessing the WebConsole

From any PC that has access to the LAN that the target Master resides on:

1. Open a web browser and type the IP Address of the target Master in the Address Bar.

2. Press Enter to access WebConsole for that Master. The initial view is the *Web Control* page (FIG. 62).

When using the Microsoft Internet Explorer browser in Windows 8, you may not be able to login and connect to the Master via the WebConsole. If you cannot login and connect, try any of the following options:
- Shift+Right-click Internet Explorer icon and select **Run as administrator**.
- Select Internet Options | Advanced | Security Settings, and check **Enable Enhanced Protection Mode**. A Windows 8 restart will be required.
- Use the Master's Hostname instead of its IP numeric address to enter the URL (e.g.: http://AMXM98A1A2B rather than http://192.168.1.123)
- Use a non-Windows 8 device if Internet Explorer 10+ is required.

Default User Names and Passwords

The following table lists the default user names and passwords for accessing the NX-series controllers through NetLinx Studio or the WebConsole.

Default User Names and Passwords		
	User Name	Password
NetLinx Studio	netlinx	password
WebConsole	administrator	password

WebConsole - Network Options

Network Overview

The *Network* page (FIG. 65) is accessed by clicking **Network** on the page's main heading. This page allows you to view and configure various aspects of the Master's network:

- **IPv4 Setup** - Options on this page allow you to view/change the Master's IP and DNS address information. See the *Network - IPv4 Setup* section on page 57 for details.
- **IPv6 Setup** - Options on this page allow you to view the Master's IPv6 address information.
- **Date/Time** - Options on this page allow you to enable/disable using a network time source and provide access to Daylight Saving configuration and which NIST servers to use as a reference. This page is only available on the NCITE-813AC Presentation System. See the *Network - Date/Time* section on page 59 for details.
- **NetLinx Setup** - Options on this page allow you to establish NetLinx settings for your system. This page is only available on the NCITE-813/813A Presentation Systems. See the *Network - NetLinx Setup* section on page 62 for details.
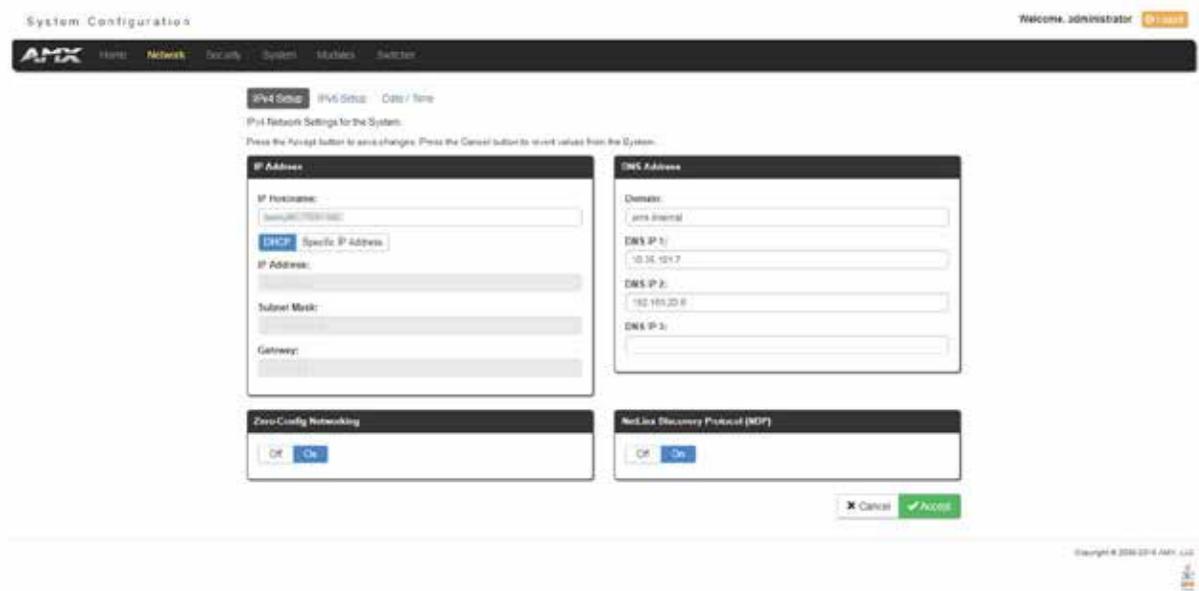
FIG. 65 Network page

Network - IPv4 Setup

Click **IPv4 Setup** to access the IPv4 Setup page (FIG. 66) and view and configure IP and DNS addresses for the Master. Use the options on this page to view/edit the Master's network settings. A user can only modify the information on this page if it is assigned a Role that includes the Network Configuration permission. Without the proper permission, a user can only view the information on this page.

FIG. 66 Network - IPv4 Setup page

IPv4 Setup Options

The IPv4 Setup options are described in the following table:

IPv4 Setup Options	
Option	Description
IP Address:	This section enables you to set IPv4 information for the Master's network.
IP Hostname	Enter the IP host name in this field. **NOTE:** *Host names may contain only the ASCII letters 'a' through 'z' (case-insensitive), the digits '0' through '9', and the hyphen ('-').*
DHCP/Specific IP Address	Use the buttons to select a DHCP or static IPv4 address. Additional options in this area become available if you select Specific IP Address.
IP Address	Enter the IPv4 address in this field. This field is only available if you select Specific IP Address.
Subnet Mask	Enter the IPv4 subnet mask in this field. This field is only available if you select Specific IP Address.
Gateway	Enter the gateway IPv4 address in this field. This field is only available if you select Specific IP Address.
DNS Address:	This section enables you to set hostname, domain, and DNS information for the Master's network.
Domain	Enter the domain name of the DNS server in this field.
DNS IP	Enter up to three DNS server addresses in the provided fields.
Zero-Config Networking	Use the buttons to activate zero-config networking functionality on the Master's network. Zero-config networking provides the ability to automatically discover devices that are present on the LAN. By default, zeroconf is enabled (On option selected). With zeroconf enabled, the Master's web interface will be registered via zeroconf and can be viewed through a zeroconf browser plug-in such as Bonjour for IE.
NetLinx Discovery Protocol (NDP)	Use the buttons to indicate whether you want the Master to search for any NDP-capable devices currently connected to the Master.

Network - IPv6 Setup

Click the **IPv6 Setup** link (on the *Network* page) to access the *IPv6 Setup* page (FIG. 67). The options on this page allow you to view the Master's IPv6 network settings. A user can only modify the information on this page if it is assigned a Role that includes the Network Configuration permission. Without the proper permission, a user can only view the information on this page.

FIG. 67 Network - IPv6 Setup page

IPv6 Setup Options

The IPv6 Setup options are described in the following table:

IPv6 Setup Options	
Option	Description
IPv6 Address	The IPv6 address of the Master. This information is view-only.
IPv6 Subnet Mask	The IPv6 subnet mask of the Master. This information is view-only.
IPv6 Gateway	The IPv6 gateway of the Master. This information is view-only.

Network - Date/Time

Click the **Date/Time** link (on the *Network* page) to access the *Date/Time* page (FIG. 68). The options on this page allow you to enable/disable using a network time source and provide access to Daylight Saving configuration and which NIST servers to use as a reference. This page is only available on the NCITE-813AC Presentation System.
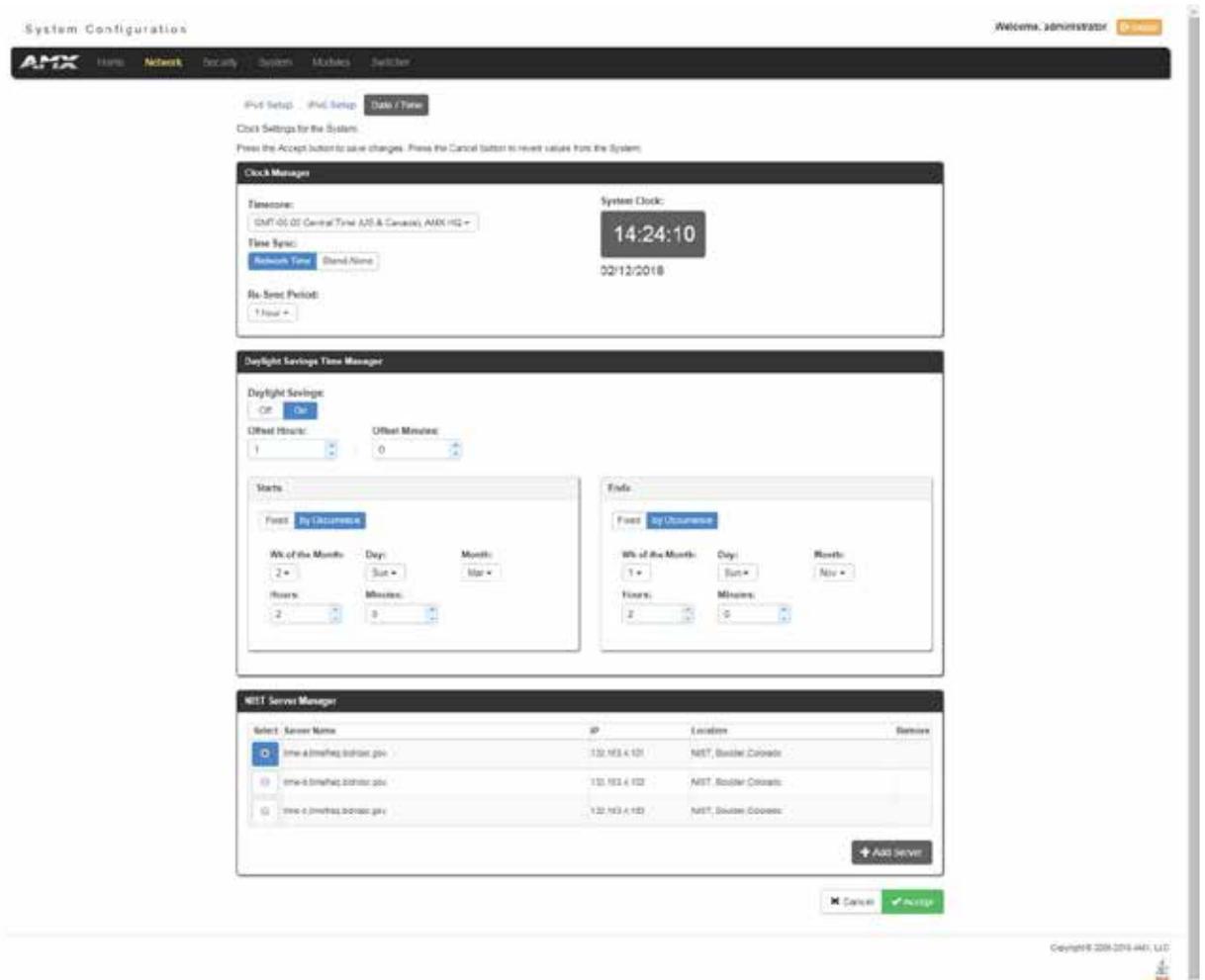
FIG. 68 Network - Date/Time page

The Clock Manager Options are separated into three areas:

- **Clock Manager** - The Clock Manager allows you to set the Clock Manager Mode (Network Time or Stand Alone).
- **Daylight Savings Time Manager** - The Daylight Savings Time Manager allows you to specify how and when to implement Daylight Savings rules on the clock.
- **NIST Server Manager** - The NIST Server Manager allows you to connect to a specific NIST (Internet Time Service) Server.

Setting the Mode for the Clock Manager

1. In the *Manage System* tab (FIG. 68), select a **Time Sync** option.
   - **Network Time**: This option allows the Master to manage it's clock by connecting to a NIST (Internet Time Service) Server. When this option is selected, the Master will connect to the default NIST Server to get date and time information.

     You can select a different NIST Server (or specify the IP Address of a known NIST Server) in the NIST Server Manager section (see the Selecting a Custom NIST Server section on page 60).
   - **Stand Alone**: This option lets the Master use its own internal clock. When this option is selected, two additional fields are available on this tab:
     - Date - Enter the current date in this field (mm/dd/yyyy).
     - Time - Enter the current time in these fields (Hours/Minutes/Seconds).

2. Click **Accept** to save these settings to the Master.

Setting Daylight Savings Rules

1. In the *Daylight Savings Time Manager* section (FIG. 69), enable Daylight Savings mode by clicking the **On** button. Clicking **On** reveals additional Daylight Savings options.
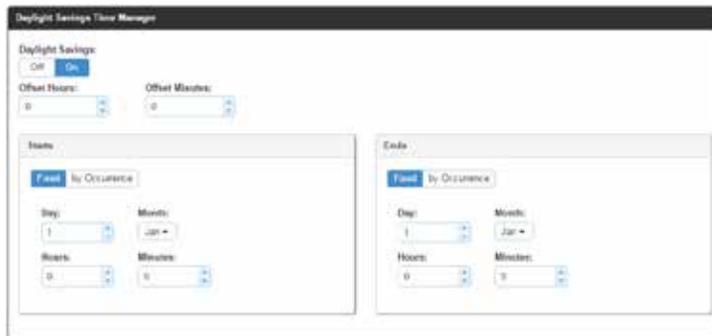
FIG. 69 Date/Time Options - Daylight Savings Time Manager

2. Use the **Offset** drop-down menus to adjust the amount of time (hours and minutes) to offset Daylight Savings. By default, the offset is set to 1 hour.

NOTE: *Although most places that support Daylight Savings usually adjust the local time by one hour this doesn't cover all locations.*
To provide flexibility for such locations it is possible to configure a different daylight savings time offset.

3. Use the **Starts** fields to specify when Daylight Savings should start. The Starts rules include:
   - Select **Fixed** to specify the calendar date when the rule applies as a specific date ("March 21"). When *Fixed* is selected, use the **Day**, **Month**, **Hours**, and **Minutes** fields to specify the date and time (hh:mm) to start Daylight Savings time.
   - Select **by Occurrence** to specify the calendar date when the rule applies as a heuristic, ("the 3rd Sunday in March"). When *by Occurrence* is selected, use the **Wk of the Month**, **Day**, **Month**, **Hours**, and **Minutes** fields to specify the occurrence to start Daylight Savings time.

     The range for Wk of the Month is 1 through Last, where Last indicates the last occurrence of a particular day of the month. This is to accommodate months that include four weeks as well as those that include five.

4. Use the **Ends** fields to specify when Daylight Savings should end. The Ends rules match the Start rules, and follow the same logic. Select **Fixed** or **by Occurrence**, and specify the End date/time information accordingly.

5. Click **Accept** to save these settings to the Master.

Selecting a Custom NIST Server

FIG. 70 Date/Time Options - NIST Server Manager

1. In the *NIST Server Manager* section (FIG. 70), use the option buttons to select one of the NIST Servers in the list.

2. Click **Accept** to save the selection to the Master.

Adding a Custom NIST Server to the List

1. Click **Add Server**. The Add New Server dialog opens (FIG. 71).

FIG. 71 Add New Server dialog

2. In the **New Server URL** field, enter the URL of the NIST Server. The URL is used only to help you manage entries, and is not verified or used internally by the clock manager.

3. Enter the NIST Server's IP Address in the **New IP** field. This is used internally and must be a valid IP address.

> **NOTE:** *The strings entered into the URL and Location fields are not used to connect to NIST Servers. The IP Address (entered into the IP field) specifies the NIST Server(s) that will be used. As stated above, the address entered into the IP field must be must be a valid IP address (not a URL).*

4. Enter the NIST Server's location in the **New Location** field. This is used only to help the user manage entries and it is not verified or used internally by the clock manager.

5. Click **Accept** to save these settings to the Master. ### Removing an NIST Server From the List

1. Click on the **Remove** (x) button to the right of a *user-added* NIST Server in the *NIST Server Manager* list.

2. Click **Accept** to save these settings to the Master.

> **NOTE:** *The built-in entries cannot be removed.* ### Clock Manager NetLinx Programming API

Refer to Appendix C: Clock Manager NetLinx Programming API in the NetLinx Programming Guide (available at www.amx.com) for a listing and description of the Types/Constants and Library Calls that are included in the NetLinx.AXI to support Clock Manager functions.

Network - NetLinx Setup

Click the **NetLinx Setup** link (on the *Network* page) to access the *NetLinx Setup* page (FIG. 72). The options on this page establish NetLinx settings for your system. This page is only available on the NCITE-813/813A Presentation Systems..

FIG. 72 Network - NetLinx Setup page

ICSP Setup Options

The ICSP Setup options are described in the following table:

ICSP Setup Options	
Option	Description
Master Mode	This option allows you to set the Master Mode for your system. You can choose from URL, Listen, NDP, Auto, and UDP.
IP/URL	The IP address or URL for your system.
Device Number	The device number for your system.
System Number	The system number that your device belongs to.
Username	The username to access the NetLinx system.
Password	The password to access the NetLinx system.

WebConsole - Security Options

Security Overview

The *Security* page is accessed by clicking **Security** on the page's main heading. This page allows you to view configure and modify the Master's security settings at three levels (System, Role, and User). See the *Security Presets* section on page 68 for more information on the three presets.

- **System Level** - changes made at this level affect the system globally. See the *Security - General* section on page 65 for details.
- **Role Level** - changes made at this level affect specific Roles. See the *Security - Roles* section on page 69 for details.
- **User Level** - changes made at this level affect individual Users. See the *Security - Users* section on page 73 for details.

The default view for the option is System Security Settings (FIG. 73).
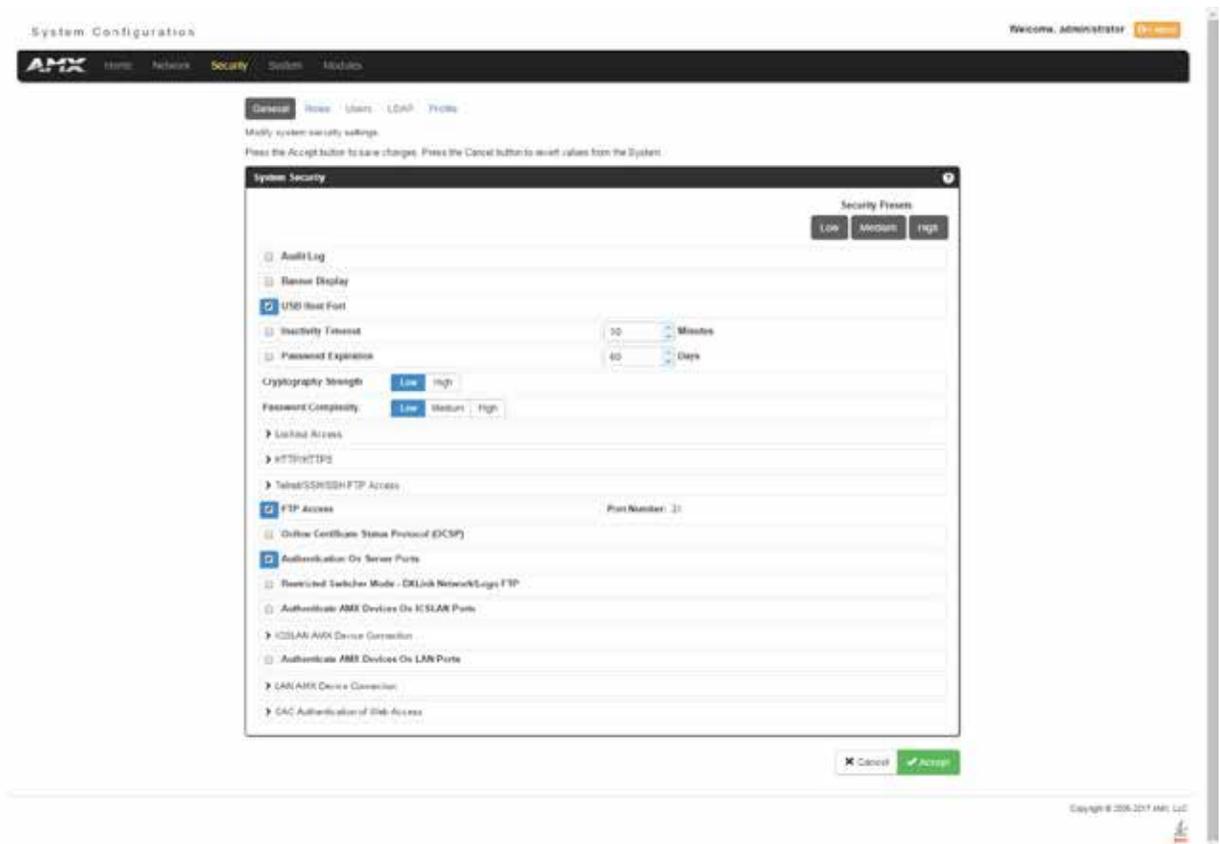
FIG. 73 System Security Settings

NOTE: *By default, all System-level security options are disabled, except for Authentication On Server Ports, which requires a login for access to the web or command line interface.*

Additional security configuration options are available via Terminal/Telnet Commands. See Accessing the Security Configuration Options sections in the NetLinx Programming Guide (available at www.amx.com)for more information.

NOTE: *While the Security page exists on NCITE-813/813A Presentation Systems, the options listed in this chapter are not available for these devices.*

Login Rules

There is no limit to the number of concurrent logins allowed for a single user. This allows for the creation of a single user that is provided to multiple ICSP devices (touch panels, for example) using the same login to obtain access to the Master. For example, if you have 50 devices connected to a Master, you do not have to create 50 individual user accounts, with one for each device. Instead, you only need to create one which all 50 devices use for access.

The first layer of security for the Master is to prompt a user to enter a valid user name and password before gaining access to a secured feature on the target Master.

Depending on the Security configuration, users may be prompted to enter a valid user name and password before gaining access to various features of the WebConsole. User access is specified by the administrator in the Role and User Level pages of the Security section.

NOTE: *This user name and password information is also used by both G5 touch panels (within the System Connection firmware page) and AMX software applications such as NetLinx Studio v 4.0 and above to communicate securely with a Master using encrypted communication.*

User and Role Name Rules

User account and role names must follow these rules:

- Case-sensitive
- Must be between 4 and 20 alpha-numeric characters: A-Z, a-z, 0-9
- The following characters are allowed: - _ . and <space>.

Password Rules

The rules for changing a password vary according to the Password Complexity setting for the user. A user's password complexity can be set to Low, Medium, or High.

- **Low** - Minimum length is 4 characters, and must be different from the previous password.
- **Medium** - Minimum length is 8 characters, must contain characters from 3 character classes listed in the table below, must contain at least 4 changes from the previous password, and must be different from the previous 10 passwords.
- **High** - Minimum length is 15 characters, must contain characters from all of the characters classes listed in the table below, must contain at least 8 changes from the previous password, and must be different from the previous 30 passwords.

The requirements for each setting are listed in the following table:

Password Complexity Requirements			
Requirement	Low	Medium	High
Case Change Only	No	No	Yes
Character Classes Required	0	3	4
Library Check	No	No	Yes
Minimum Length	4	8	15
Palindrome Check	No	No	Yes
Same Consecutive Characters	No check	5	3
Similarity Check	1	4	8
User Name Check (straight or reversed)	No	Yes	Yes
Different from Previous # of Passwords	1	10	30

The definitions of each requirement are listed below:

- **Case Change Only:** A new password cannot differ from the previous passwords solely by a change in case (upper/lower)
- **Character Classes Required:** A password must contain characters from a set number of character classes. See the Character Classes table below for the list and definitions of character classes.
- **Library Check:** The password cannot contain a word from a dictionary file supplied with the OS.
- **Minimum Length:** The password must contain a minimum set number of characters.
- **Palindrome Check:** The password does not contain a palindrome of a 7-letter length or greater.
- **Same Consecutive Characters:** The password does not contain more than a set number of the same consecutive characters.
- **Similarity Check:** The password differs from the previous password by a set number of characters.
- **User Name Check:** The password does not contain the user's user name.
- **Different from Previous # of Passwords:** The password differs from a set number of previous passwords.

The following table lists the characters available in each character class:

Character Classes	
Character Class	Example
Uppercase Letters	A-Z
Lowercase Letters	a-z
Numbers	0-9
Other Characters	` ~ ! @ # $ % ^ & * ( ) _ - + = { } [ ] \ | : ; " ' <> , . ?/ (including "space")

Security – General

The General Security Settings page provides global permissions for various options that may be individually selected and applied to all users. The Master provides 3 levels of security settings presets: Low, Medium, and High. The levels are simply presets of various security settings. When a preset is selected, the settings are not applied until you click **Accept**. You can customize any settings as needed on the security preset before accepting and applying the settings. The default for the settings will match the Low presets.

System Level Security – System Security Settings

Click the **System Security Settings** link to access the System Security Details page (FIG. 74). The options in this page allow you to establish whether the Master will require a valid user name and password be entered prior to gaining access to the configuration options.
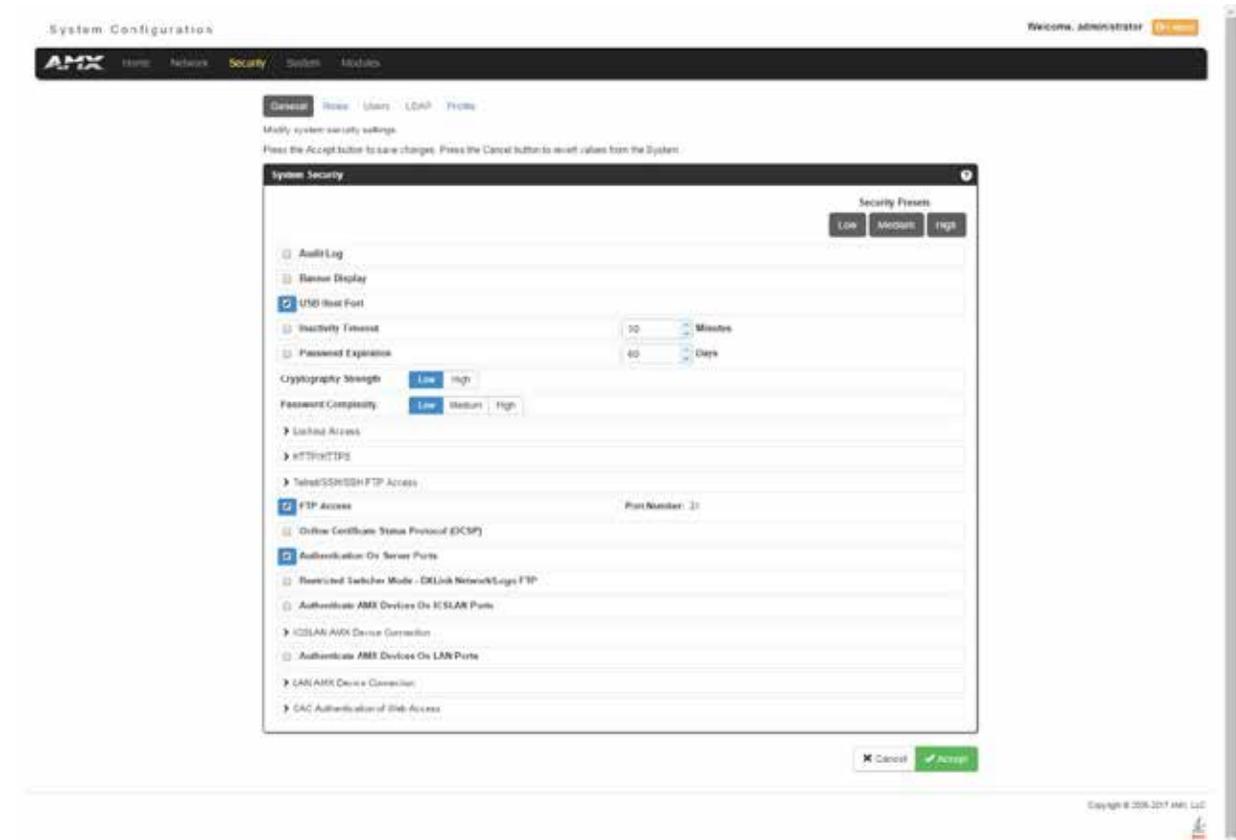
FIG. 74 System Security Settings

These are global options that enable or disable the login requirement for both users and roles.

System Security Options

The System Security options are described in the following table:

System Security Options	
Option	Description
Security Presets	The Master provides three levels of security setting presets: Low, Medium, and High. Each level is a preset of various security settings (see the Security Presets section on page 68 for more information.) When a preset is selected, that setting is applied after clicking Accept. **NOTE:** *If a security preset is not selected, all subordinate options are grayed-out and not selectable, meaning that the Master is completely unsecured and can be altered by any user (regardless of their rights).*
Audit Log	Select to enable/disable remote syslog. See the Audit Logs section on page 68 for more information.
Banner Display	Select to turn on or turn off banner messages. Banners enable you to display pre- and post-login text in the WebConsole. See the Banners section on page 69 for more information.
USB Host Port	Select to enable all Type-A USB connectors on the Master.

System Security Options (Cont.)	
Option	**Description**
Inactivity Timeout	Select to enable the Master to log out a user after a defined period of inactivity. After enabling the inactivity timeout option, use the spin box to set the number of minutes before the timeout activates. You can set a timeout in the range of 1 to 60 minutes. The default setting is 10 minutes. The timeout applies to Program Port, Telnet, SSH, HTTP, and HTTPS sessions. When the inactivity timeout is enabled, the Master limits the number of concurrent sessions for all non-device accounts to 10. When the number of active sessions is full, any additional login attempts will fail.
Password Expiration	Select to force a user to change its password after a set period of time. After enabling the password expiration options, use the spin box to set the interval for password expiration. You can set an amount of time in the range of 1 to 180 days. The default setting is 60 days. **NOTE:** *This option is only valid on locally-maintained accounts. When external LDAP is enabled, only the administrator and device user accounts are affected.*
Cryptography Strength:	Set the cryptography strength of the Master to Low or High. On the High setting, only FIPS 140-2 validated binaries are used.
Password Complexity	Set the password complexity to Low, Medium, or High. When the password complexity level is raised from a lower level to a higher level, the Master requires confirmation from the user. When the user confirms the change, all passwords are marked as expired on all local user accounts, and the passwords must be changed to meet the new complexity requirements. Password complexity requirements are as follows: • Low - Minimum length is 4 characters, and must be different from previous password. • Medium - Minimum length is 8 characters, must contain characters from 3 of the following characters sets (uppercase letters, lowercase letters, numbers, other characters), must contain at least 4 changes from the previous password, and must be different from the previous 10 passwords. • High - Minimum length is 15 characters, must contain characters from all of the following characters sets (uppercase letters, lowercase letters, numbers, other characters), must contain at least 8 changes from the previous password, and must be different from the previous 30 passwords. **NOTE:** *This option is only valid on locally-maintained accounts. When external LDAP is enabled, only the administrator and device user accounts are affected.*
Lockout Access	Select to enable a lock on a user account after a set number of failed logins. When enabled, use the Attempts spin box to set the number of login attempts allowed. Use the Lockout Duration options menu to indicate the amount of time you want the lockout to last. The default setting is 60 minutes. **NOTE:** *This option is only valid on locally-maintained accounts. When external LDAP is enabled, only the administrator user is affected.*
HTTP/HTTPS	Select to enable HTTP and HTTPS access to the Master. HTTP: The port value used for unsecure HTTP Internet communication between the web browser's UI and the target Master. By disabling this port, the administrator (or other authorized user) can require that any consecutive sessions between the UI and the target Master are done over a more secure HTTPS connection. By default, the Master does not have security enabled and must be communicated with using http:// in the Address field. The default port value is 80. **NOTE:** *One method of adding security to HTTP communication is to change the Port value. If the port value is changed, any consecutive session to the target Master has to add the port value at the end of the address* *(within the Address field). An example is if the port were changed to 99, the new address information would be: http://192.192.192.192:99.* HTTPS: The port value used by web browser to securely communicate between the web server UI and the target Master. This port is also used to simultaneously encrypt this data using the SSL certificate information on the Master as a key. This port is used to communicate securely between the browser (using the web server UI) and the Master using HTTPS but also provide a port for use by the SSL encryption key (embedded into the certificate). Whereas SSL creates a secure connection between a client and a server, over which any amount of data can be sent securely, HTTPS is designed to transmit individual messages securely. Therefore both HTTPS and SSL can be seen as complementary and are configured to communicate over the same port on the Master. These two methods of security and encryption are occurring simultaneously over this port as data is being transferred. The default port value is 443. **NOTE:** *Another method of adding security to HTTPS communication would be to change the port value. If the port value is changed, any consecutive session to the target Master has to add the port value at the end of the address (within the Address field). An example is if the port were changed to 99, the new address information would be: http://192.192.192.192:99.*

System Security Options (Cont.)

Option	Description
Telnet/SSH/SSH FTP Access	Select to enable Telnet, SSH, and SSH FTP access to the Master. Telnet: The port value used for Telnet communication to the target Master. Enabling this feature allows future communication with the Master via a separate Telnet application. • The default port value for Telnet is 23. • Refer to the NetLinx Security with a Terminal Connection section for more information on the related procedures. SSH: The port value used for secure Telnet communication. A separate secure SSH Client would handle communication over this port. When using a secure SSH login, the entire login session (including the transmission of passwords) is encrypted; therefore it is secure method of preventing an external user from collecting passwords. • SSH version 2 is supported. • The default port value is 22. **NOTE:** *If this port?s value is changed, make sure to use it within the Address field of the SSH Client application.*
FTP Access	Select to enable FTP access to the Master. The default port value used for FTP communication is 21. **NOTE:** *This port can be disabled/enabled, but its value cannot be changed.*
Online Certificate Status Protocol (OCSP)	Select to enable usage of the OCSP to validate received certificates before trusting the sending site.
Authenticate on Server Ports	Select to require user name and password authentication on Telnet, Program, and HTTP/HTTPS ports. Authentication is always required on FTP/SFTP and SSH ports. **NOTE:** *If Authenticate on Server Ports is disabled but LDAP is enabled, a login is still required. If you do not desire a login, LDAP must also be disabled.*
Restricted Switcher Mode - DXLink Network/Logo FTP	Select to enable or disable the Switcher Secure Mode on DVX and DGX platforms. During Switcher Secure Mode, the switcher (5002 device) does not allow packet routing between the LAN connector and any DXLink endpoints. Additionally, the switcher disables any open IP ports on the LAN (e.g. Telnet or FTP servers.)
Authenticate AMX Devices On ICSLAN Ports	Select to require user name and password authentication on devices connected to the ICSLAN ports on the Master.
ICSLAN AMX Device Connection	Select to allow ICSP access to the Master for Device-type users connected to the ICSLAN ports. Expand the ICSLAN AMX Device Connection section to view this option.
AMX Device Connection	Select to enable connection to AMX devices from the Master. Expand the ICSLAN AMX Device Connection section to view this option.
Secure AMX Device Connection	Select to enable secure connection to AMX devices from the Master. Expand the ICSLAN AMX Device Connection section to view this option.
Legacy ICSP Encryption	Select to enable encryption on the legacy ICSP ports on the Master. Expand the ICSLAN AMX Device Connection section to view this option.
Authenticate AMX Devices On LAN Ports	Select to require user name and password authentication on devices connected to the LAN ports on the Master.
LAN AMX Device Connection	Select to allow ICSP access to the Master for Device-type users connected to the LAN ports. Expand the LAN AMX Device Connection section to view this option.
AMX Device Connection	Select to enable connection to AMX devices from the Master. Expand the LAN AMX Device Connection section to view this option.
Secure AMX Device Connection	Select to enable secure connection to AMX devices from the Master. Expand the LAN AMX Device Connection section to view this option.
Legacy ICSP Encryption	Select to enable encryption on the legacy ICSP ports on the Master. Expand the LAN AMX Device Connection section to view this option.

Security Presets

The Master provides three levels of security setting presets: Low, Medium, and High. Each level is a preset of various security set-tings. The following table describes each of the Security Presets presented on the General section of the Security page:

Security Presets			
Preset	Low	Medium	High
Audit Log	Off	On	On
Banner Display	Off	On	On
USB Host Port	Enabled	Enabled	Disabled
Authentication On Server Ports	Required	Required	Required
Inactivity Timeout	Off	On	On
Password Expiration	Disabled	Enabled	Enabled
Cryptography Strength	Low	Low	High
Password Complexity	Low	Medium	High
Lockout Access	Off	On	On
FTP/SFTP	Both enabled	Disabled/Enabled	Disabled/Disabled
HTTP/HTTPS	Both enabled	Disabled/Enabled	Disabled/Disabled
Telnet/SSH	Both enabled	Disabled/Enabled	Disabled/Disabled
OCSP	Disabled	Disabled	Enabled
Switcher Secure Mode	Disabled	Disabled	Enabled
Authenticate AMX Devices on ICSLAN Ports	Not required	Required	Required
ICSLAN AMX Device Connection	ICSPS enabled, ICSP enabled - without encryption	ICSPS enabled, ICSP enabled - with encryption	ICSPS enabled, ICSP disabled
Authenticate AMX Devices on LAN Ports	Not required	Required	Required
LAN AMX Device Connection	ICSPS enabled, ICSP enabled - without encryption	ICSPS enabled, ICSP enabled - with encryption	ICSPS enabled, ICSP disabled

Once any of the settings have been modified, press the **Accept** button to save these changes to the Master. Once these changes are saved, the following message appears: *"Device must be rebooted for the setting to take effect. To reboot, go to the System Devices page."* A link appears which you can click to jump to the System Devices page (see the *System - Devices* section on page 81 for more information.) Click the **Reboot** button to remotely reboot the target Master.

Audit Logs

An audit log includes the date/time of the event, the event type, the software or hardware component where the event occurred, the source of the event, the subject identity, and the outcome of the event. For events related to a remote device, the audit log includes the source and destination network addresses and ports or protocol identifiers. The Master generates an audit record for the following events:

- Each successful or unsuccessful attempt to access security files
- Alerts and errors
- Starting/Shutting down audit logging
- Any blocking (including the reason) of access based on a UID, terminal, or access port
- Any configuration change. The record includes the source and destination network addresses and ports or protocol identi-fiers.
- Denial of access due to excessive login attempts
- Each log off
- Each successful or unsuccessful attempt to log on to the application
- Successfully or unsuccessfully loading and starting a Duet module
- Modification of permissions associated with roles
- Connection and loss of connection to an NTP server. (Loss of connection is defined as three successive failed polls. A single successful poll constitutes a re-connection.
- System reboot
- Software or firmware updates
- Creation, modification, and deletion of user accounts

NOTE: *The Master retains audit log records for 30 days (or less depending on available space), after which they are automatically purged.*

Banners

Banners enable you to display pre- and post-login text in the WebConsole and terminal interfaces. Banner files are text files containing up to 5000 characters in each file. (Any additional characters are discarded.)

NOTE: *Banner files are user-provided and optional. If no files are found, no banner appears.*

The following special characters are allowed for use in banner text messages:

> ! " # $ % & ' ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | } ~

Also allowed are any printable ASCII characters (including "space"): A-Z, a-z, 0-9.

Pre-login banners must be named "banner.txt" and stored in the /user directory on the Master. Post-login banners are obtained from one or more files in the /user directory. Post-login banner text is a concatenation of the allroles_banner.txt file, followed by all of the applicable <role>_banner.txt files, where <role> is the name of a defined Role in the system. The applicable files are those that match the Roles assigned to the user that logged in. If a Role is currently locked, its banner file is not included.

NOTE: *If you load a new "banner.txt" file with new content to the Master, you must reboot the Master to display the new file.*

Security - Roles

A Role is a set of privileges or permissions assigned to one or more users. The privileges and permissions can involve various functions or allow access to specific ports. Any privileges or permissions set for a role are inherited by all users sharing that role. Multiple roles can be assigned to a user, but at the same time, roles are not required for users. A user can have zero roles assigned to it.

NOTE: *You cannot assign a permission directly to a user. All user permissions are determined by the Role assigned to the user.*

NOTE: *If you have a remote directory such as LDAP enabled, the common name of the LDAP group on the LDAP server must match the name of the Role assigned to the user on the Master.*

Select the *Roles* option of the Security Page to access the **Role Security Details** page (FIG. 75).
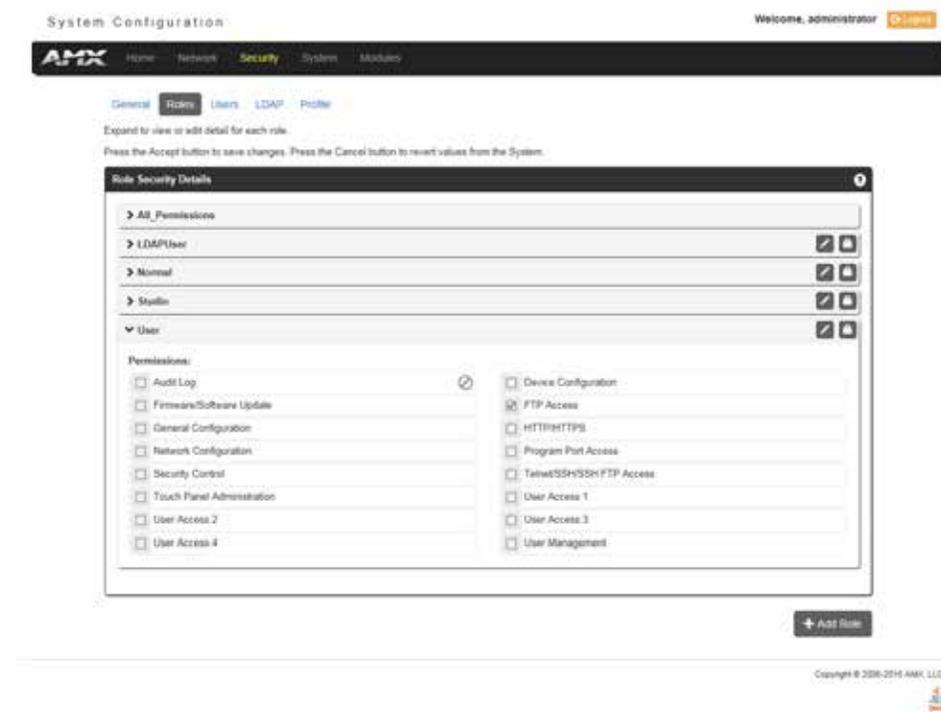
FIG. 75 Security - Roles page

The options in this page allow authorized users to assign and alter role properties such as creating, modifying, or deleting a role's rights, locking a role, and defining the files/directories accessible by a particular role. Locking a role disables the role without deleting it.

Default Roles

By default, the NetLinx Master creates the following accounts, access rights, directory associations, and security options:

Default User Accounts	
All_Permissions	Studio
Permissions: All	Permissions: • Device Management • Firmware/Software Update • Network Management • Security Control • General Configuration

Role Permissions

The following table lists the permissions available for Roles:

Role Permissions	
Option	Description
Audit Log	Select to allow the role to view and configure the audit log.
Device Configuration	Select to allow the role to modify the configuration of NetLinx and 3rd party devices including the following: • System number • Device number • Integrated device settings • Switcher device settings (DVX or DGX) •Reboot **NOTE:** *This permission is not required to view the information, only to change it.*
Firmware/Software Update	Select to allow the role to update firmware and software. This setting allows Device access via ICSP with user credentials. **NOTE:** *This permission also includes the right to reboot the Master after the update. It does not include the right to reboot the Master outside of this context or to reboot any other devices.*
FTP Access	Select to allow the role to have FTP access.
General Configuration	Select to allow the role to modify general configuration including access to WebControl for RMS and RPM configuration, importing and exporting configuration files, and the following parameters: • Auto-locate enable/disable • Device Holdoff setting • Duet memory allocation • ICSP TCP timeout • Master-to-master route mode • Message log length • Message thresholds for threads • Queue sizes for threads • UDP broadcast rate **NOTE:** *This permission also includes the right to reboot the Master after the configuration change. It does not include the right to reboot the Master outside of this context or to reboot any other devices.* **NOTE:** *This permission is not required to view the information, only to change it.*
HTTP/HTTPS	Select to allow the role to have HTTP and HTTPS access through the web interface.
Network Configuration	Select to allow the role to modify network configuration including the following: • Clock Manager settings • DHCP/Static setting (Gateway IPv4 address, IPv4 address, IPv4 subnet mask (if static selected)) • DNS server addresses •Domain name • Hostname • zeroconfig enable/disable **NOTE:** *This permission also includes the right to reboot the Master after the configuration change. It does not include the right to reboot the Master outside of this context or to reboot any other devices.* **NOTE:** *This permission is not required to view the information, only to change it.*
Program Port Access	Select to allow the role to have terminal access via the Program Port.

Role Permissions (Cont.)	
Security Control	Select to allow the role to view and configure security including the following: • Audit log enable • Authentication on server ports enable • Authentication on ICSP LAN ports enable • Authentication on ICSP ICSLAN ports enable • Banner display enable • CAC authentication enable • Cryptographic options • Lockout on failed logins enable • FTP/SFTP enable •HTTP/HTTPS enable • Inactivity timeout enable • ICSP options on ICSLAN • ICSP options on LAN • Password complexity • Password expiration enable • Switcher Secure Mode enable •Telnet/SSH enable • USB Host port disable **NOTE:** *This permission also includes the right to reboot the Master after the configuration change. It does not include the right to reboot the Master outside of this context or to reboot any other devices.* **NOTE:** *This permission is not required to view the information, only to change it.*
Telnet/SSH/SSH FTP Access	Select to allow the role to have Telnet, SSH, and SSH FTP access.
Option	Description
Touch Panel Administration	Select to allow the Master to access a touch panel's settings page.
User Access 1-4	Select to allow the role access generic access permissions. These privileges are to be used by NetLinx programs.
User Management	Select to allow the role to view, create, modify, lock, and remove user accounts. **NOTE:** *A user has the ability to change its own password, regardless of whether it has the User Management permission.*

Adding a New Role

1. Select the **Roles** option (*in the Security section*) to open the Role Security Details page.

2. Click the **Add Role** button (see FIG. 76) to access the **Add New Role** page (FIG. 76).

FIG. 76 Add New Role

3. In the **Role Name** field, enter a unique name for the new role.
   - The name must be a valid character string consisting of 4 - 20 alpha-numeric characters. See the *User and Role Name Rules* section on page 64 for a complete list of valid characters.
   - The string is case sensitive and must be unique.
   - The terms "*All_Permissions"* and "Studio" cannot be used for a new role name since the names already exist by default.

   NOTE: *If you have a remote directory such as LDAP enabled, the common name of the LDAP group on the LDAP server must match the name of the Role assigned to the user on the Master.*

4. Enable the security access rights you want to provide to the role. By default, all of these options are disabled. See the *Role Permissions* section on page 70 for details.

5. Click the **Accept** button to save your changes to the target Master.

If there are no errors within any of the page parameters, a "Role added successfully" message displays at the top of the page.

NOTE: *Security changes made from within the web browser are applied instantly without the need to reboot.*

Viewing and Modifying Role Security Settings Details

Click any Role listed on the *Role Security Details* page to expand the view to show details for the selected user Role (FIG. 77):
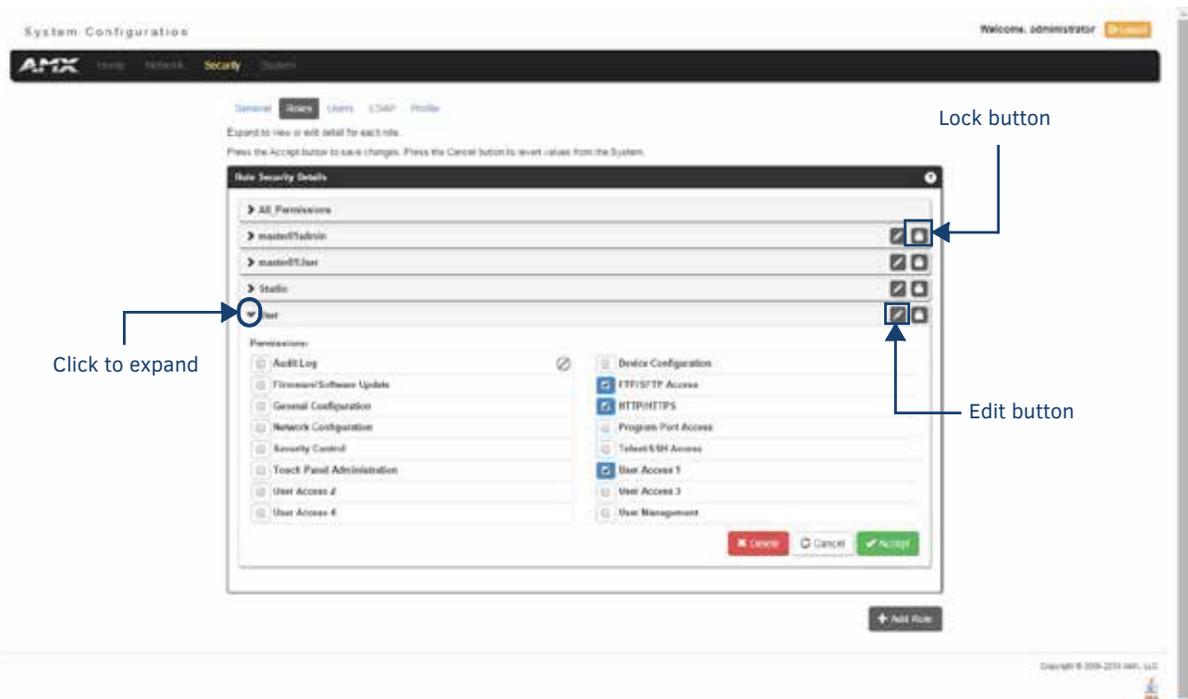
FIG. 77 Role Security Details Page

1. Select the **Roles** option (in the *Security* section) to open the Role Security Details page.

2. Click any Role listed on the *Role Security Details* page to expand the view to show details for the selected user Role.

3. Modify the previously configured access rights by enabling/disabling the check boxes. See the *Role Permissions* section on page 70 for details.

4. Click **Accept** to save your changes to the Master.

If there are no errors with the modification of any of this page's parameters, a "Role updated successfully" is displayed at the top of the page. **NOTE:** *The "All_Permissions" user name cannot be modified or deleted.*

Any properties possessed by roles (ex: access rights, update rights, directory associations, etc.) are inherited by users assigned to that particular role.

Unchecking a security option (which is available within the associated role) does not remove that right from the user. The only way to remove a role's available security right from a target user is either to not associate a role to a user or to alter the security rights of the role being associated.

Deleting a Role

1. Select the **Roles** option (in the *Security* section) to open the *Role Security Details* page.

2. Click the **Edit** button (see FIG. 77) for any Role listed on the *Role Security Details* page to expand the view to show details for the selected Role.

3. Click **Delete** to remove the selected role and refresh the page. The system will prompt you to verify this action - click **OK** to proceed.

If the role is associated with several users, you might get an error while trying to delete the role. If this happens, change the role association of those specific users utilizing the old role and either give them a new role or assign them (none) as a role. When you return to delete the desired role, you receive a message saying "Role deleted successfully".

4. Click the **Accept** button to save your changes to the Master.

Locking/Disabling a Role

1. Select the **Roles** option (in the *Security* section) to open the *Role Security Details* page.
2. Click the **Lock** button (see FIG. 77) for any Role listed on the *Role Security Details* page to lock and disable the Role.
   Click the Lock button again to unlock and enable the Role

NOTE: *Any Role can be disabled except for the All_Permissions role.*

Security - Users

Select the *Users* option on the Security Page to access the **User Security Details** page (FIG. 78). The options on this page allow authorized users to add/delete/lock User accounts and configure User's access rights. Locking a user account disables the account without deleting it.
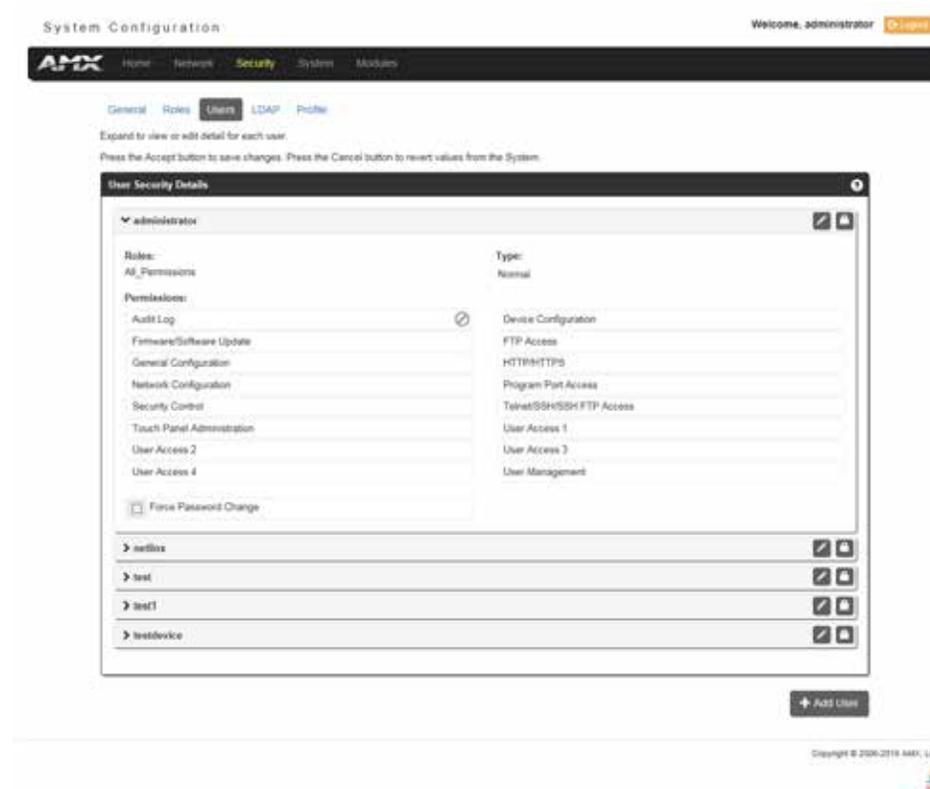
FIG. 78 Security - Users page

A **User** represents a single client of the Master, while a **Role** specifies a set of privileges and permissions which can be assigned to a user. An administrator can assign up to 5 roles to a single user. Any properties possessed by a role are inherited by all of the users assigned to the role.

Default User Accounts

By default, the NetLinx Master creates the following accounts, access rights, directory associations, and security options:

Default User Accounts	
administrator	netlinx
Username: administrator	Username: netlinx
Password: password	Password: password
Role: All_Permissions	Role: Studio
Directory Association: /*	Directory Association: none
NOTE: *You can delete and/or modify the "administrator" user account to optimize system security. If deleted, you can create a new user with the "administrator" user name with its own proper settings, provided LDAP is not enabled.*	**NOTE:** *The "netlinx" user account is compatible with previous NetLinx Master firmware versions. This account is initially created by default and can later be deleted or modified.*

- FTP Security is always enabled on the Masters.
- All other security options are **disabled** by default.

Adding a New User

TIP: *For a quicker configuration, it is recommended to define all roles and permissions before defining users.*

1. Select the **Users** option (in the *Security* section) to view the User Security Details page.
2. Click the **Add User** button (see FIG. 78) to access the **Add New User** page (FIG. 79).


FIG. 79 Add New User

3. In the **User Name** field, enter a unique name for the new role.
   - The name must be a unique alpha-numeric character string (4 - 20 characters), and is case sensitive.
   - The words "*administrator" and "NetLinx"* cannot be used since they already exist by default.

NOTE: *The Type field indicates the type of account for the user. This field lists either Normal or Device. Normal users are any users which access the web interface, Telnet, or NetLinx Studio, and must be assigned to a Role with those permissions assigned to it. Device connections are required for machine to machine over ICSP, such as touch panels and ICSLan device control boxes. Device-type users are stored only in the local user database and are able to be modified even when a remote directory service is enabled.*

4. From the **Roles** options menu, choose from a list of roles and associate the rights of the role to the new user. You can assign up to 5 roles to a user.
5. Enter a user password in both the **Password** and **Password Confirm** fields. The password must conform to the rules set by the Password Complexity level set on the User account. See the *Password Rules* section on page 64 for more information.
6. Select **Force Password Change** if you want the user to change its password on its next login. This option is not available for Device users.
7. Click the **Accept** button to save your changes to the Master.

NOTE: *Any security changes made to the Master from within the web browser are instantly reflected within a Terminal session without the need to reboot, unless otherwise notified.*

Viewing and Editing User Security Settings

Click any User listed in the *User Security Details* page to view the security settings for the selected User (FIG. 80):
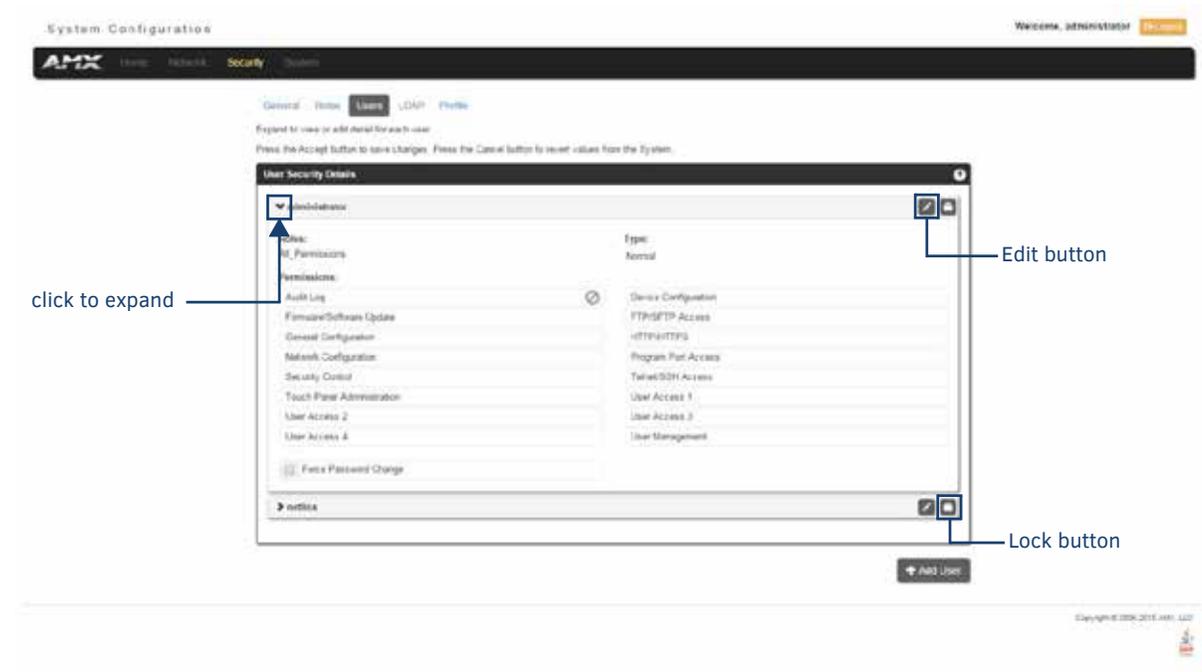
FIG. 80 Security - Users page

1. Click the Edit button for the User you want to edit to expand the User's details.

2. Make any necessary changes to the selected User, and click **Accept** for the changes to take effect.

Deleting a User

1. Select the **Users** options (in the *Security* section) to open the User Security Details page.

2. Click the Edit button for the User you want to delete to expand the User's details.

3. Press the **Delete** button to remove the selected User and refresh the page. The system will prompt you to verify this action - click **OK** to proceed.

4. Reboot the Master via the **Reboot** button on the Manage System Page (select the **System** control button to access).

Locking/Disabling a User

1. Select the **Users** option (in the *Security* section) to open the *User Security Details* page.

2. Click the **Lock** button (see FIG. 78) for any user listed on the *User Security Details* page to lock and disable the user. Click the Lock button again to unlock and enable the user.

Security Settings – LDAP

The LDAP page provides configuration and tests connection to a remote directory service via LDAPv3. The master supports the option of an insecure or secure connection. The secure option is supported via "LDAPS", or LDAP over SSL/TLS on port 636. Select the *LDAP* option on the Security Page to access the **LDAP Settings** page (FIG. 78). The options on this page allow authorized users to enable and modify LDAP security settings.

FIG. 81 Security - LDAP page

LDAP Options

All parameters are case sensitive and must be entered exactly as they are entered into the LDAP database. You can also perform LDAP Client Configuration via terminal commands to the NetLinx Master's Program Port - see the Enabling LDAP via the Program Port section in the NetLinx Programming Guide (available at www.amx.com) for details.

See Appendix A: LDAP Implementation Details in the NetLinx Programming Guide (available at www.amx.com) for additional information on implementing LDAP on the NetLinx Master. The LDAP options are described in the following table:

LDAP Options	
Option	Description
LDAP Enabled:	This parameter enables the LDAP configuration parameters described below. **NOTE:** *When LDAP is enabled, you can only create device users. If the administrator user has been deleted, you must perform a factory reset of the Master via pushbutton to restore the administrator user.*
LDAP URI	This parameter has the syntax ldap[s]://hostname:port. • The ldap:// URL is used to connect to LDAP servers over unsecured connections. • The ldaps:// URL is used to connect to LDAP server over Secure Sockets Layer (SSL) connections. • The hostname parameter is the name or IP address, in dotted format, of the LDAP server (for example, LDAPServer01 or 192.202.185.90). • The port parameter is the port number of the LDAP server (for example, 696). **NOTE:** *The standard unsecured port number is 389 and the standard secured port number is 636.*
LDAP BASE DN	This parameter specifies the Distinguished Name (DN) of an entry in the directory. It identifies the entry that is the starting point of the user search.
BIND DN	This parameter specifies the Distinguished Name (DN) to use to bind to the LDAP server for the initial search for the user's DN.
User Query Attr	This LDAP attribute is used for the AMX equipment user search (for example, UID). **NOTE:** *This attribute MUST be unique in the context of the LDAP BASEDN or the search will fail.*
Search Password	This is the password used for the initial bind to the LDAP server - it is the password associated with BIND DN.

Click the **LDAP enabled** check box to make the LDAP options available for selection.

- When LDAP is enabled, users are authenticated using the configuration set up on the LDAP server.
- The "*administrator*" user is handled by the local NetLinx Master, and does not connect to the LDAP server for user verification.
- If an administrator password change is desired, LDAP must be disabled, the password changed and saved and then LDAP re-enabled.
- Users may not be added or deleted via the web pages when LDAP is enabled.
- User access privileges cannot be changed via the web pages.
- As users log onto a NetLinx Master, their user name and access privileges are displayed on the User Security Details page (see *Security - Users* section on page 73). This information is stored in the master's RAM but is not written to non-volatile memory, and is lost after rebooting the Master.
- If a user is removed from the LDAP directory tree, access is denied, and if that user name is on the master's User Security Details web page it is removed.

Accepting Changes

Click the **Accept/Test** button to save changes on this page. Accepting changes is instantaneous and does not require rebooting the Master.

Testing the Connection to the LDAP Server

After entering and accepting the parameters, the **Accept/Test** button can be used to test the connection to the LDAP server. This test does a bind to the BIND DN using the Search Password entered. ● If the bind is successful, the message *Connection successful* is displayed.

- If the server could not be reached or the bind is unsuccessful, the message *Could not connect to server -- Please check LDAP URI, BIND DN and Search Password settings* is displayed.

Refer to Appendix A: LDAP Implementation Details in the NetLinx Programming Guide (available at www.amx.com) for additional information.

IMPORTANT: *For the NX-series Masters to work with LDAP over SSL (LDAPS), you must upload a CA server certificate in .pem format to the Master's FTP server. The certificate's file name must be "ldap_ad.pem" and the file must be saved in a folder named "certs". Once the file is uploaded, you must reboot the Master for the certificate file to be read and employed by the system. LDAPS requires Master Firmware version 1.3.78 or greater.*

Wired 802.1X support

IEEE 802.1X is an IEEE Standard for Port-based Network Access Control (PNAC). PNAC provides the ability to grant or deny network access to devices wishing to attach to a LAN based on credentials tied to the device rather than to a user. Until the device has been verified and permitted access, no network traffic is passed through the connected port, effectively keeping the device disconnected from the network.

The NX-Series controller acts as a supplicant (client device) to a wired 802.1X enabled network and presents customer-provided X.509 certificates to be allowed access to protected networks. The following EAP Encryption Methods are supported.

- PEAPv0/MSCHAPv2
- TTLS/MSCHAPv2
- TTLS/PAP
- MD5

Customer provided X.509 certificates are uploaded to the NX-Series controller using NetLinx Studio, and 802.1x is configured via the Command Line Interface and the syntax:

```
DOT1X[status|enable|disable]
```

Once you add the certificate file to your workspace, NetLinx Studio transfers the file to the appropriate directory on the controller.

1. Click to select (highlight) a System (in the Workspace tab of the Workspace Bar).

2. Right-click on the **Other** folder to access the Other File Folder context menu, and select **Add Existing Other File**.

3. In the Add Existing Other File dialog, locate and select the certificate file (.crt) that you want to add to the selected System. Change the Files of Type option to All Files (*.*) to look for other file types, if necessary.

4. Click **Open** to access the File Properties dialog, where you can view/edit general file information for the selected file.

5. Click **OK** to add the file to the selected System. The file should now appear in the Other folder under the selected System.

Security – Profile

The Profile page (FIG. 82) enables a user to see its own roles and permissions. The user cannot change the roles and permissions on this page. The Change Password option for user accounts is available on this page.
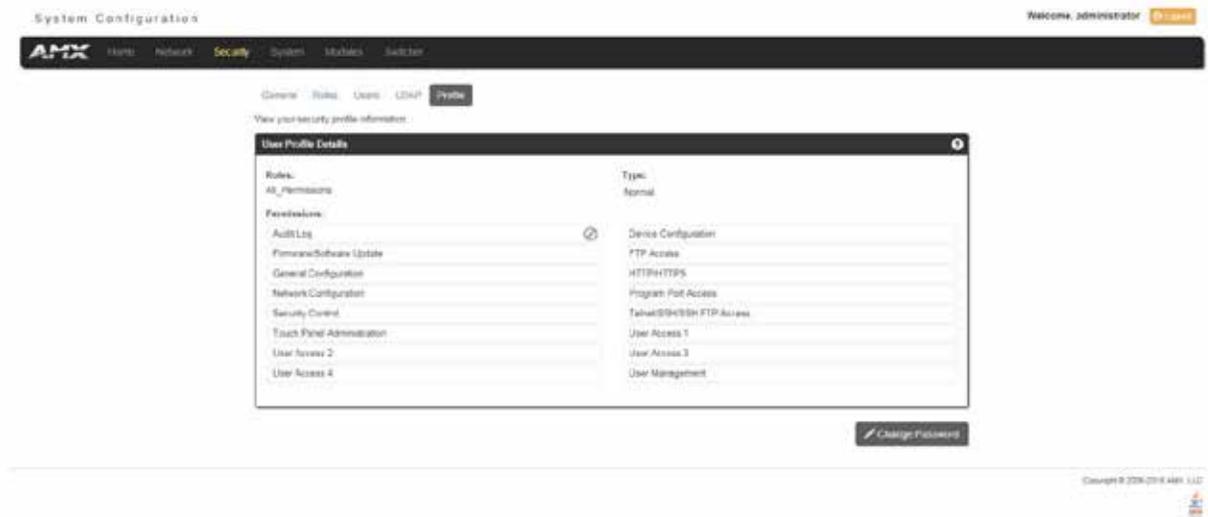
FIG. 82 Security - Profile page

Changing a User Account Password

Consult the *Password Rules* section on page 64 for password requirements for each level of security.

1. Select the **Profiles** option (on the Security page) to open the Profiles page.
2. Click **Change Password**. The Change Password window opens (FIG. 83).

FIG. 83 Change Password window

3. Enter the current password in the Old Password field.
4. Enter the new password in the New Password field, then enter it again in the Confirm Password field.
5. Click **Accept**.

WebConsole - System Options

System Overview

The *System* page is accessed by clicking **System** on the page's main heading. This page allows you to view and configure various aspects of the NetLinx System:

- **System Information** - Options on this page allow you to view a detailed list of the properties of the Master. See the *System - Info* section on page 80 for details.
- **Devices** - Options in this tab allow you to view the details of additional attached devices (including module-supported third-party devices). See the *System - Devices* section on page 81 for details.

NOTE: *This page is not available on the WebConsole for NCITE-813/813A devices. You can find the information listed on the Info tab on the Switcher - Status page for these devices. See the Status Page section on page 100 for more information.*

The default view for the System option is Manage System / System Number (FIG. 84).

FIG. 84 System - Info page

System - Info

The **Info** page (FIG. 84) enables you to view a detailed list of the properties of the Master. The properties include the Model ID and serial number of the Master, network addresses, and firmware versions. This information is view-only. See the *WebConsole - Network Options* section on page 56 for information on changing the network address of the Master.

System - Devices

The **Devices** page (FIG. 85) contains information about the Master and any connected devices. Select a device from the Device List and its information appears in the Device Information area. The information in this area is view-only, unless the device allows a change to its device number. If so, you can change the device number on this page (see *Changing the Device Number on a Device* below for more information.) Masters also include a system number which a user can change with proper access (see *Changing the System Number on the Master* below for more information.)
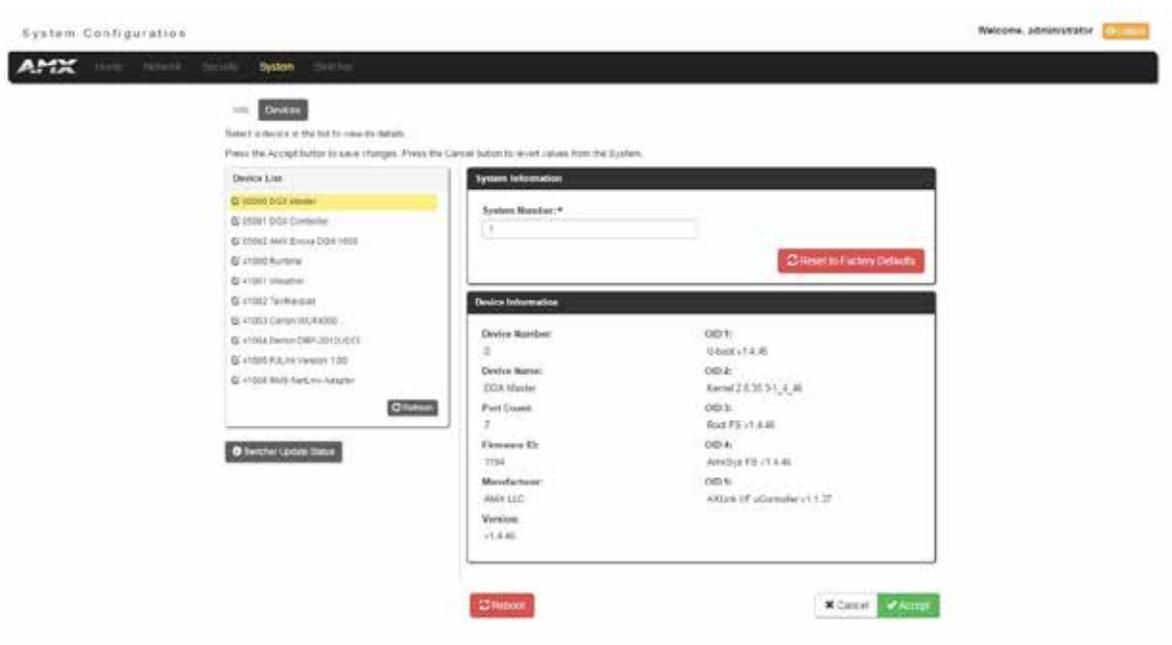
FIG. 85 System - Devices page

Changing the System Number on the Master

1. Select the Master from the Device List.

2. Enter the new numeric value into the **New System Number** field.

3. Click the **Accept** button to save this new value to the system on the target Master. The message "*System number changed to X. Master must be rebooted for the change to take effect.*" reminds you that the Master must be rebooted before the new settings take effect.

4. Click **Reboot** to reboot the target Master. The Device Tree then reads "*Rebooting...*". After a few seconds, the Device Tree refreshes with the current system information (including the updated system number assignment.) If the Device Tree does not refresh within a few minutes, press the **Refresh** button and reconnect to the Master.

Changing the Device Number on a Device

Note that in most cases, the Device Number for Masters should remain set to zero.

1. Select the device from the Device List. Ensure the device has a device number.

2. Enter the new numeric value into the **Device Number** field.

3. Click the **Accept** button to save this new value to the system on the target device.

Resetting the Master Controller to the Factory Defaults Configuration

Click the **Reset to Factory Defaults** button. Clicking the button resets the Master to its factory default state. Resetting to the factory default state includes the following tasks:

- Removing all security settings
- Removing all user files and recreating the *administrator* and *netlinx* user accounts
- Removing all roles and recreating the *All_Permissions* and *Studio* roles
- Resetting the IP address to DHCP
- Loading an empty NetLinx program

Once reset, the Master will be effectively in an out-of-box state.

NOTE: *It may be necessary to refresh the browser window after the master has finished booting (click Refresh).*

WebConsole - Modules Options

Modules Overview

The *Modules* page is accessed by clicking **Modules** on the page's main heading. This page allows you to view and configure various aspects of the NetLinx System:

- **Device Options** - Options on this page display various details specific to additional (non-NetLinx) System Devices. See the *Modules - Device Options* section on page 83 for details.
- **Bindings** - Options on this page allow you to view the details of additional attached devices (including module-supported third-party devices). See the *Modules - Bindings* section on page 84 for details.
- **User-Defined Devices** - Options on this page provide a listing with all of the dynamic devices that have been discovered in the system, and allow you to add and delete User-Defined Devices. See the *Modules - User-Defined Devices* section on page 87 for details.
- **Active Devices** - Options on this page allow you to check devices for compatible Duet Modules. See the *Modules - Active Devices* section on page 88.

The default view for the Modules option is Device Options (FIG. 86).
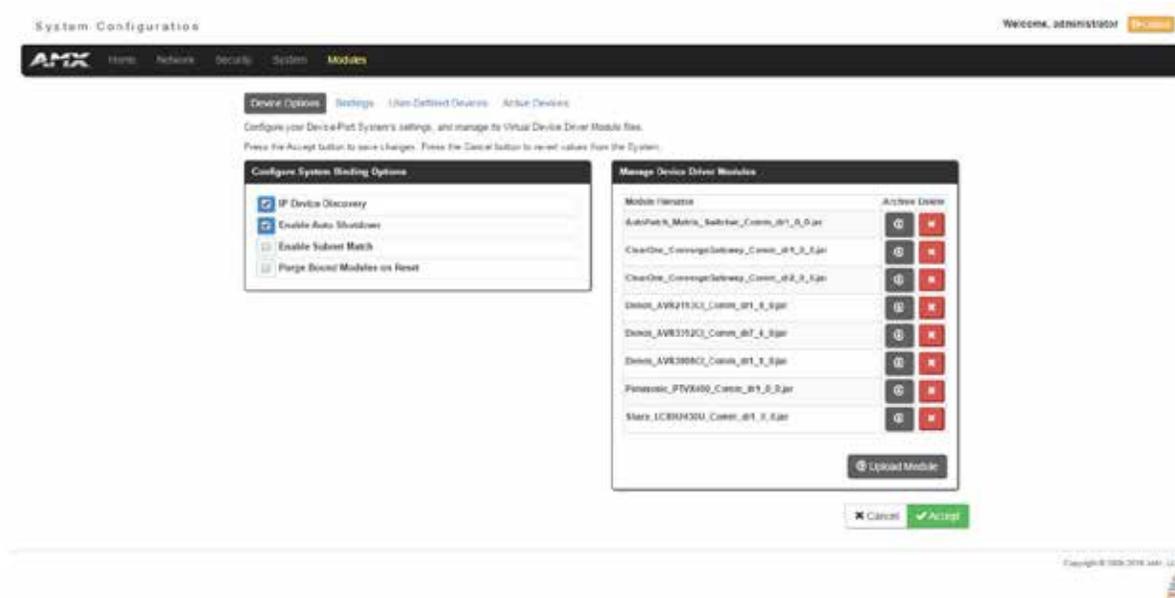
FIG. 86 Modules - Device Options page

NOTE: *This page is only available on the NCITE-813AC Presentation System.*

Modules - Device Options

Click the **Device Options** link (in the *Manage Devices* tab) to access the **Details for Additional Devices** page (FIG. 86). The options on this page display various details specific to additional (non-NetLinx) System Devices.

Configuring Device Binding Options

1. Use the **Configure System Binding Options** to specify how the Master will manage Bound Devices:

Configure System Binding Options	
Option	Description
IP Device Discovery	This option enables you to specify whether you want the Master to scan your network and locate any devices connected to it.
Enable Auto Shutdown	Auto-Shutdown forces the termination of modules that have lost communication with their respective physical device. This capability is needed for plug-and-play support.
	By default, Auto-Shutdown is enabled. If automatic termination of modules when they have lost communication is not desired, this selection should be disabled.
Enable Subnet Match	This selection allows you to specify whether or not IP devices should only be detected/discovered if they are on the same IP Subnet as the Master.
Purge Bound Modules on Reset	This selection indicates that all modules should be deleted from the bound directory upon the next reboot.
	During the binding process, the associated Duet modules for a device are copied from the /unbound directory into a protected /bound area.
	Due to the dynamic nature of Java class loading, it is not safe to delete a running .JAR file. Therefore, this selection provides the administrator the capability of removing existing modules upon reboot by forcing a re-acquisition of the module at bind time. This selection is a one-time occurrence. Upon the next reboot, the selection is cleared.

2. Press the **Accept** button to save your changes.

Managing Device Driver Modules

Use the **Manage Device Driver Modules** set of options to upload, archive, or delete modules from the Master. All modules currently present on the Master are indicated in the Module list.

Uploading a Module

Perform the following steps to browse for a Module file and then upload it to the Master:

1. Click **Upload Module** to browse for Duet Modules on your PC/Network.

2. Select the JAR file that you want to upload to the Master.

3. Click the **Open** button to upload a copy of the selected JAR file to the target Master's **/unbound** directory. Only JAR file types are allowed for Upload to the target Master.

Archiving a Module

Click the **Archive** button next to the module you want to archive. This action copies the selected module (*.JAR) file to your PC. Your PC may require you to confirm this action depending on its security settings.

Deleting a Module

Select a module and click the **Delete Module** button. This action deletes the selected module from the **/unbound** directory.

NOTE: *Any corresponding module within the /bound directory will not be deleted. Bound modules must be deleted via the Purge Bound Modules on Reset selection described in the Configure System Binding Options section.*

Modules - Bindings

Click **Bindings** to access the **Device Bindings** page (FIG. 87). Use the options on this page to configure application-defined Duet virtual devices with discovered physical devices.

FIG. 87 Modules - Bindings

The table on this page displays a list of all application-defined devices, including each device's "Friendly Name", the Duet virtual device's D:P:S assignment, the associated Duet Device SDK class (indicating the type of the device), and the physical device's D:P:S assignment. This information has to be pre-coded into the NetLinx file currently on the Master.

Configuring Application-Defined Devices

Elements such as DUET_DEV_TYPE_DISPLAY and DUET_DEV_POLLED are defined within the NetLinx.axi file.

The NetLinx.axi file contains both the new API definitions, as well as the pre-defined constants that are used as some of the API arguments (ex: DUET_DEV_TYPE_DISPLAY).

NOTE: *Physical device names are typically prefixed with "dv" and Virtual device names are typically prefixed with "vdv".*

Example Code:

```
PROGRAM_NAME='DDD'
DEFINE_DEVICE
COM1 = 5001:1:0
COM2 = 5001:2:0
dvDisplay = 41001:1:0 dvVideoProjector = 41002:1:0

DEFINE_CONSTANT
DEFINE_TYPE
DEFINE_VARIABLE
DEFINE_START


STATIC_PORT_BINDING(dvDisplay, COM1, DUET_DEV_TYPE_DISPLAY,     'statbcc Display', DUET_DEV_POLLED)


DYNAMIC_POLLED_PORT(COM2)

DYNAMIC_APPLICATION_DEVICE(dvVideoProjector, DUET_DEV_TYPE_VIDEO_PROJECTOR,    'statbcc Serial Projec-
tor')

(*************************************************************)
(*                  THE EVENTS GO BELOW                     *)
(*************************************************************) DEFINE_EVENT

DATA_EVENT [dvVideoProjector]
{
    // Duet Virtual device data events go here }
```

You can find this example code within the DEFINE_START section of your code. This code is reflected in the first two entries listed in FIG. 87. The code gives the Master a "heads-up" notification to look for those devices meeting the criteria outlined within the code.

Application Devices and Association Status

There are two types of application devices: **Static Bound** application devices and **Dynamic** application devices:

- **Static Bound** application devices specify both a Duet virtual device and its associated Device SDK class type, as well as a NetLinx physical device port to which the application device is always associated (i.e. statically bound).
- **Dynamic** application devices specify both the Duet virtual device and its associated Device SDK with no association to a physical port. Binding of an application device to a physical device/port occurs at run-time (either via auto-binding or manual binding).

Application devices that have a "bound" physical device display their physical device ID within the **Physical Device** column. If an associated Duet module has been started to communicate with the device, its associated property information is displayed in a mouse-over popup dialog when the cursor hovers over the physical device ID (see FIG. 88). Each entry in the table has one of four buttons to the right of the Physical Device D:P:S assignment:

- **Static Bound** application devices will either be **blank,** or display a **Release** button:
  - Static Bound application devices that have not yet detected a physical device attached to their associated port have a blank button.
    - Once a physical device is detected and its associated Duet module has been started, a Release button appears. Click Release to force the associated Duet module to be destroyed. The firmware then returns to detecting any physical devices attached to the port.
- **Dynamic** application devices either display a **Bind** or **Unbind** button:
  - Dynamic application devices that have been bound display an Unbind button. When you select Unbind, any associated Duet module is destroyed and the "link" between the application device and the physical device is broken.
  - Dynamic application devices that have not been bound to a physical device display a Bind button. When this button is selected, a secondary display appears with a listing of all available unbound physical devices that match the application device's Device SDK class type.

NOTE: *If a currently bound device needs to be replaced or a Duet Module needs to be swapped out, the device should be unbound and the new module/driver should then be bound.*

The administrator/user can select one of the available physical devices to bind with the associated application device. When you click **Accept**, the binding is created and the target Master attempts to locate the appropriate Duet Module driver. Once the Master locates a driver, the Duet Module started and becomes associated with the specified application device (Duet virtual device). If the you click **Cancel** button, the binding activity aborts.

NOTE: *If the manufacturer device does not support Dynamic Device Discovery (DDD) beaconing, you must use the Add Device page to both create and manage those values necessary to add a dynamic physical device. This process is described in detail in the Modules - User-Defined Devices section on page 87.*

Viewing Physical Device Properties

Hold the mouse cursor over the Physical Device entry in the table to display detailed device properties for that device in a pop-up window (FIG. 88). You can only view the device properties for bound devices.

FIG. 88 Device Bindings - Device Properties pop-up

Modules - User-Defined Devices

Click the **User-Defined Devices** link (in the *Manage Devices* tab) to access the **User-Defined Devices** page (FIG. 89). This page provides a listing with all of the dynamic devices that have been discovered in the system, and allows you to add and delete User-Defined Devices.
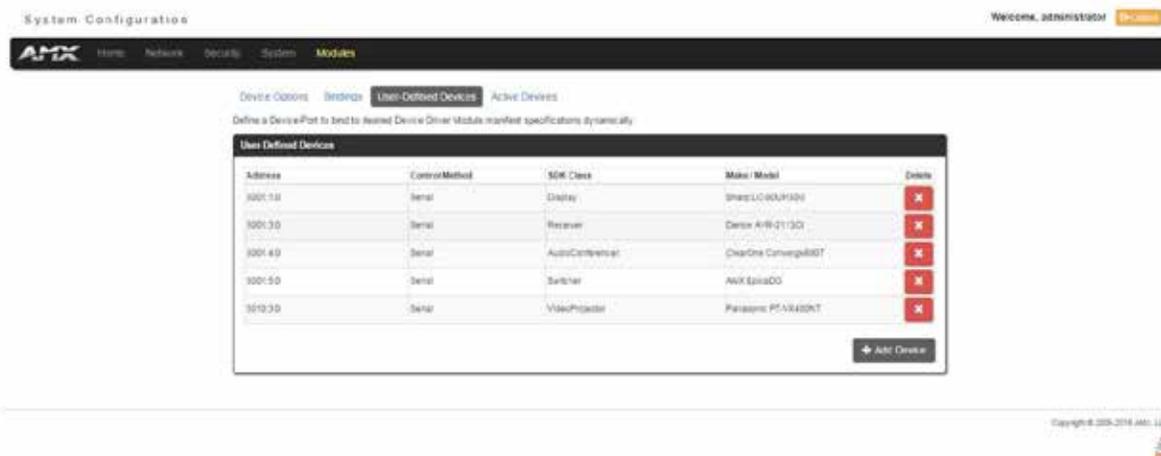
FIG. 89 Modules - User-Defined Devices

Adding a User-Defined Device

1. Click the **Add Device** button (in the User-Defined Devices page) to access the **Add User Defined Device** page (FIG. 90):

FIG. 90 User-Defined Devices - Add New Device

2. Fill in the device information fields, as described in the following tables:

User-Defined Device Information Fields	
Address:	Enter the address of the physical device in the Address field. This information can be either the NetLinx Master port value (D:P:S) or an IP Address (#.#.#.#).
Control Method:	Use the drop-down list to select the control method associated with the physical target device (IR, IP, Serial, Other).
SDK Class:	Use the drop-down list to select the closest Device SDK class type match for the physical target device. The SDK Class Types table on page 88 provides a listing of the available choices.
GUID:	Enter the manufacturer-specified device's GUID (Global Unique Identification) information. You must specify either the GUID or Make/Model.
Make:	Enter the name of the manufacturer for the device being used (ex: Sony, ONKYO, etc.) • Up to 55 alpha-numeric characters • Spaces in the name will be converted to underscores.
Model:	Enter the model number of the device being used (ex: Mega-Tuner 1000). You can enter up to 255 alpha-numeric characters.
Revision	Enter the firmware version used by the target device. Text is required within this field. The version must be in the format: major.minor.micro (where major, minor, and micro are numbers). An example is: 1.0.0 (revision 1.0.0 of the device firmware).

SDK Class Types			
Amplifier	Digital Video Recorder	MultiWindow	Text Keypad
AudioConferencer	Disc Device	PoolSpa	TV
AudioMixer	Display	PreAmp Surround Sound Processor	UPS
AudioProcessor	Document Camera	Receiver	Utility
AudioTape	HVAC	RelayDevice	VCR
AudioTunerDevice	IODevice	RFID System	Video Conferencer
Camera	Keypad	Security System	Video Processor
Digital Media Decoder	Light	Sensor Device	Video Projector
Digital Media Encoder	Light System	Set Top Box	Video Wall
Digital Media Server	Monitor	Slide Projector	Volume Controller
Digital Satellite System	Motor	Switcher	Weather

3. When you are finished with creating the profile for the new device, click the **Add Property** button to access the **Name** and **Value** fields property information for association with the new User Defined Device. This information appears in the Physical Device Properties for each device. See the *Viewing Physical Device Properties* section on page 89 for more information.

4. Click the **Accept** button. The new device is indicated in the list of discovered physical devices (in the *User-Defined Devices* page).

Modules - Active Devices

Click the **Active Devices** link (in the *Manage Devices* tab) to access the **Active Devices** page (FIG. 91). The options on this page allow you to check devices for compatible Duet Modules.

FIG. 91 Modules - Active Devices
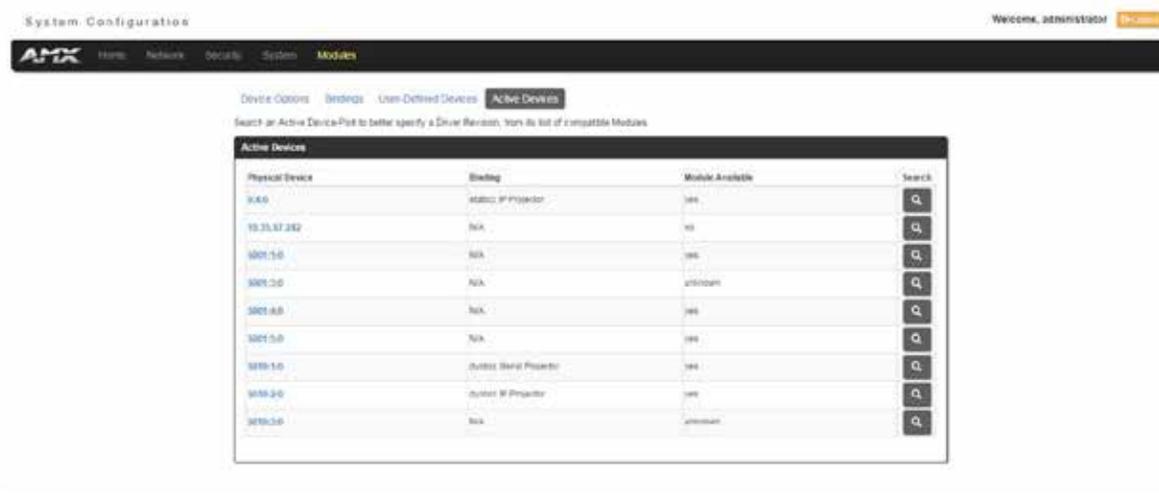
Searching For All Compatible Duet Modules for a Selected Device

1. Click the Search button for any device to search for a Duet Module for that particular device. This action initiates a search for compatible modules. Modules that are retrieved from either the Internet or from the manufacturer's device are then placed into the **/unbound** directory and automatically overwrite any existing module of the same name.

   If the device specified a URL in its DDD beacon, the file is retrieved from the URL either over the Internet or from the physical device itself, provided the device has an inboard HTTP or FTP server.

2. Once a list of all compatible modules is compiled, the list of available Duet Modules appears on this page. Each module is listed with its calculated "match" value. The greater the "match" value, the better the match between the Duet Module's properties and the physical device's properties.

3. Select a module and click the **Accept** button to associate the selected Duet module with the physical device. **NOTE:** *This action will not affect any currently running Duet module associated with the physical device. The module is associated with the device upon reboot.*

Viewing Physical Device Properties

Hold the mouse cursor over the **Device** entry in the table to display detailed device properties for that device, in a pop-up window (FIG. 92).

FIG. 92 Active Devices - Device Properties pop-up

WebConsole - Switcher Options

Switcher Overview

The *Switcher* page (FIG. 93) is accessed by clicking **Switcher** on the page's main heading. This page allows you to route the system's inputs to its outputs during system setup:

- **Configuration** - Options on this page allow you to configure audio and video inputs and outputs. See the *Configuration Page* section on page 91 for details.
- **Status** - Options on this page allow you to check a number of the switcher's components and their states. See the *Status Page* section on page 100 for more details.
- **Windows** - Options on this page allow you to set options for transitioning between video outputs or setting up Picture in Picture (PIP). See the *Windows Page* section on page 101 for more details.
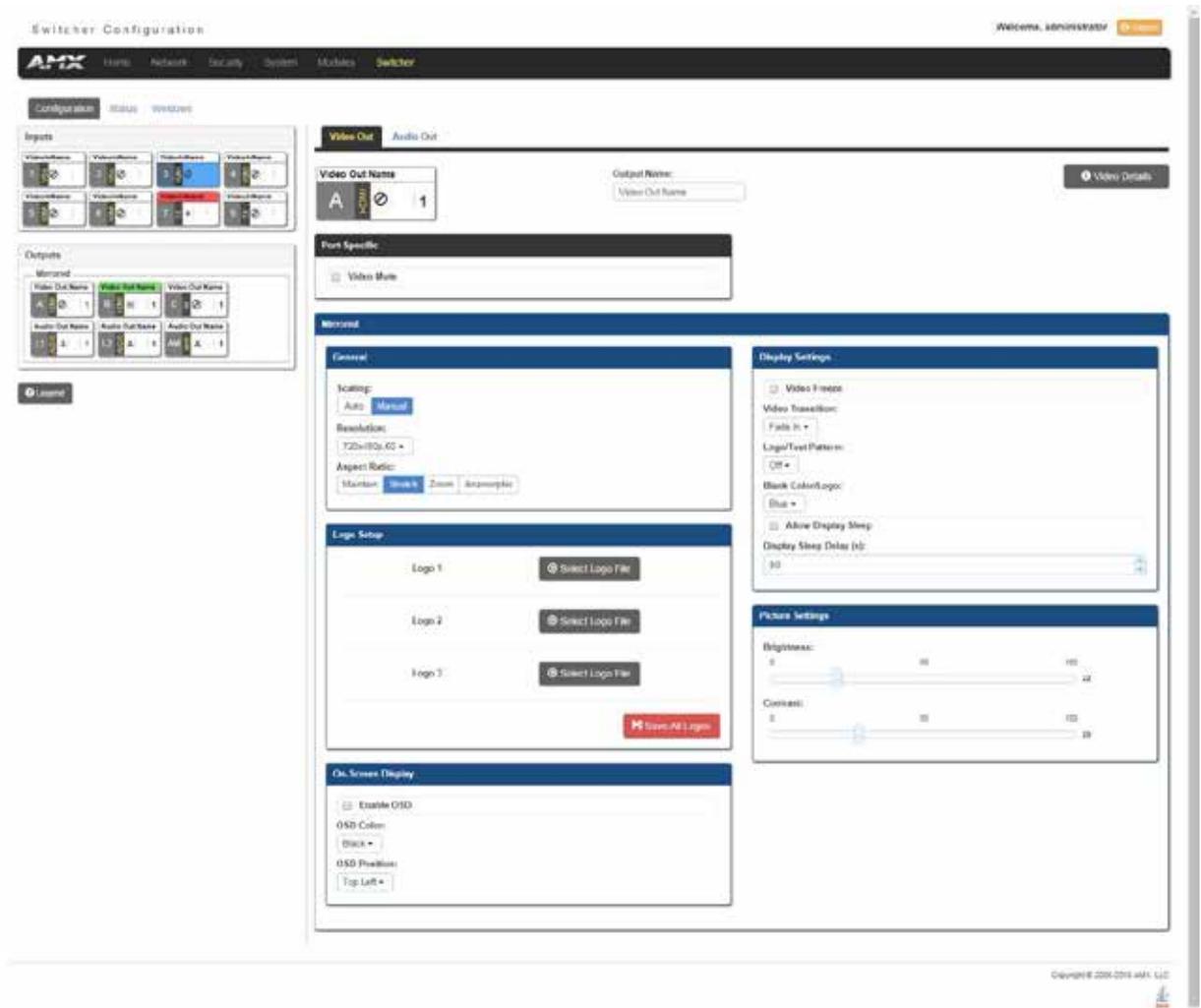
FIG. 93 Switcher page

Each input and output can be labeled by filling in the Input Name or Output Name field on the respective Video or Audio tab on the Configuration page.

Configuration Page

The Configuration page is used to configure inputs and outputs in the system. The most recently selected input or output displays in the Configuration page. The Configuration page displays the Switching page components on the left. Note that the components are active, i.e., they can be used for all switching functionality.
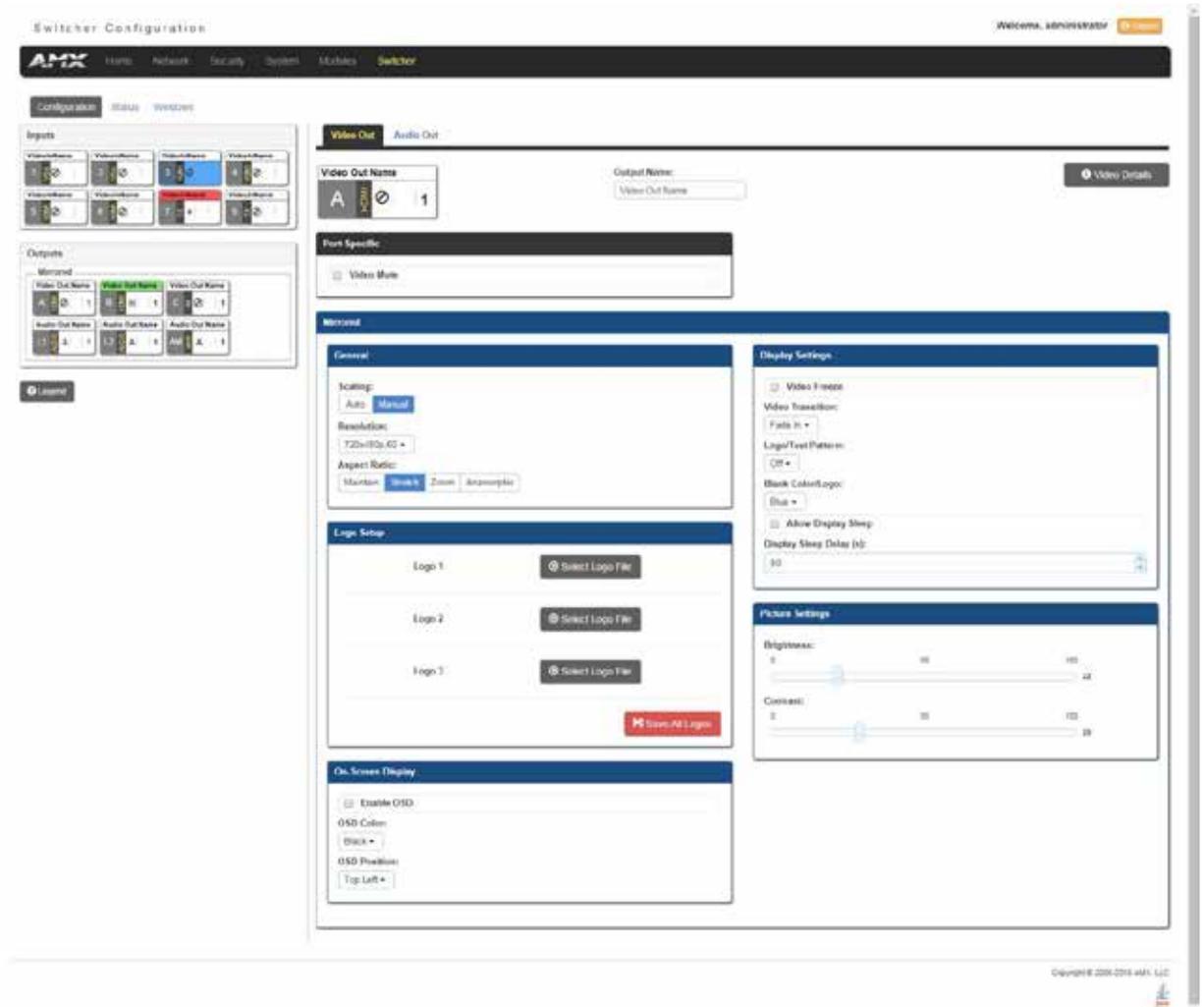
FIG. 94 Configuration page allows configuration of inputs and outputs

Configuration Components

The Configuration page features the following components:

Inputs section – This section contains buttons for each of the available input signals in the system. Click the input button that needs to be switched.

Outputs section – This section contains buttons for each of the available output signals in the system. Note that when the currently selected button is an output, it also appears in the Configuration page with signal details (for button/signal details, click the Legend button).

Legend button – Click to open an additional window tab (Audio/Video Legend) which displays the legend key with details regarding the state of the input (source) and output (destination) connections. The browser tab opens in a tearaway tab/window that can be dragged and dropped as a standalone desktop window for side-by-side reference with the Switcher/Configuration pages.

NOTE: *The label on the title bar can be edited in the Input or Output Name field on the Configuration page.*
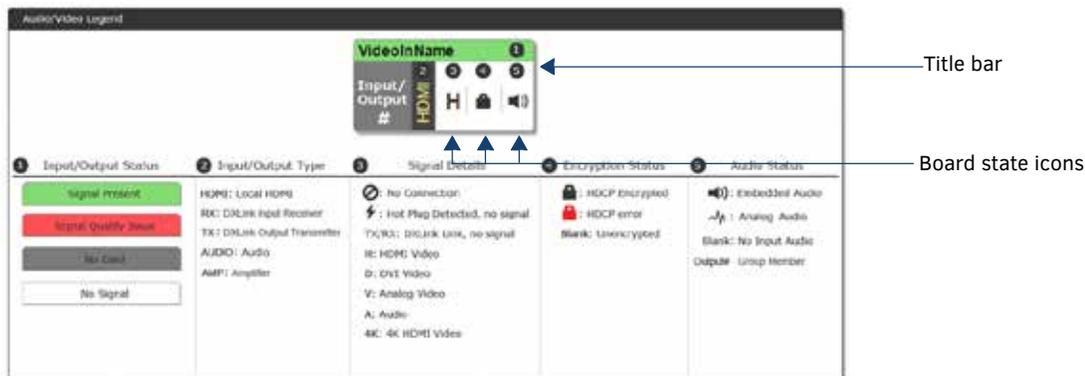
Any changes made in the Configuration page occur instantaneously on the attached devices. In addition, when you select an input or an output on the left, the options on the right side of the page change to reflect the current settings. Configuration is not affected by power loss, restarting the enclosure, or upgrading the firmware.

Input and **Output** buttons are selected individually for configuration.

Video (default) and **Audio** tabbed views – click tabs to configure the video or audio signal that is selected on the Configuration page. The signal will be either input or output depending on the Config Viewer button selection. The setting options vary depending on the signal.

Selecting any video or audio signal button will display corresponding information as follows:

Input or **Output** button – an enlargement of the button selected under Switching (or from the Switching page) appears on the Configuration side with the source name and number, plus signal details (for an explanation of the button's details, click the Legend button).

Input Name or **Output Name** field – use to label the buttons in the Switching pane (and on the Switching page). Type the name in the field and press Enter on the keyboard.

Video Settings

Video settings display when the Switch Mode is A/V or Video, the Video tabbed view is selected, and a specific input or output is selected.

Inputs

- General:

- Resolution – Displays Resolution (read-only).
- EDID Mode – From the drop-down list, select the resolution type (4K, 4K60, All HD Resolutions, HD Wide-Screen, HD Full-Screen, or Mirror Out (1-3)).
- Preferred EDID – From the drop-down list, select the specific resolution/refresh rate.
- HDCP Setting:

- HDCP Compliance – If desired, click the check box to enable compliance.

Outputs

- General:

- Scaling (Mode) – Click the button for the mode (Auto or Manual)
- Resolution – From the drop-down list, select the resolution/refresh rate.
- Aspect Ratio – Click Maintain, Stretch, Zoom, or Anamorphic.

- Display Settings:

- Video Freeze – Click the check box to freeze the video.
- Video Transition – From the drop-down list, select a transition between the previously selected video input and the currently selected video input. You can choose from Diag Top Left, Diag Top Right, Diag Bottom Left, Diag Bottom Right, Horiz From Left, Horiz From Right, Vert From Top, Vert From Bottom, and Fade In.
- Logo/Test Pattern – From the drop-down list, select Off, Color Bar, Grill 1:1, Border, Gray Ramp, SMPTE Bar, or Logo (1-3).
- Blank Color/Logo – From the drop-down list, select Black, Blue, or Logo (1-3).
- Allow Display Sleep – Click the check box to place the display in sleep mode after the number of seconds you set in the Display Sleep Delay field.
- Display Sleep Delay(s) – Use the up-and-down arrow buttons to set the sleep delay, in seconds.

- Logo Setup:

Logo Setup

Logo 1	⊕ Select Logo File
Logo 2	⊕ Select Logo File
Logo 3	⊕ Select Logo File

⊟ Save All Logos

- Select Logo File – Click to search and locate a logo file on a local or network drive.
- Save All Logos – Click to save all logos that you loaded.
- On-Screen Display:

On-Screen Display

☐ Enable OSD

OSD Color:
Black ▾

OSD Position:
Top Left ▾

- Enable OSD – Click the check box to enable.
- OSD Color – From the drop-down list, select Black, Blue, White, or Yellow.
- OSD Position – From the drop-down list, select Top Left, Top Right, Bottom Left, or Bottom Right.
- Picture Settings:

Picture Settings

Brightness:
0   50   100
                                    22

Contrast:
0   50   100
                                    29

- Brightness – Use the slider bar to adjust (range: 0 to 100).
- Contrast – Use the slider bar to adjust (range: 0 to 100).

Audio Settings

Audio settings display when the Audio tabbed view is selected, and a specific input or output is selected. The audio settings can be used to configure any digital signal processing required for the audio signal that is selected in the Switching view.

Inputs

- Analog Audio – Click to enable analog as the audio format of the selected audio input.

☐ Analog Audio

- General:

General

Stereo | Mono

Input Gain (dB):
-24   0   24
                              0

Encoding:
PCM

- Stereo or Mono buttons – Click either to select the audio mode. Setting this option to Mono audio on the input results in the left channel being sent to both the left and right output channels.
- Input Gain (dB) – Use the slider bar to adjust (-24 dB to +24 dB),
- Encoding – PCM (read only)

- Compression:
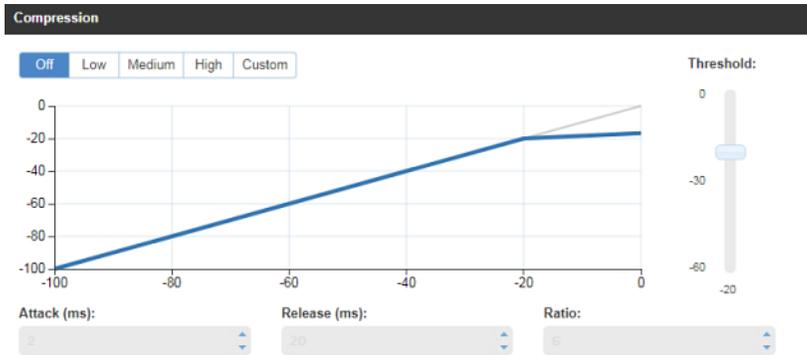
- Buttons at top – Click Off, Low, Medium, High, or Custom.
- Threshold – Use the slider bar to adjust (range: 0 to -60).
- Attack (ms), Release (ms), and Ratio – Adjust the values in the boxes (either enter values or use the arrows)

NOTE: *When in Low, Medium, or High, changes to any of the other Compression settings will automatically change the Compressor mode to Custom.*

Microphone

Microphone settings are available on the Audio Input tab.

- Mode

- Dual Mono/Single Stereo – Click to select Single Stereo or Dual Mono microphone mode. Select Single Stereo to adjust both microphone inputs or Dual Mono Mode to adjust the microphone settings individually.
- L/R Adjustment

- Enable – Click to activate the microphone.
- Phantom Power – Click to activate Phantom Power on the microphone.
- PreAmp Gain – Use the lever to adjust the preamp gain level of the microphone input. You can set the gain from 0 to +65dB in 1dB increments.
- Gain – Use the lever to adjust the gain level of the microphone input. You can set the gain from -24 to 24dB in 1dB increments.
- Equalizer – Click Enabled to turn on the equalizer settings. Use the options to set the Band, Filter, Frequency, Gain, and Q settings.
- Gating – Use the slider bar to adjust the Threshold setting (range: 0 to -60). Adjust the values in the boxes for the Attack, Release, Depth, and Hold Off settings (either enter values or use the arrows).
- Limiter – Use the slider bar to adjust the Threshold setting (range: 0 to -60). Adjust the values in the boxes for the Attack and Release settings (either enter values or use the arrows).
- Compression – Use the slider bar to adjust the Threshold setting (range: 0 to -60). Adjust the values in the boxes for the Attack, Release, and Ratio settings (either enter values or use the arrows).
- Show Audio Levels – Click to open a new window tab which displays the Level Meter for the microphone and audio input.

Outputs

- Port-Specific:

Port-Specific

Encoding:
PCM

Test Tone Enable:
Disable Enable

Output Volume:
☐ Mute
-100   -50   0
                            0

Min/Max:
-100   -50   0
                            -100, 0

- Encoding – PCM (read only).
- Test Tone Enable – Click Disable or Enable.
- Mute – Click Mute if desired. Changing the volume level will not un-mute the signal; however, the new volume level is saved and when the Mute button is deselected, the volume returns at the new level.
- Output Volume (0 to 100)
- Min/Max (0 to 100)
- Global:

Global

Test Tone Generator:
Off ▾

- Test Tone Generator – from the drop-down list, select Off, 60Hz, 250Hz, 400Hz, 1kHz, 3kHz, 5kHz, 10kHz, Pink Noise, or White Noise.

Audio Group

Audio Groups enable you to create a group of audio ports in which all adjustments affect each individual port within the group. For example, if an audio group contains audio ports 1, 3, and 5 and you click Group Mute, the audio on ports 1, 3, and 5 become muted.

- Mode:

Mode

Group 1 ▾

- Select the group you want to work with from the drop-down menu.
- Adjustment:

Adjustment

Output Format:
Stereo Mono

Group Volume:
☐ Group Mute
-100   -50   0
                            -43

Balance:
-20   0   20
                          20

Sync Delay (ms):
0   100   200
                        32

- Output Format – Click Stereo or Mono.
- Group Mute – Click to mute the audio on all devices in the group.
- Group Volume (-100 to 0, left to right)
- Balance (-20 to 20, left to right)
- Sync Delay (ms) (0 to 200).

● Mix:
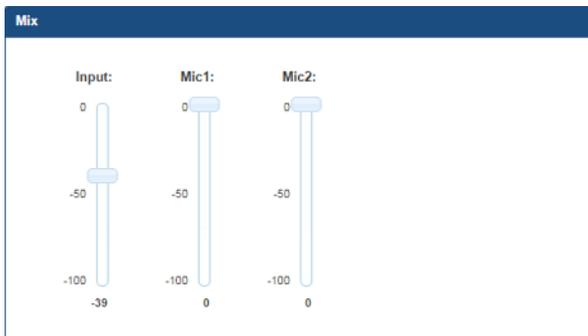
- ● Input – Use the slider to adjust the mix level of the audio input for the audio group.
- ● Mic1 and Mic2 – Use the sliders to adjust the mix level of the microphone for the audio group.
● 10-Band Parametric Equalizer:
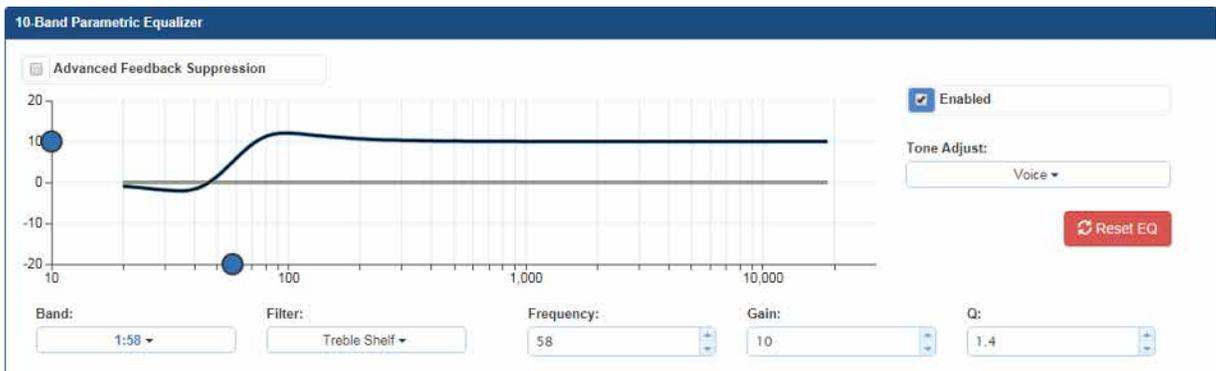
- ● Advanced Feedback Suppression – Click to activate.
- ● Enabled – This check box must be selected before the Equalizer options are available. On reboot, the Enabled box always returns to the checked (default) state. To disable the Equalizer options over a reboot, set the "y" (vertical) vertex to 0 (zero).
- ● Tone Adjust – Use the drop-down box to select: Off, Voice, Music, or Movie (Tone Adjust is applied on top of any equalizer adjustments).
- ● Reset EQ – Click this button to reset the all of the Equalizer values.
- ● Blue Handles – Use the sliders (blue handles) to adjust Equalizer values.
- ● The following drop-down lists can also be used to adjust Equalizer values.
- ● Band – Numbered from 1 to 10.
- ● Filter – The options are Bell, Band Pass, Band Stop, High Pass, Low Pass, Treble Shelf, and Bass Shelf.
- ● Frequency – The adjustment range is from 20 to 20000 (Hz).
- ● Gain – The adjustment range is from -12 to 12.
- ● Q – The adjustment range depends on the filter selected:

Bell = 0.1 to 20
Band Pass = 0.1 to 20
Band Stop = 0.1 to 20
High Pass = 0.5 to 1.4
Low Pass = 0.5 to 1.4
Treble Shelf = 0.5 to 1
Bass Shelf = 0.5 to 1

- Ducking:
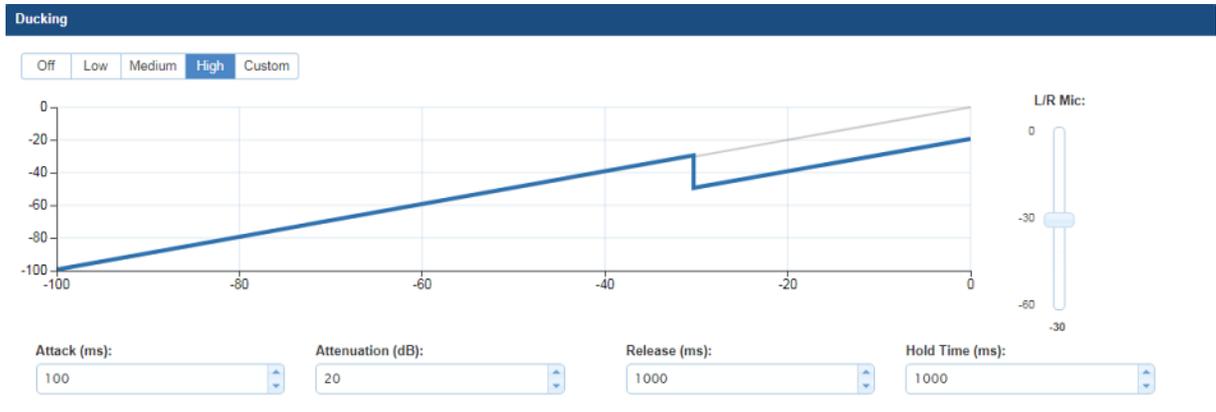
- Buttons at top – Click Off, Low, Medium, High, or Custom.
- L/R Mic – Use the slider bar to adjust (range: 0 to -60).
- Attack (ms), Attenuation (dB), Release (ms) and Hold Time (ms) – Adjust the values in the boxes (either enter values or use the arrows)

Selecting an Audio Test Tone

Selecting a test tone for your input source can help determine if you have your audio devices connected correctly.

Perform these steps to select a test tone:

1. Connect to your Presentation System via WebConsole.

2. Select the **Switcher** tab.

3. On the Switcher page, select the **Configuration** tab (see FIG. 95).
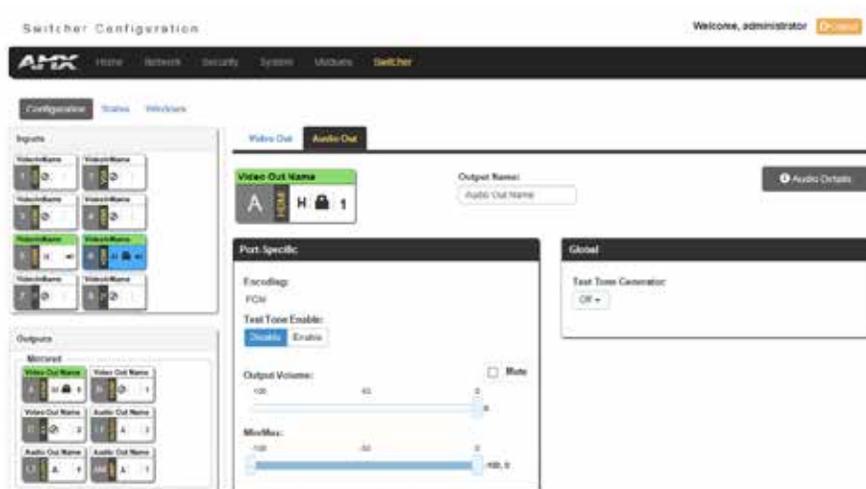
FIG. 95 WebConsole - Switcher Configuration page

4. Select an output on the left side of the WebConsole.

5. Click the **Audio Out** tab.

6. In the Global area, use the **Test Tone Generator** menu to select a test tone.

7. In the Port-Specific area, select **Enable** under Test Tone Enable.

Changing the Video Output Resolution

Perform these steps to change the video output resolution:

1. Connect to your Presentation System via WebConsole.

2. Pass your pointer device over the **Switcher** tab so the drop-down menu appears, then select **Configuration**. The **Configuration** page opens, and the Video Out tab appears by default (see FIG. 96).
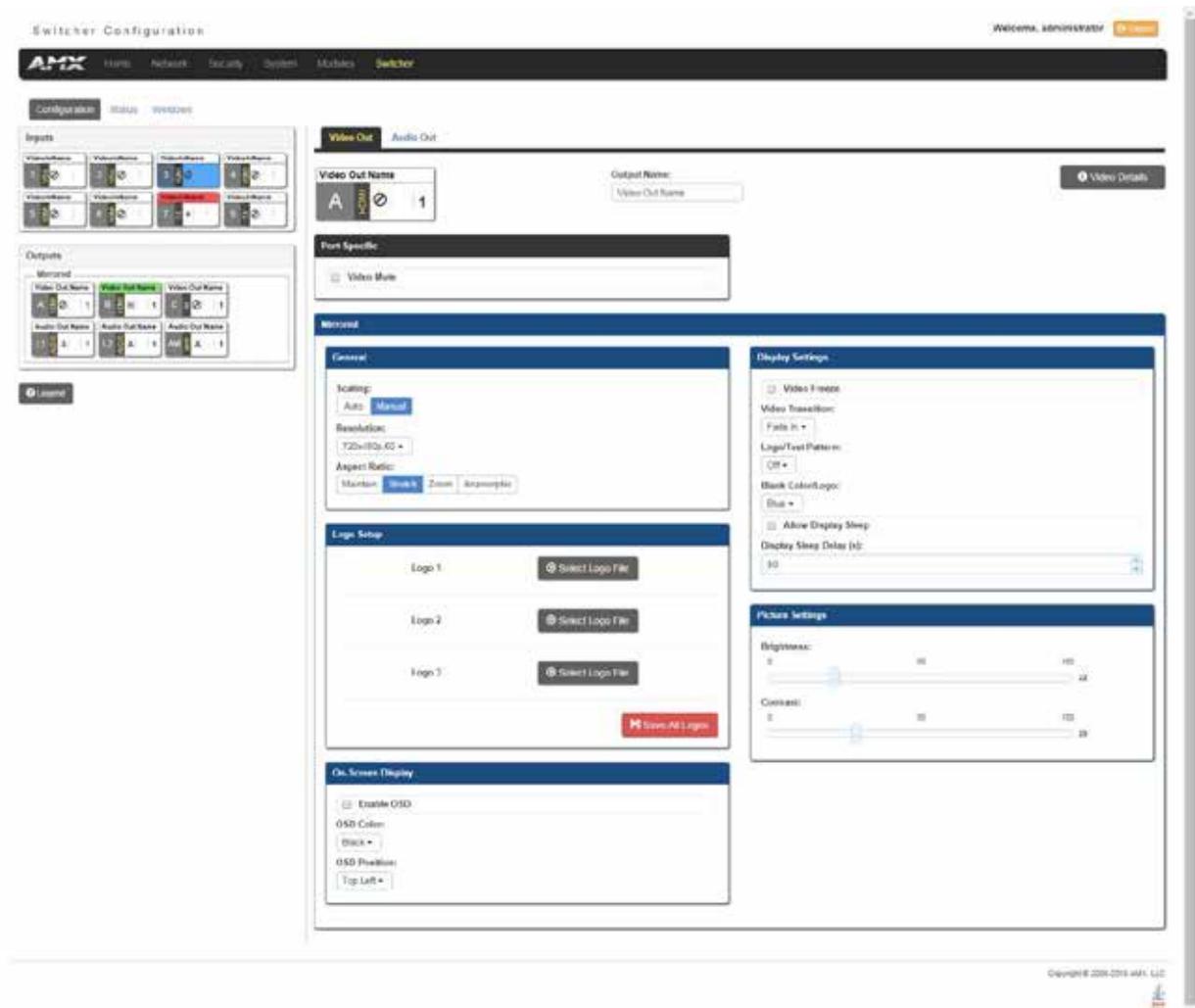
FIG. 96 WebConsole - Switcher Configuration page

3. In the General section, use the Resolution drop-down menu to select a resolution. Your selection takes effect immediately.

Changing the Output Aspect Ratio

Perform these steps to change the output aspect ratio:

1. Connect to your Presentation System via WebConsole.

2. Pass your pointer device over the **Switcher** tab so the drop-down menu appears, then select **Configuration**. The **Configuration** page opens, and the Video Out tab appears by default (see FIG. 96).

3. In the General section, click the button you want for the aspect ratio. Your selection takes effect immediately.

Selecting a Video Test Pattern

Selecting a test pattern for your input source can help determine if the displays are connected correctly. Perform these steps the select a test pattern:

1. Connect to your Presentation System via WebConsole.

2. Pass your pointer device over the **Switcher** tab so the drop-down menu appears, then select **Configuration**. The **Configuration** page opens, and the Video Out tab appears by default (see FIG. 96).

3. In the Display Settings section, use the Logo/Test Pattern drop-down menu to select a test pattern or logo image to display on the video output.

Status Page

The Status page (FIG. 97) is used to check a number of the switcher's components and their states. The components (from top to bottom of page) display status for alarms, fan speed, and device temperature. Firmware versions and the current microphone mode are also available on this page. On this page, you can access options for locking the front panel, enabling the 70V amplifier, enabling auto switching, and muting all video displays.
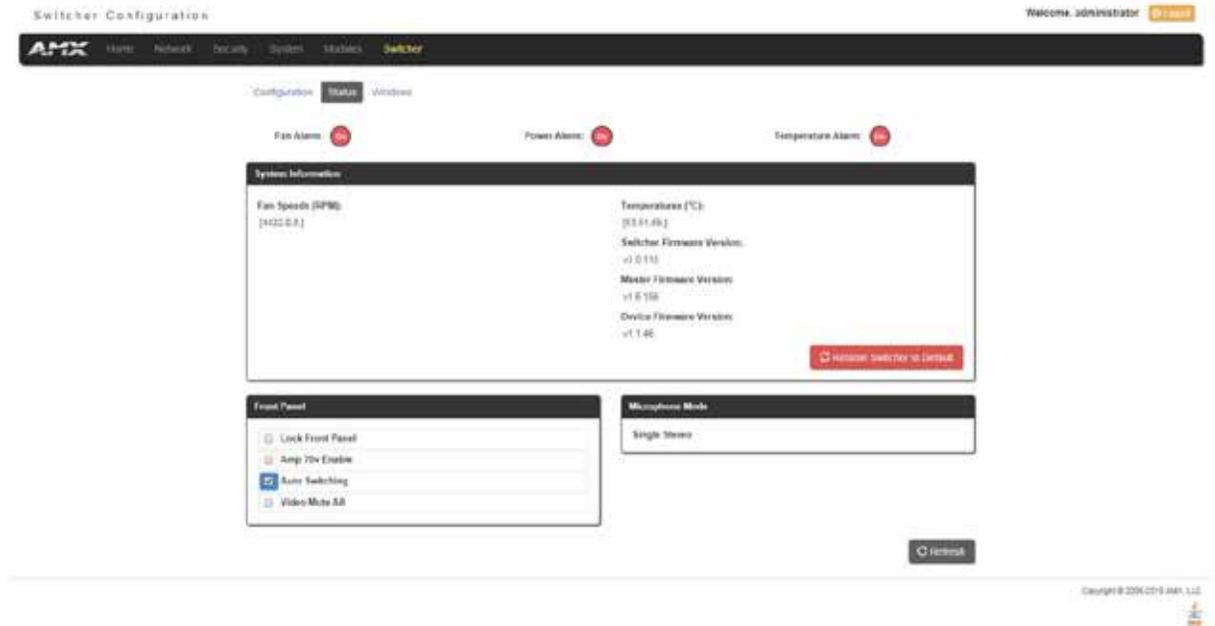
FIG. 97 Switcher - Status page (NCITE-813AC)

NCITE-813/813A devices have a slightly different version of this page with more system information available. The additional information you see on this page is available on the System - Info page on the NCITE-813AC (see the *System - Info* section on page 80 for more information.)
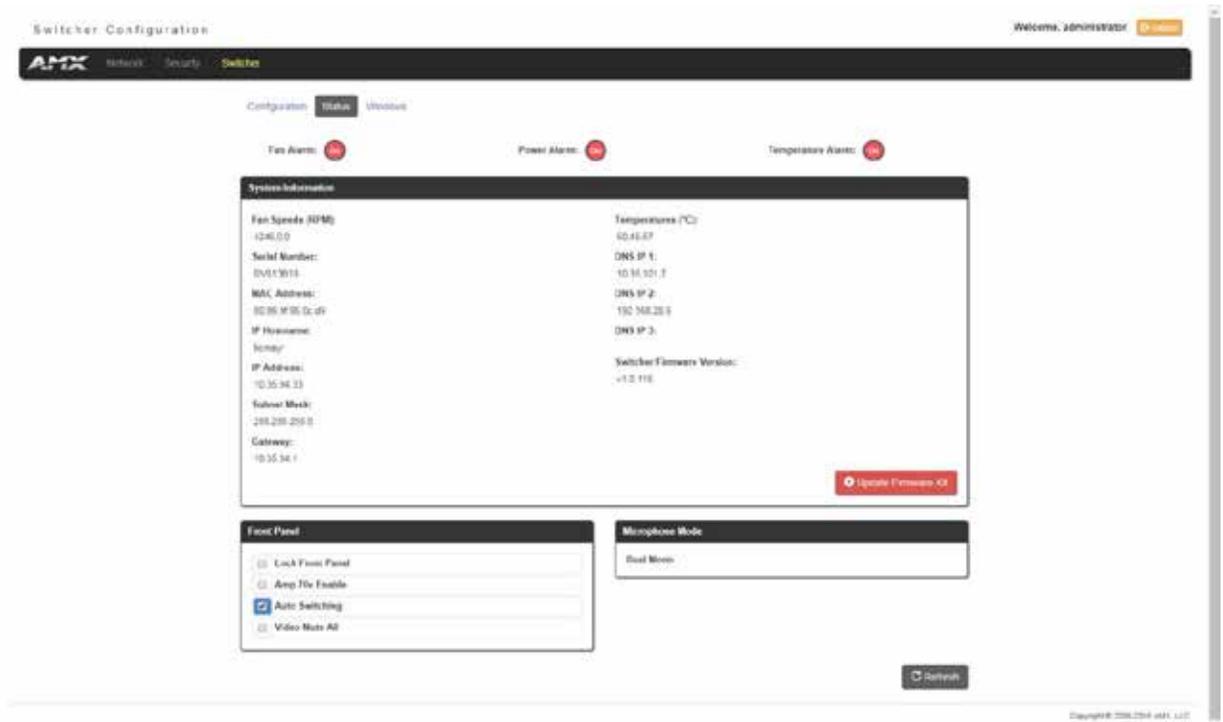
FIG. 98 Switcher - System page (NCITE-813/813A devices)

The following options appear on this page:

Switcher – System Page Options	
Lock Front Panel	Click to lock the front panel buttons and prohibit any manual switching or configuration by using the physical buttons on the device.
Amp 70v Enable	Click to enable the 70V amplifier on the device.
Auto Switching	Click to enable auto switching on the device. With Auto Switching, the device responds to the most recently added video input by switching the new input to display on the video output.
Video Mute All	Click to mute all video outputs connected to the device. Video mute results in a blank screen on the output displays.

Windows Page

The Windows page (FIG. 99) is available when connected to an Incite Digital Video Presentation System. This page enables you to set options for transitioning between video outputs or setting up Picture in Picture (PIP).
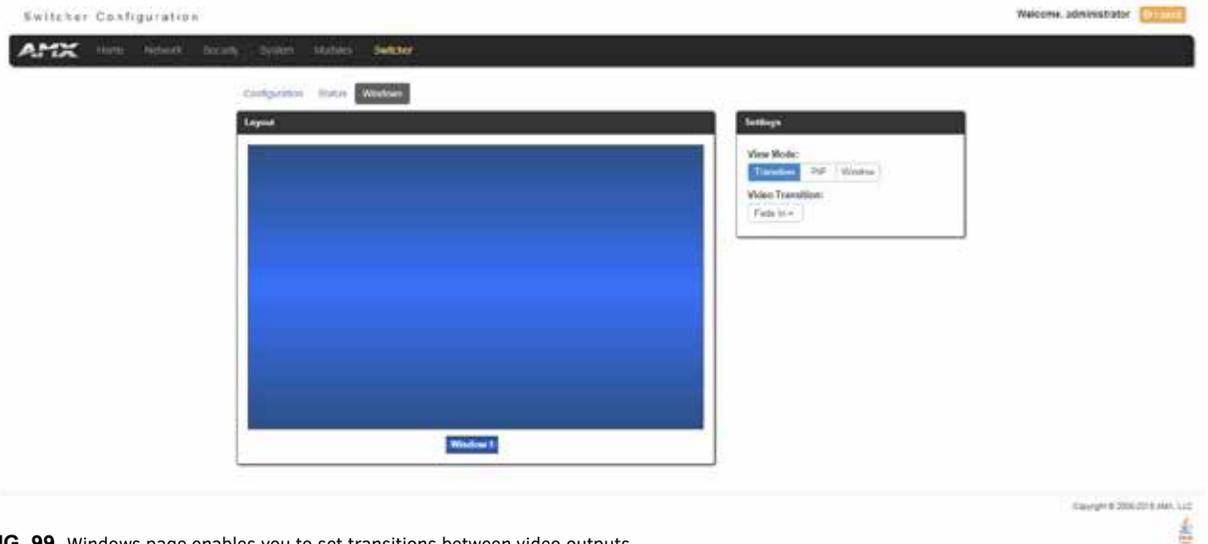
FIG. 99 Windows page enables you to set transitions between video outputs

The following options appear on this page:

Switcher – Windows Page Options	
Layout	This area provides a visual indication of how the video will appear on the output device. This area is view-only.
View Mode	Select a view mode by clicking one of the buttons. You can choose from Transition, PIP, and Window. With each selection, a different set of options appears
Video Transition	Select a transition mode from the drop-down menu. The transition mode indicates how the current video selection will switch to a new video selection. You can choose from Diag Top Left, Diag Top Right, Diag Bottom Left, Diag Bottom Right, Horiz From Left, Horiz From Right, Vert From Top, Vert From Bottom, and Fade In. This option is only available when you select Transition as the view mode.
Window 1 Input	Choose a video input to set as the first window by using the drop-down menu. This option is only available when you select PIP or Window as the view mode.
Window 2 Input	Choose a video input to set as the second window by using the drop-down menu. This option is only available when you select PIP or Window as the view mode.
PIP Position	Use the drop-down menu to choose the positioning of the two windows on the video output. You can choose from Top Left, Top Right, Bottom Left, and Bottom Right. With each position, Window 2 moves to selected location on the video output. This option is only available when you select PIP as the view mode.
PIP Size	Use the drop-down menu to choose the size of the smaller window on the video output. You can choose from Small, Medium, or Large. This option is only available when you select PIP as the view mode.
Window Position	Use the drop-down menu to choose the positioning of the two windows on the video output. You can choose from Side By Side or Top Bottom. This option is only available when you select Window as the view mode.
Window Size	Use the drop-down menu to choose the positioning of the two windows on the video output. You can choose from Top Large or Bottom Large. This option is only available when you select Window as the view mode and Top Bottom as the window position.

Firmware Upgrades

Overview

Upgrading firmware on Incite Presentation Systems involves downloading the latest firmware files from www.amx.com and using NetLinx Studio to transfer the files to a target device. The NetLinx Studio software application (available for free download from www.amx.com) provides the ability to transfer KIT firmware files to a NetLinx device.

NOTE: *To upgrade the firmware via WebConsole for the NCITE-813/813A, see the Updating Firmware on NCITE-813/813A* section on page 106.

To upgrade the firmware for the NCITE-813AC, use the Online Device tree in NetLinx Studio to view the firmware files currently loaded on the Digital Video Presentation System. FIG. 100 shows an example Online Tree:
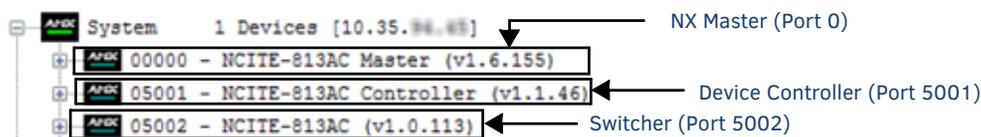
FIG. 100 NetLinx Studio - Sample Online Tree

Incite Digital Video Presentation Systems contain three devices (NX Master, Device Controller, and A/V Switcher/Scaler), each of which requires a separate Kit file. These three devices must be kept at compatible firmware versions for proper operation. There-fore, all three files should be used when upgrading any firmware associated with the digital video presentation system.

Incite Digital Video Presentation Systems - Firmware Files	
NX Master Firmware (NCITE-813AC only)	The on-board Master is listed first in the Online Tree as "00000 NCITE-813AC Master (<firmware version>)" • "00000" represents Device ID 0, which is reserved for the Master • The number in parenthesis is the current Master firmware version.
Device Controller Firmware (NCITE-813AC only)	The Device Controller is listed next as "05001 NCITE-813AC Controller (<firmware version>)" • "05001" represents Device ID 5001, which is reserved for the Device Control ports. • The number in parenthesis is the current Device Controller firmware version.
A/V Switcher/Scaler Firmware	The A/V Switcher/Scaler is listed third as "05002 NCITE-813AC (<firmware version>)" • "05002" represents Device ID 5002, which is reserved for the A/V Switcher/Scaler. • The number in parenthesis is the current Device Controller firmware version.

Before You Start

Perform the following steps before upgrading your firmware version:

1. Verify you have the latest version of NetLinx Studio on your PC. Use the **Web Update** option in NetLinx Studio's Help menu to obtain the latest version. Alternatively, go to **www.amx.com** and login as a Dealer to download the latest version.

2. Go to **www.amx.com** and download the latest Firmware file. Firmware files are available to download from www.amx.com - on the product's page in the online catalog.

3. Verify that an Ethernet cable is connected from the digital video presentation switcher to the Ethernet Hub.

4. Verify that the digital video presentation switcher is powered On.

5. Determine the Device Number assigned to the target digital video presentation switcher.
   - By default, the Device Number assigned to the digital video presentation switcher is **0** (zero). (The Master device number is always 0 and cannot be changed.)
   - The Device Number can be viewed on the WebConsole - System Devices page.

6. Launch NetLinx Studio and open the Online Device Tree.

Verifying the Current Firmware Version

Use the Online Tree in NetLinx Studio (see FIG. 100) to verify which version of each firmware file is currently installed.

1. In NetLinx Studio, click on the Online Tree tab (in the Workspace Bar) to view the devices on the System.
2. Click **Display** and select **Refresh System Online Tree** from the context menu that appears. This establishes a new connection to the System and populates the device tree with devices on that system.
3. After the Communication Verification dialog box indicates active communication between the PC and the Central Controller, verify the Central Controller and associated devices are listed in the Online Tree.
4. Check the appropriate product page on **www.amx.com** for the latest NX Master, Device Controller, and A/V Switcher/Scaler firmware files for your device.

If necessary, follow the procedures outlined in the following sections to obtain these firmware (*.kit) files from **www.amx.com** and then transfer the new firmware files to the device.

Downloading the Latest Firmware Files from www.amx.com

Below is a table outlining the *Master*, *Device*, and *Switcher* firmware (*.kit) files used by Incite Presentation Systems:

Master Firmware Kit File Usage for Incite Digital Video Presentation Systems	
NCITE-813/813A/813AC	Master Firmware: SW1901_1X-NCITE_FW_vx_xxx.kit (NCITE-813AC only)
	Device Firmware: SW2106_1X-NCITE_Device_v1_x_xx.kit (NCITE-813ac ONLY)
	A/V Switcher/Scaler Firmware: SW1906_1X-NCITE_Switcher_v1_x_xx.kit

Downloading Incite Firmware Files on www.amx.com

Visit the appropriate product page on www.amx.com for the latest *NX Master* and *Device Controller* firmware (*.kit) files for your Presentation System. Firmware file links are available along the right-side of the catalog page (FIG. 101):

FIG. 101 www.amx.com - sample Enova DVX firmware file links

Firmware files are bundled in a ZIP file, along with a Readme.TXT file that provides details on this firmware release.

1. Accept the AMX Licensing Agreement.
2. Download the ZIP file and unzip the contents to a known location.

Required Order of Firmware Updates for Incite Digital Presentation Systems

Upgrade firmware in the following order:

1. First, upgrade the A/V Switcher/Scaler firmware.
2. When that process is complete, upgrade the **Master** firmware.
3. When that process is complete, upgrade the **Device** firmware.

NOTE: *ALWAYS consult the Readme.TXT file bundled with the firmware file for any special instructions before upgrading to a newer firmware version. If no specifics are provided, use the order provided above.*

Sending Firmware (*.KIT) Files to the Device

Use the Firmware Transfers options in the Tools menu to update the firmware on the device. NetLinx Devices such as Incite Presentation Systems use KIT files for firmware upgrades.

NOTE: *A Kit file (*.KIT) is a package of several files, all of which are required to upgrade the firmware, and are available online via www.amx.com. Firmware download links are provided in the relevant product page.*

- The Online Device Tree (Online Tree tab of the Workspace Window) displays information about each online device, including the current firmware version.
- Before attempting to upgrade the firmware, you must have the appropriate Kit file for your device.

The digital video presentation switcher contains two devices which each require a separate Kit file. These three devices must be kept at compatible firmware versions for proper operation.

- Device ID 0: NetLinx Master Controller
- Default Device ID 5001: Device Control Ports

To update NetLinx firmware:

1. Choose Tools > Firmware Transfers > Send to NetLinx Device to open the Send To NetLinx Device dialog box (FIG. 102).
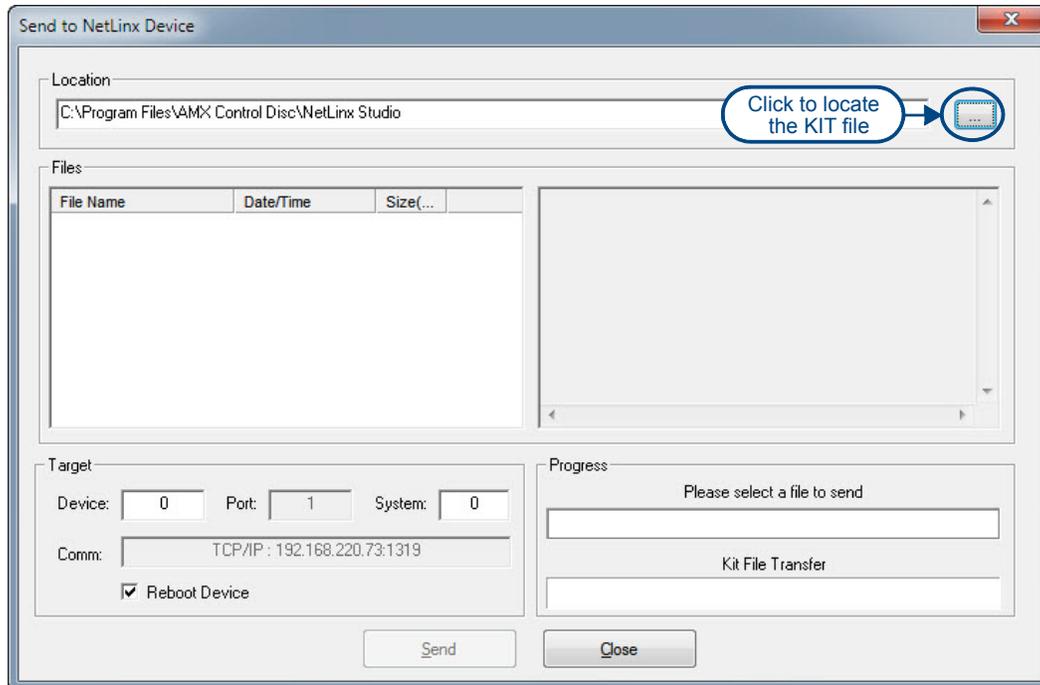
FIG. 102 Send to NetLinx Device dialog box (NetLinx Studio)

2. Click the Browse (...) button to navigate to the target directory in the Browse For Folder dialog box (FIG. 103).
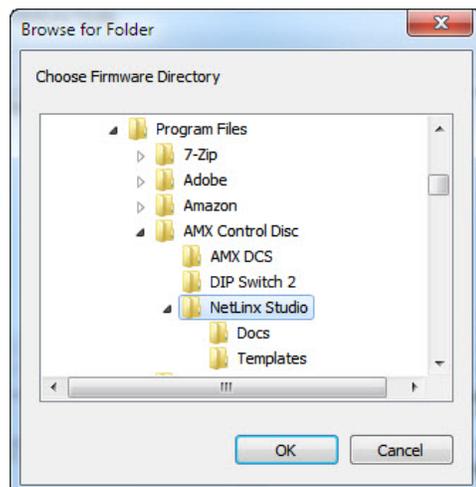
FIG. 103 Browse For Folder dialog box (NetLinx Studio)

- The selected directory path is displayed in the Send To NetLinx Device dialog (Location text box).
- Assuming that the specified target directory contains one or more KIT files, the KIT files in the selected directory are displayed in the Files list box, with the file's last modified date and time (FIG. 104).
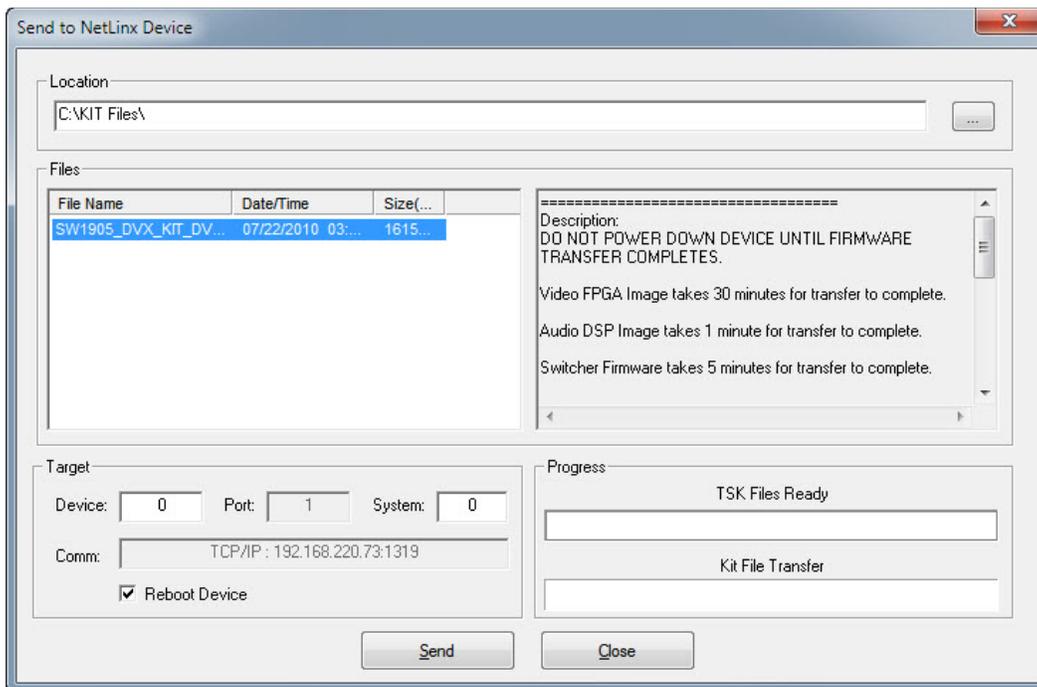
FIG. 104 Send to NetLinx Device dialog box (NetLinx Studio)

3. Select the appropriate *.KIT file from the Files list.

NOTE: *Always update Incite devices in the following order:*

Device 5002 (AV Switcher/Scaler)

Device 0 (NetLinx Master, if available)
Device 5001 (Integrated Control Ports)
ALWAYS consult the Readme.TXT file bundled with the firmware file for any special instructions before upgrading to a newer firmware version. If no specifics are provided, use the order provided above.

4. Enter the Device ID number of the integrated device to be upgraded in the Device text box and the System ID
   numbers for the digital video presentation switcher in the System text box. ● The device number of the NetLinx Master is 0.
   - By default, the Device number assigned to the integrated control ports is 5001.
   - Use the Online Device Tree to determine the device's assigned IDs, if it has been changed.

5. Review the File, Connection, Address, and Target Device information before you send.

6. Click the Send button. You can watch the progress of the transfer in the Send to NetLinx Device dialog box.

NetLinx Studio transfers the files to the digital video presentation switcher and then tells it to reboot. After it reboots, the digital video presentation switcher actually goes through the upgrade process.

- During the upgrade process, the Status LED blinks, and the digital video presentation switcher stays offline.
- Once the upgrade is complete, the LED will stop blinking and the digital video presentation switcher will be online.
- Repeat the firmware update process for the next device until all devices are updated.

NOTE: *Upgrading the Master or device firmware can take several minutes.*

CAUTION: *If for any reason your Kit file transfer should fail, continue to retry the transfer until you are successful. DO NOT reboot the digital video presentation switcher, or change connections until the transfer is complete. Failure to complete this operation successfully may require a factory repair of the digital video presentation switcher.*

Additional Documentation

For additional information on using NetLinx Studio, refer to the NetLinx Studio online help and Instruction Manual (available at www.amx.com).

Updating Firmware on NCITE-813/813A

The NCITE-813/813A Presentation Systems do not contain NetLinx devices, so you cannot update the device firmware via NetLinx Studio. Instead, you can update the firmware for these devices by accessing the WebConsole for the device (see the *Using a Web Browser* section on page 52 for more information.)

Perform these steps to update the firmware on an NCITE-813/813A Presentation System:

1. Download the latest .kit file from www.amx.com and save the file to a location that is accessible to the Presentation System.

2. Access the WebConsole for the Presentation System (see page 52).

3. Select **Switcher** from the System Configuration menu that runs across the top of the page. The Switcher page appears.

4. Select **Status** to view the status information for the Presentation System (FIG. 105).
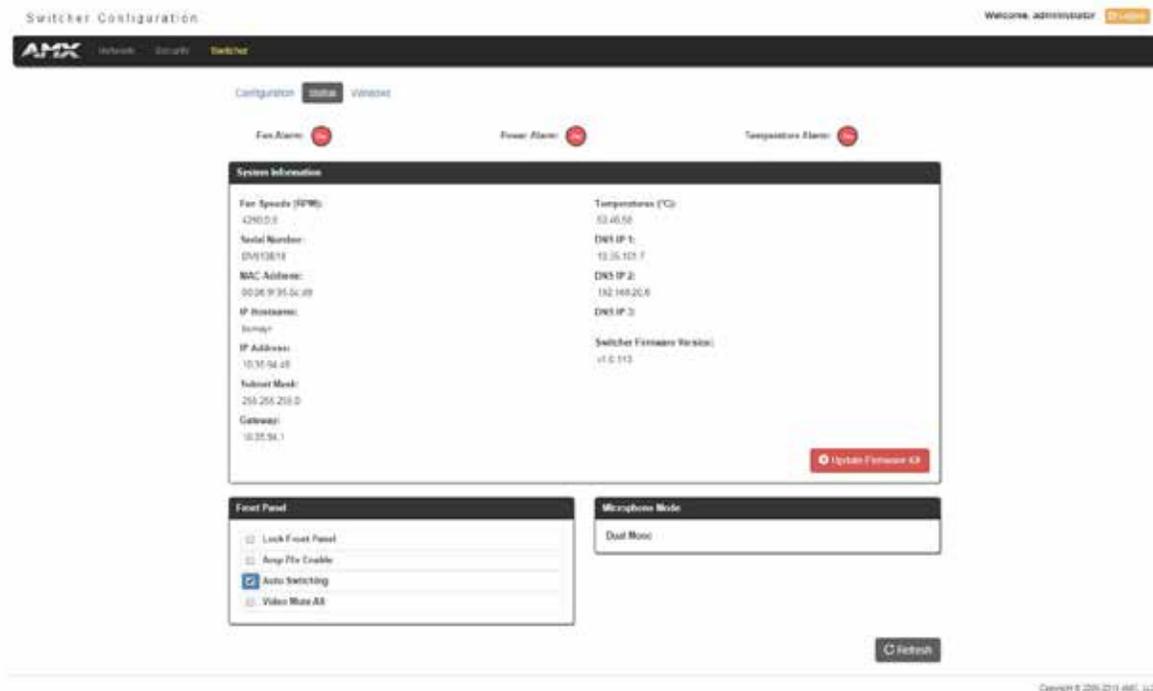
FIG. 105 Switcher Status page

5. Click **Update Firmware Kit**. A file windows opens which you can use to navigate to the .kit file.

6. Select the .kit file and click **Open**. The firmware update begins.

Programming

Overview

The chapter defines all programming commands available for the Incite Presentation Systems.

NOTE: *This chapter lists programming commands unique to Incite Presentation Systems. Please consult the WebConsole & Programming Guide for NX-Series Controllers for more details on NetLinx controller commands. The NCITE-813AC supports all commands compatible with the NX-2200 controller.*

NetLinx Channels and Levels

The following sections define the NetLinx channels and levels available for the NCITE-813AC:

NCITE-813AC NetLinx Channels

NCITE-813AC NetLinx Channels		
Channel	Ports	Description
24	1-4	Volume Up
25	1-4	Volume Down
26	1-4	Volume Mute Cycle
32	1-4	Switches video input 1 to the video output
32	1-4	Switches video input 2 to the video output
33	1-4	Switches video input 3 to the video output
34	1-4	Switches video input 4 to the video output
35	1-4	Switches video input 5 to the video output
36	1-4	Switches video input 6 to the video output
37	1-4	Switches video input 7 to the video output
38	1-4	Switches video input 8 to the video output
41	1-4	Switches audio input 1 to the video output
42	1-4	Switches audio input 2 to the video output
43	1-4	Switches audio input 3 to the video output
44	1-4	Switches audio input 4 to the video output
45	1-4	Switches audio input 5 to the video output
46	1-4	Switches audio input 6 to the video output
70	1-4	Video Output Enable
71	1-2	Mic Enable (Mono)
83	1-8	Video In Phase Ramp Up
84	1-8	Video In Phase Ramp Down
132	1-8	Video In V-Shift Ramp Up
133	1-8	Video In V-Shift Ramp Down
134	1-8	Video In H-Shift Ramp Up
135	1-8	Video In H-Shift Ramp Down
140	1-6	Gain Up
141	1-6	Gain Down
143	1-6	Gain Mute
164	1-4	Balance Ramp Up
165	1-4	Balance Ramp Down
199	1-4	Volume Mute Set and State
209	1-8	Video In Auto Adjust
210	1-4	Video Mute State
213	1-4	Video Freeze State
216	1	Fan Alarm

NCITE-813AC NetLinx Channels (Cont.)		
Channel	Ports	Description
217	1	Temperature Alarm
218	1	Power Alarm
219		Audio Group Mute
234	1-4	OSD State

Channel Video Switching

To switch video via channels, the channel must be turned ON (as opposed to pulsing the channel). For example, turn on Channel 31 on Port 1 for Input 1 to output video.

These channels are mutually exclusive:

- *Turning On* another channel will change input and turn off the last channel.
- *Turning Off* a selected channel will select input *none*.
- *Pulsing* any channel will set input to *none* as it turns on, and then back off the channel pulsed.

NCITE-813AC NetLinx Levels

The following table list the NetLinx levels for the NCITE-813AC:

NCITE-813AC NetLinx Levels			
Level	Ports	Range	Function
1	1-4	0-100	Output volume
2	1-4	(-20)-(20)	Audio Output Balance
5	1-6	(-24)-(24)	Audio Input Gain
8	1		Temperature (read-only level)
20	1-4	0-100	Video Output Brightness
22	1-4	0-100	Video Output Contrast
31	1-4	(-12)-(12)	Audio EQ Band 1
32	1-4	(-12)-(12)	Audio EQ Band 2
33	1-4	(-12)-(12)	Audio EQ Band 3
34	1-4	(-12)-(12)	Audio EQ Band 4
35	1-4	(-12)-(12)	Audio EQ Band 5
36	1-4	(-12)-(12)	Audio EQ Band 6
37	1-4	(-12)-(12)	Audio EQ Band 7
38	1-4	(-12)-(12)	Audio EQ Band 8
39	1-4	(-12)-(12)	Audio EQ Band 9
40	1-4	(-12)-(12)	Audio EQ Band 10
41	1-4	(-100)-0	Audio Program Source Mixing Level
42	1-4	(-100)-0	Audio Line Mic 1 Mixing Level
43	1-4	(-100)-0	Audio Line Mic 2 Mixing Level
50	1-4	0-8	Video Switching: Level 50 for each output port 1-4 will be a value from 0 to 8 indicating which video input is switched to that output. Changing the value of this level will result in a video switch.
51	1-4	0-6	Audio Switching: Level 51 for each output port 1-4 will be a value from 0 to 6 indicating which audio input is switched to that output. Changing the value of this level will result in an audio switch.
52	1-3	0-65	Audio Mic PreAmp Gain
53	1-3	(-24)-(24)	Audio Mic Gain
61	1-3	(-12)-(12)	Mic EQ Band 1
62	1-3	(-12)-(12)	Mic EQ Band 2
63	1-3	(-12)-(12)	Mic EQ Band 3
65	1-6	(-100)-0	Output Audio Group Volume

SEND_COMMANDS

The commands listed in the following sections are for the switcher only. For generic NetLinx commands, see the NetLinx Integrated Controllers WebConsole and Programming Guide.

- The commands derive their input/output port addressing from the target D:P:S.
- INPUT ports range from 1-14 for Audio and from 1-8 for Video. HDMI inputs are capable of carrying both digital audio and video signals
- The extra ports 1 and 2 on the Audio subsystem represent MIC1 and MIC2 respectively.
- There are four Audio output ports (05002:1:0, 05002:2:0, 05002:3:0, and 05002:4:0).
- Audio Output Port #1 is the Main Amp Output and most audio commands are addressed to this port.
- Audio Output Ports 2-4 are the Line Outputs and normally track the Main Amp Output port with small exceptions.
- There are four Video output ports (05002:1:0, 05002:2:0, 05002:3:0, and 05002:4:0).
- Input and Output functional distinctions are disambiguated from the overlapped port numbers by combining them with the command name.

Port Functionality Mapping

The following table lists the port functionality mapping for the audio/video ports on the NCITE-813AC:

Port Functionality Mapping		
Port Number	Description	Address
1	Audio/Video Input 1	05002:1:0
2	Audio/Video Input 2	05002:2:0
3	Audio/Video Input 3	05002:3:0
4	Audio/Video Input 4	05002:4:0
5	Audio/Video Input 5	05002:5:0
6	Audio/Video Input 6	05002:6:0
7	Audio/Video Input 7	05002:7:0
8	Audio/Video Input 8	05002:8:0
11	Audio Input 11	05002:11:0
12	Audio Input 12	05002:12:0
13	Audio Input 13	05002:13:0
14	Audio Input 14	05002:14:0
1	Mic In 1	05002:1:0
2	Mic In 2	05002:2:0
1	Audio Output 1 (Amplified)	05002:1:0
2	Audio Output 2	05002:2:0
3	Audio Output 3	05002:3:0
4	Audio Output 4	05002:4:0
1	Audio/Video Output1	05002:1:0
2	Audio/Video Output2	05002:2:0
3	Audio/Video Output3	05002:3:0
4	Audio/Video Output4	05002:4:0

Port Numbers

The following table lists the port numbers for the NCITE-813AC:

NCITE-813AC Port Numbers					
Model	RS-232	RS-422/485	IR/Serial	I/O	Relay
NCITE-813AC	2-4	1	11-14	22	21

AUDIO SEND_COMMANDs

The following table lists the audio SEND_COMMANDs available for the NCITE-813AC:Video SEND_COMMANDs

Audio SEND_COMMANDs	

AI\<input>O\<output>	Switches audio input port \<input> to audio output port \<output>.
	Syntax:
	`SEND_COMMAND "'AI<input>O<output>'"`
	Variables:
	 input = The source audio input number.
	 output = The audio output port number to switch to.
	Example:
	`SEND_COMMAND SWITCHER,"'AI2O1'"`
	Switch audio input port #2 to audio output #1.

?AUDIN_COMPRESSION	Requests the setting of compression for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDIN_COMPRESSION'"`
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'?AUDIN_COMPRESSION'"`
	Returns a COMMAND string of the form:
	`AUDIN_COMPRESSION-<setting>`

AUDIN_COMPRESSION	Sets the setting of compression for the audio port addressed by the D:P:S.
	Syntax
	`SEND_COMMAND <DEV>, "'AUDIN_COMPRESSION-<setting>'"`
	Variable:
	 setting =off, low, medium, high, custom
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'AUDIN_COMPRESSION-high'"`
	Sets the compression setting of the audio input port (#1 based on D:P:S) to high.

?AUDIN_COMPRESSION_ ATTACK	Requests the compression attack for the audio port.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDIN_COMPRESSION_ATTACK'"`
	Example:
	`SEND_COMMAND AUDIO_1, "'?AUDIN_COMPRESSION_ATTACK'"`
	Returns a COMMAND string of the form:
	`AUDIN_COMPRESSION_ATTACK-<attack>`

AUDIN_COMPRESSION_AT-TACK	Sets the duration of the attack phase while compressing for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDIN_COMPRESSION_ATTACK-<attack>'"`
	Variable:
	 attack = 1 to 2000
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'AUDIN_COMPRESSION_ATTACK-200'"`
	Sets the compression attack for the audio port (#1 based on the D:P:S) to 200.

?AUDIN_COMPRESSION_ RATIO	Requests the compression ratio for the audio port.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDIN_COMPRESSION_RATIO'"`
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'?AUDIN_COMPRESSION_RATIO'"`
	Returns a COMMAND string of the form:
	`AUDIN_COMPRESSION_RATIO-<ratio>`

AUDIN_COMPRESSION_RA-TIO	Sets the ratio while compressing for the audio input port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDIN_COMPRESSION_RATIO-<ratio>'"`
	Variable:
	 ratio = 1 to 20
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'AUDIN_COMPRESSION_RATIO-5'"`

Audio SEND_COMMANDs (Cont.)

?AUDIN_COMPRESSION_ RELEASE	Requests the compression release for the audio port.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDIN_COMPRESSION_RELEASE'"`
	Example:
	`SEND_COMMAND AUDIO_1, "'?AUDIN_COMPRESSION_RELEASE'"`
	Returns a COMMAND string of the form:
	`AUDIN_COMPRESSION_RELEASE-<release>`

AUDIN_COMPRESSION_RE-LEASE	Sets the duration of the release phase while compressing for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDIN_COMPRESSION_RELEASE-<release>'"`
	Variable:
	 release = 1 to 5000
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'AUDIN_COMPRESSION_RELEASE-200'"`
	Sets the compression release for the audio port (#1 based on the D:P:S) to 200.

?AUDIN_COMPRESSION_ THRESH	Requests the compression threshold for the audio port.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDIN_COMPRESSION_THRESH'"`
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'?AUDIN_COMPRESSION_THRESH'"`
	Returns a COMMAND string of the form:
	`AUDIN_COMPRESSION_THRESH-<threshold>`

AUDIN_COMPRESSION_ THRESH	Sets the threshold while compressing for the audio input port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDIN_COMPRESSION_THRESH-<threshold>'"`
	Variable:
	 threshold = 0 to -60 in dB
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'AUDIN_COMPRESSION_THRESH--10'"`
	Sets the threshold while compressing for the selected audio input port (#1 based on D:P:S) to -10dB.

?AUDIN_DIGITAL	Requests the format of the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDIN_DIGITAL'"`
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'?AUDIN_DIGITAL'"`
	Returns a string of the form:
	`AUDIN_DIGITAL-<format>`

AUDIN_DIGITAL	Sets the format for the audio input port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDIN_DIGITAL-<format>'"`
	Variable:
	 format = PCM-2ch, PCM-8ch, AC3, DTS, MPEG, AAC, TrueHD, DTSHD
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'AUDIN_DIGITAL-AAC'"`
	Sets the audio format for the audio input port (#1 based on D:P:S) to AAC.

?AUDIN_GAIN	Requests the gain of the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDIN_GAIN'"`
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'?AUDIN_GAIN'"`
	Returns a COMMAND string of the form:
	`AUDIN_GAIN-<gain>`

AUDIN_GAIN	Sets the gain of the audio port addressed by the D:P:S to <gain>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDIN_GAIN-<gain>'"`
	Variable:
	 gain = -24 to 24 in dB
	Example:
	`SEND_COMMAND AUDIO_INPUT_1, "'AUDIN_GAIN-12'"`
	Sets the gain of the audio input port (#1 based on D:P:S) to 12 dB.

Audio SEND_COMMANDs (Cont.)

?AUDIN_STEREO	Requests to see if the audio port addressed by the D:P:S has the stereo setting enabled or disabled.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDIN_STEREO'"`
	Example:
	`SEND_COMMAND AUDIO_INPUT_1,"'?AUDIN_STEREO'"`
	Returns a COMMAND string of the form:
	`AUDIN_STEREO-<setting>`

AUDIN_STEREO	Enables or disables the stereo setting on the audio port addressed by the D:P:S. If enabled, the stereo setting is on. If disabled, the stereo setting is off, which means it is mono.
	Syntax:
	`SEND_COMMAND <DEV>,"'AUDIN_STEREO-<setting>'"`
	Variable:
	setting = enable or disable
	Example:
	`SEND_COMMAND AUDIO_INPUT_1,"'AUDIN_STEREO-enable'"`

?AUDMIC_COMPRESSION	Requests the setting of compression for a microphone.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_COMPRESSION'"`
	Example:
	`SEND_COMMAND MICROPHONE_1, "'?AUDMIC_COMPRESSION'"`
	Returns a COMMAND string of the form:
	`AUDMIC_COMPRESSION-<setting>`

AUDMIC_COMPRESSION	Sets the setting of compression of the microphone port addressed by the D:P:S to <setting>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_COMPRESSION-<setting>'"`
	Variable:
	setting = off, low, medium, high, custom
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_COMPRESSION-high'"`
	Sets the compression for the microphone port (#1 based on D:P:S) to high.

?AUDMIC_COMPRESSION_ATTACK	Requests the duration of the attack phase while compressing for a microphone.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_COMPRESSION_ATTACK'"`
	Example:
	`SEND_COMMAND MICROPHONE_1, "'?AUDMIC_COMPRESSION_ATTACK'"`
	Returns a COMMAND string of the form:
	`AUDMIC_COMPRESSION-ATTACK-<attack>`

AUDMIC_COMPRESSION_ATTACK	Sets the duration of the attack phase while compressing for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_COMPRESSION_ATTACK-<attack>'"`
	Variable:
	attack = 1 to 2000
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_COMPRESSION_ATTACK-200'"`
	Sets the compression attack for the microphone port (#1 based on the D:P:S) to 200.

?AUDMIC_COMPRESSION_RATIO	Requests the ratio while compressing for a microphone.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_COMPRESSION_RATIO'"`
	Example:
	`SEND_COMMAND MICROPHONE_1, "'?AUDMIC_COMPRESSION_RATIO'"`
	Returns a COMMAND string of the form:
	`AUDMIC_COMPRESSION-RATIO-<ratio>`

AUDMIC_COMPRESSION_RATIO	Sets the ratio while compressing for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_COMPRESSION_RATIO-<ratio>'"`
	Variable:
	ratio = 1 to 20
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_COMPRESSION_RATIO-5'"`
	Sets the compression ratio for the microphone port (#1 based on the D:P:S) to 5.

Audio SEND_COMMANDs (Cont.)	

?AUDMIC_COMPRESSION_RELEASE	Requests the duration of the release phase while compressing for a microphone.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_COMPRESSION_RELEASE'"`
	Example:
	`SEND_COMMAND MIC_1, "'?AUDMIC_COMPRESSION_RELEASE'"`
	Returns a COMMAND string of the form:
	`AUDMIC_COMPRESSION-RELEASE-<release>`

AUDMIC_COMPRESSION_RELEASE	Sets the duration of the release phase while compressing for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_COMPRESSION_RELEASE-<release>'"`
	Variable:
	release = 1 to 5000
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_COMPRESSION_RELEASE-200'"`
	Sets the compression release for the microphone port (#1 based on the D:P:S) to 200.

?AUDMIC_COMPRESSION_THRESH	Requests the threshold while compressing for a microphone.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_COMPRESSION_THRESH'"`
	Example:
	`SEND_COMMAND MIC_1, "'?AUDMIC_COMPRESSION_THRESH'"`
	Returns a COMMAND string of the form:
	`AUDMIC_COMPRESSION-THRESH-<thresh>`

AUDMIC_COMPRESSION_THRESH	Sets the threshold while compressing for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_COMPRESSION_THRESH-<thresh>'"`
	Variable:
	thresh = 0 to -60
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_COMPRESSION_THRESH-`
	`-20'"`
	Sets the compression threshold for the microphone port (#1 based on the D:P:S) to -20.

AUDMIC_DUCK_ATTACK	Sets the duration of the attack phase while ducking for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_DUCK_ATTACK-<attack>'"`
	Variable:
	attack = 1 to 2000
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_DUCK_ATTACK-200'"`
	Sets the ducking attack for the microphone port (#1 based on the D:P:S) to 200.

AUDMIC_DUCK_HOLD	Sets the duration of the hold phase while ducking for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_DUCK_HOLD-<hold>'"`
	Variable:
	hold = 0 to 2000
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_DUCK_HOLD-200'"`
	Sets the ducking hold for the microphone port (#1 based on the D:P:S) to 200.

AUDMIC_DUCK_LEVEL	Sets the level while ducking for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_DUCK_LEVEL-<level>'"`
	Variable:
	level = 0 to 20
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_DUCK_LEVEL-4'"`
	Sets the ducking level for the microphone port (#1 based on the D:P:S) to 4.

Audio SEND_COMMANDs (Cont.)

AUDMIC_DUCK_RELEASE	Sets the duration of the release phase while ducking from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_DUCK_RELEASE-<release>'"`
	Variable:
	 release = 10 to 5000
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_DUCK_RELEASE-200'"`
	Sets the ducking release for the microphone port (#1 based on the D:P:S) to 200.

?AUDMIC_EQ_CF	Requests the frequency for the specified microphone band of the equalizer for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_EQ_CF-<band>'"`
	Variables:
	 band = 1..3 on the microphone inputs.
	Example:
	`SEND_COMMAND MIC_1,"'?AUDMIC_EQ_CF-1'"`
	Returns a COMMAND string of the form:
	`AUDMIC_EQ_CF-<band>,<value>`

AUDMIC_EQ_CF	Sets the frequency for the specified microphone band of the equalizer for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_EQ_CF-<band>,<frequency>'"`
	Variables:
	 band = 1..3 on the microphone inputs.
	 frequency = 20 to 20,000 in Hz.
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_EQ_CF-1,1000'"`
	Sets the frequency for the first band of the equalizer for the selected microphone port (#1 based on D:P:S) to be 1000.

?AUDMIC_EQ_FT	Requests the filter type of the specified microphone band of the equalizer for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_EQ_FT-<band>'"`
	Variable:
	 band = 1..3 on the microphone inputs.
	Example:
	`SEND_COMMAND MIC_1,"'?AUDMIC_EQ_FT-1'"`
	Returns a COMMAND string of the form:
	`AUDMIC_EQ_FT-<band>,<value>`

AUDMIC_EQ_FT	Set the filter type of any of the specified microphone band of the equalizer for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_EQ_FT-<band>,<type>'"`
	Variables:
	 band = 1..3 on the microphone inputs.
	 type = bell, band pass, band stop, high pass, low pass, treble shelf, bass shelf
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_EQ_FT-1,band pass'"`
	Sets the filter type for the first band of the equalizer for the selected microphone port (#1 based on D:P:S) to band pass.

?AUDMIC_EQ_GAIN	Requests the gain on the microphone equalizer setting of band <band> on the output audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_EQ_GAIN-<band>'"`
	Variable:
	 band = 1..3 on the microphone inputs.
	Example:
	`SEND_COMMAND MIC_1,"'?AUDMIC_EQ_GAIN-1'"`
	Returns a COMMAND string of the form:
	`AUDMIC_EQ_GAIN-<band>,<value>`

Audio SEND_COMMANDs (Cont.)	

AUDMIC_EQ_GAIN	Sets the gain on the microphone equalizer band <band> on the output audio port addressed by the D:P:S to
	<value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_EQ_GAIN-<band>,<value>'"`
	Variables:
	 band = 1..3 on the microphone inputs.
	 value = -12..12. The units are in dB.
	Example:
	`SEND_COMMAND MIC_1,"'AUDMIC_EQ_GAIN-1,8'"`
	Sets the gain on microphone band #1 of microphone 1 equalizer to 8.
	`SEND_COMMAND MIC_2,"'AUDMIC_EQ_GAIN-3,10'"`
	Sets the gain on microphone band #3 of microphone 2 equalizer to 10.

?AUDMIC_EQ_Q	Requests the quality factor (Q) for the specified microphone band of the equalizer for the micro-phone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_EQ_Q-<band>'"`
	Variable:
	 band = 1..3 on the microphone inputs.
	Example:
	`SEND_COMMAND MIC_1,"'?AUDMIC_EQ_Q-1'"`
	Returns a COMMAND string of the form:
	`AUDMIC_EQ_Q-<band>,<value>`

AUDMIC_EQ_Q	Sets the quality factor (Q) for the specified microphone band of the equalizer for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_EQ_Q-<band>,<factor>'"`
	Variables:
	  band = 1 to 3 on the microphone inputs.
	  factor = range depends on filter type (set by AUDMIC_EQ_FT)
	  Bell: range is 0.1 - 20.0
	  Band Pass:range is 0.1 - 20.0
	  Band Stop:range is 0.1 - 20.0
	  High Pass:range is 0.5 - 1.4
	  Low Pass:range is 0.5 - 1.4
	  Treble Shelf:range is 0.5 - 1.0
	  Bass Shelf:range is 0.5 - 1.0
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_Q-1,1'"`
	Sets the quality factor for the first band of the equalizer for the selected microphone port (#1 based on D:P:S) to
	1.

?AUDMIC_GAIN	Requests the gain setting for the microphone.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_GAIN'"`
	Example:
	`SEND_COMMAND MICROPHONE_1, "'?AUDMIC_GAIN'"`
	Returns a COMMAND string of the form:
	`AUDMIC_GAIN-<gain>`

AUDMIC_GAIN	Sets the gain of the microphone port addressed by the D:P:S to <gain>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_GAIN-<gain>'"`
	Variable:
	 gain = -24 to 24 in dB
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_GAIN-3'"`
	Sets the gain for the microphone port (#1 based on the D:P:S) to 3dB.

Audio SEND_COMMANDs (Cont.)

?AUDMIC_GATING	Requests the setting of gating of a microphone.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_GATING'"`
	Example:
	`SEND_COMMAND MICROPHONE_1, "'?AUDMIC_GATING'"`
	Returns a COMMAND string of the form:
	`AUDMIC_GATING-<setting>`

AUDMIC_GATING	Sets the setting of gating of the microphone port addressed by the D:P:S to <option>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_GATING-<setting>'"`
	Variable:
	setting = off, low, medium, high, custom
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_GATING-low'"`
	Sets the gating for the microphone port (#1 based on D:P:S) to low.

?AUDMIC_GATING_ATTACK	Requests the duration of the attack phase while gating from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_GATING_ATTACK'"`
	Example:
	`SEND_COMMAND MIC_1, "'?AUDMIC_GATING_ATTACK'"`
	Returns a string of the form:
	`AUDMIC_GATING_ATTACK=<value>`

AUDMIC_GATING_ATTACK	Sets the duration of the attack phase while gating from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_GATING_ATTACK-<attack>'"`
	Variable:
	attack = 1 to 2000
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_GATING_ATTACK-200'"`
	Sets the gating attack for the microphone port (#1 based on the D:P:S) to 200.

?AUDMIC_GATING_DEPTH	Requests the depth setting while gating from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_GATING_DEPTH'"`
	Example:
	`SEND_COMMAND MIC_1, "'?AUDMIC_GATING_DEPTH'"`
	Returns a string of the form:
	`AUDMIC_GATING_DEPTH=<value>`

AUDMIC_GATING_DEPTH	Sets the depth while gating from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_GATING_DEPTH-<depth>'"`
	Variable:
	depth = 0 to 20
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_GATING_DEPTH-8'"`
	Sets the gating depth for the microphone port (#1 based on the D:P:S) to 8.

?AUDMIC_GATING_HOLD	Requests the hold setting while gating from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_GATING_HOLD'"`
	Example:
	`SEND_COMMAND MIC_1, "'?AUDMIC_GATING_HOLD'"`
	Returns a string of the form:
	`AUDMIC_GATING_HOLD=<value>`

AUDMIC_GATING_HOLD	Sets the duration of the hold phase while gating for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_GATING_HOLD-<hold>'"`
	Variable:
	hold = 0 to 2000
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_GATING_HOLD-200'"`
	Sets the gating hold for the microphone port (#1 based on the D:P:S) to 200.

Audio SEND_COMMANDs (Cont.)

?AUDMIC_GATING_RELEASE	Requests the duration of the release phase while gating from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_GATING_RELEASE'"`
	Example:
	`SEND_COMMAND MIC_1, "'?AUDMIC_GATING_RELEASE'"`
	Returns a string of the form:
	`AUDMIC_GATING_RELEASE=<value>`

AUDMIC_GATING_RELEASE	Sets the duration of the release phase while gating from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_GATING_RELEASE-<release>'"`
	Variable:
	release = 10 to 5000
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_GATING_RELEASE-200'"`
	Sets the gating release for the microphone port (#1 based on the D:P:S) to 200.

?AUDMIC_GATING_THRESH	Requests the threshold setting while gating from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_GATING_THRESH'"`
	Example:
	`SEND_COMMAND MIC_1, "'?AUDMIC_GATING_THRESH'"`
	Returns a string of the form:
	`AUDMIC_GATING_THRESH=<value>`

AUDMIC_GATING_THRESH	Sets the threshold while gating for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_GATING_THRESH-<thresh>'"`
	Variable:
	thresh = 0 to -60
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_GATING_THRESH--20'"`
	Sets the gating threshold for the microphone port (#1 based on the D:P:S) to -20.

?AUDMIC_LIMITER	Requests the setting of the limiter of a microphone.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_LIMITER'"`
	Example:
	`SEND_COMMAND MIC_1,"'?AUDMIC_LIMITER'"`
	Returns a COMMAND string of the form:
	`AUDMIC_LIMITER-<setting>`

AUDMIC_LIMITER	Enables or Disables whether the microphone addressed by D:P:S has the Limiter functionality turned on.
	Syntax:
	`SEND_COMMAND <DEV>,"'AUDMIC_LIMITER-<setting>'"`
	Variable:
	setting = off, low, medium, high, custom
	Example:
	`SEND_COMMAND MIC_1,"'AUDMIC_LIMITER-off'"`
	Turns off the limiter for the microphone port (#1 based on D:P:S).

?AUDMIC_LIMITER_ATTACK	Requests the duration of the attack phase while limiting from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_LIMITER_ATTACK'"`
	Example:
	`SEND_COMMAND MIC_1, "'?AUDMIC_LIMITER_ATTACK'"`
	Returns a string of the form:
	`AUDMIC_LIMITER_ATTACK=<value>`

AUDMIC_LIMITER_ATTACK	Sets the duration of the attack phase while limiting for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_LIMITER_ATTACK-<attack>'"`
	Variable:
	attack = 1 to 2000
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_LIMITER_ATTACK-200'"`
	Sets the limiter attack for the microphone port (#1 based on the D:P:S) to 200.

Audio SEND_COMMANDs (Cont.)

?AUDMIC_LIMITER_RELEASE	Requests the duration of the release phase while limiting from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_LIMITER_RELEASE'"`
	Example:
	`SEND_COMMAND MIC_1, "'?AUDMIC_LIMITER_RELEASE'"`
	Returns a string of the form:
	`AUDMIC_LIMITER_ RELEASE=<release>`

AUDMIC_LIMITER_RELEASE	Sets the duration of the release phase while limiting for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_LIMITER_RELEASE-<release>'"`
	Variable:
	  release = 10 to 5000
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_LIMITER_RELEASE-200'"`
	Sets the limiter release for the microphone port (#1 based on the D:P:S) to 200.

?AUDMIC_LIMITER_THRESH	Requests the duration of the threshold phase while limiting from the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_LIMITER_THRESH'"`
	Example:
	`SEND_COMMAND MIC_1, "'?AUDMIC_LIMITER_THRESH'"`
	Returns a string of the form:
	`AUDMIC_LIMITER_ THRESH=< thresh>`

AUDMIC_LIMITER_THRESH	Sets the threshold while limiting from the microphone for addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_LIMITER_THRESH-<thresh>'"`
	Variable:
	  thresh = 0 to -60
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_LIMITER_THRESH--20'"`
	Sets the limiter threshold for the microphone port (#1 based on the D:P:S) to -20.

?AUDMIC_ON	Requests the status of the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_ON'"`
	Example:
	`SEND_COMMAND MICROPHONE_1, "'?AUDMIC_ON'"`
	Returns a COMMAND string of the form:
	`AUDMIC_ON-<setting>`

AUDMIC_ON	Enables or disables the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_ON-<setting>'"`
	Variable:
	  setting = on, off
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_ON-off'"`
	Disables the microphone port (#1 based on the D:P:S).

?AUDMIC_PHANTOM_PWR	Requests the setting for phantom power for a microphone.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_PHANTOM_PWR'"`
	Example:
	`SEND_COMMAND MICROPHONE_1, "'?AUDMIC_PHANTOM_PWR'"`
	Returns a COMMAND string of the form:
	`AUDMIC_PHANTOM_PWR-<result>`

AUDMIC_PHANTOM_PWR	Enables or disables phantom power for the microphone port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_PHANTOM_PWR-<setting>'"`
	Variable:
	  setting = on, off
	Example:
	`SEND_COMMAND MICROPHONE_1, "'AUDMIC_PHANTOM_PWR-on'"`
	Allows phantom power for the microphone port (#1 based on D:P:S).

Audio SEND_COMMANDs (Cont.)

?AUDMIC_PREAMP_GAIN	Requests the gain of the microphone before the amplifier.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_PREAMP_GAIN'"`
	Example:
	`SEND_COMMAND MIC_1,"'?AUDMIC_PREAMP_GAIN'"`
	Returns a COMMAND string of the form:
	`AUDMIC_PREAMP_GAIN-<gain>`

AUDMIC_PREAMP_GAIN	Sets the pre-amplifier gain of the microphone addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_PREAMP_GAIN-<gain>'"`
	Variables:
	gain = 0-100. The units are in %.
	Example:
	`SEND_COMMAND MIC_1,"'AUDMIC_PREAMP_GAIN-50'"`
	Sets the pre-amplifier gain for the microphone port (#1 based on D:P:S) to 50%.

?AUDMIC_STEREO	Requests the microphone port(s) that is/are in use.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDMIC_STEREO'"`
	Example:
	`SEND_COMMAND MICROPHONE_1, "'?AUDMIC_STEREO'"`
	Returns a COMMAND string of the form:
	`AUDMIC_STEREO-<option>`

AUDMIC_STEREO	Sets which microphone port addressed by the D:P:S to use.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDMIC_STEREO-<option>'"`
	Variable:
	option = "dual mono" or "single stereo"
	Example:
	`SEND_COMMAND MIC_1, "'AUDMIC_STEREO-single stereo'"`
	Sets the microphone port (#1 based on the D:P:S) to use both the microphone inputs as dual mono.

?AUDOUT_BALANCE	Request the current balance setting for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_BALANCE'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'?AUDOUT_BALANCE'"`
	Returns a COMMAND string of the form:
	`AUDOUT_BALANCE-<balance>`

AUDOUT_BALANCE	Sets the left and right balance for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_BALANCE-<balance>'"`
	Variable:
	balance = -20 to 20 in dB.
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_BALANCE-5'"`
	Sets the balance to favor the right speaker for audio output port (#1 based on D:P:S) 5dB.

?AUDOUT_DELAY	Requests the current delay for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_DELAY'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'?AUDOUT_DELAY'"`
	Returns a COMMAND string of the form:
	`AUDOUT_DELAY-<delay>`

AUDOUT_DELAY	Sets the delay in regards to the input for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_DELAY-<delay>'"`
	Variable:
	delay = 0 to 200 in milliseconds
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_DELAY-50'"`
	Sets the delay for the audio output port (#1 based on D:P:S) to 50.

Audio SEND_COMMANDs (Cont.)	

AUDOUT_DUCK_ATTACK	Sets the duration of the attack phase while ducking for the output port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_DUCK_ATTACK-<attack>'"`
	Variable:
	attack = 1 to 2000
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_DUCK_ATTACK-200'"`
	Sets the ducking attack for the output port (#1 based on the D:P:S) to 200.

AUDOUT_DUCK_HOLD	Sets the duration of the hold phase while ducking for the output port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_DUCK_HOLD-<hold>'"`
	Variable:
	hold = 0 to 2000
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_DUCK_HOLD-200'"`
	Sets the ducking hold for the output port (#1 based on the D:P:S) to 200.

AUDOUT_DUCK_LEVEL	Sets the level while ducking for the output port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_DUCK_LEVEL-<level>'"`
	Variable:
	level = 0 to 20
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_DUCK_LEVEL-4'"`
	Sets the ducking level for the output port (#1 based on the D:P:S) to 4.

AUDOUT_DUCK_RELEASE	Sets the duration of the release phase while ducking from the output port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_DUCK_RELEASE-<release>'"`
	Variable:
	release = 10 to 5000
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_DUCK_RELEASE-200'"`
	Sets the ducking release for the output port (#1 based on the D:P:S) to 200.

?AUDOUT_DUCK_THRESH	Requests the current ducking thresholds of both microphone ports for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_DUCK_THRESH'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'?AUDOUT_DUCK_THRESH'"`
	Returns a COMMAND string of the form:
	`AUDOUT_DUCK_THRESH-<mic1_thresh>,<mic2_thresh>`

AUDOUT_DUCK_THRESH	Individually sets the ducking thresholds of both microphone ports for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_DUCK_THRESH-<mic1_thresh>'"`
	Variables:
	mic1_thresh = -60 to 0
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_DUCK_THRESH--12'"`
	Sets the two microphone thresholds for the audio output port (#1 based on D:P:S) to -12.

?AUDOUT_DUCKING	Requests the current setting of ducking for the audio port addressed by the D:P:S.:
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_DUCKING'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'?AUDOUT_DUCKING'"`
	Returns a COMMAND string of the form:
	`AUDOUT_DUCKING-<setting>`

Audio SEND_COMMANDs (Cont.)	

AUDOUT_DUCKING	Sets the setting of ducking for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_DUCKING-<setting>'"`
	Variable:
	setting = off, low, medium, high, custom
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_DUCKING-low'"`
	Sets the ducking for the audio output port (#1 based on D:P:S) to low.

?AUDOUT_EQ_CF	Requests the center frequency on the equalizer setting of band <band> on the output audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_EQ_CF-<band>'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1,"'?AUDOUT_EQ_CF-1'"`
	Returns a COMMAND string of the form:
	`AUDOUT_EQ_CF-<band>,<value>`

AUDOUT_EQ_CF	Sets the center frequency on the equalizer band <band> on the output audio port addressed by the D:P:S to
	<value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_EQ_CF-<band>,<value>'"`
	Variables:
	band = 1..10 if on the audio output port.
	value =20..20000. The units are in Hz.
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1,"'AUDOUT_EQ_CF-1=80'"`
	Sets the center frequency on band #1 of audio port 1 equalizer to 80.
	`SEND_COMMAND AUDIO_OUTPUT_2,"'AUDOUT_EQ_CF-5=100'"`
	Sets the center frequency on band #5 of audio port 2 equalizer to 100.

?AUDOUT_EQ_FT	Requests the filter type on a specific setting of band <band> on the output audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_EQ_FT-<band>'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1,"'?AUDOUT_EQ_FT-1'"`
	Returns a COMMAND string of the form:
	`AUDOUT_EQ_FT-<band>,<filter>`

AUDOUT_EQ_FT	Sets the filter type on the equalizer band <band> on the output audio port addressed by the D:P:S to <filter
	type>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_EQ_FT-<band>=<filter type>'"`
	Variables:
	band = 1..10 if on the audio output port.
	filter type = Bell, Band Pass, Band Stop, High Pass, Low Pass, Treble Shelf, and Bass Shelf
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1,"'AUDOUT_EQ_FT-1=Low Pass'"`
	Sets the filter type on band #1 of audio port 1 equalizer to Low Pass.

?AUDOUT_EQ_GAIN	Requests the gain on the equalizer setting of band <band> on the output audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_EQ_GAIN-<band>'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1,"'?AUDOUT_EQ_GAIN-1'"`
	Returns a COMMAND string of the form:
	`AUDOUT_EQ_GAIN-<band>,<value>`

Audio SEND_COMMANDs (Cont.)

AUDOUT_EQ_GAIN	Sets the gain on the equalizer band <band> on the output audio port addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_EQ_GAIN-<band>,<value>'"`
	Variables:
	 band = 1..10 if on the audio output port.
	 value = -12..12. The units are in dB.
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1,"'AUDOUT_EQ_GAIN-1=8'"`
	Sets the gain on band #1 of audio port 1 equalizer to 8.
	`SEND_COMMAND AUDIO_OUTPUT_2,"'AUDOUT_EQ_GAIN-5=-10'"`
	Sets the gain on band #5 of audio port 2 equalizer to -10.

?AUDOUT_EQ_MODE	Request the current mode of the equalizer for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "?'AUDOUT_EQ_MODE'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'?AUDOUT_EQ_MODE'"`
	Returns a COMMAND string of the form:
	`AUDOUT_EQ_MODE-<mode>`

AUDOUT_EQ_MODE	Sets the mode for the equalizer for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_EQ_MODE-<mode>'"`
	Variables:
	 mode = off, voice, music, movie
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_EQ_MODE-movie'"`
	Sets the equalizer to favor the sounds of a movie for the audio output port (#1 based on D:P:S).

?AUDOUT_EQ_Q	Requests the quality factor (Q) on the equalizer setting of band <band> on the output audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_EQ_Q-<band>'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1,"'?AUDOUT_EQ_Q-1'"`
	Returns a COMMAND string of the form:
	`AUDOUT_EQ_Q-<band>,<factor>`

AUDOUT_EQ_Q	Sets the quality factor (Q) on the equalizer band <band> on the output audio port addressed by the D:P:S to
	<value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_EQ_Q-<band>=<factor>'"`
	Variables:
	 band = 1-10 if on the audio output port.factor = range depends on filter type (AUDOUT_EQ_FT)
	 Bell: range is 0.1 - 20.0
	 Band Pass: range is 0.1 - 20.0
	 Band Stop: range is 0.1 - 20.0
	 High Pass: range is 0.5 - 1.4
	 Low Pass: range is 0.5 - 1.4
	 Treble Shelf: range is 0.5 - 1.0
	 Bass Shelf: range is 0.5 - 1.0
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1,"'AUDOUT_EQ_Q-1=8'"`
	Sets the Q on band #1 of the audio port 1 equalizer to 8.

AUDOUT_GROUP_MUTE	
AUDOUT_GROUP_VOLUME	

?AUDOUT_MAXVOL	Requests the current maximum volume for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_MAXVOL'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'?AUDOUT_MAXVOL'"`
	Returns a COMMAND string of the form:
	`AUDOUT_MAXVOL-<maximum>`

Audio SEND_COMMANDs (Cont.)

AUDOUT_MAXVOL	Sets the maximum volume for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_MAXVOL-<maximum>'"`
	Variable:
	
	maximum = -100 to 0 in percent
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_MAXVOL--75'"`
	Sets the maximum for the audio output port (#1 based on D:P:S) to 75%.

?AUDOUT_MINVOL	Requests the current minimum volume for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_MINVOL'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'?AUDOUT_MINVOL'"`
	Returns a COMMAND string of the form:
	`AUDOUT_MINVOL-<minimum>`

AUDOUT_MINVOL	Sets the minimum volume for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_MINVOL-<minimum>'"`
	Variable:
	
	minimum = -100 to 0 in percent.
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_MINVOL--5'"`
	Sets the minimum for the audio output port (#1 based on D:P:S) to 5%.

?AUDOUT_MUTE	Requests if the audio port addressed by the D:P:S is muted.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_MUTE'"`
	Example:
	`SEND_COMMAND dxDev, "'?AUDOUT_MUTE'"`
	Returns a COMMAND string of the form:
	`AUDOUT_MUTE-<enable|disable>`

AUDOUT_MUTE	Enable or disable audio muting on the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>,"'AUDOUT_MUTE-<setting>'"`
	Variables:
	
	setting = desired mute state, either ENABLE or DISABLE
	Example:
	`SEND_COMMAND dxDev,"'AUDOUT_MUTE-DISABLE'"`

AUDOUT_RESET_EQ	Resets all EQ levels to 0 for the audio port addressed by the D:P:S. You can optionally reset the EQ for an audio output channel by supplying the channel number.
	Syntax:
	`SEND_COMMAND <device>, "'AUDOUT_RESET_EQ-<channel>'"`
	Variables:
	
	channel = The audio output's channel number. (This setting is optional.)
	Example:
	`SEND_COMMAND dxDev,"'AUDOUT_RESET_EQ-1'"`

?AUDOUT_STEREO	Device responds with "'AUDOUT_STEREO-<setting>'" where setting is "ENABLE" or "DISABLE".
	Syntax:
	`SEND_COMMAND <device>, "'?AUDOUT_STEREO'"`
	Example:
	`SEND_COMMAND dxDev, "'?AUDOUT_STEREO'"`

AUDOUT_STEREO	Enables or disables audio amp output in stereo.
	Syntax:
	`SEND_COMMAND <device>, "'AUDOUT_STEREO-<setting>'"`
	Variables:
	
	setting = Stereo setting, either "ENABLE" or "DISABLE"
	Example:
	`SEND_COMMAND dxDev,"'AUDOUT_STEREO-ENABLE'"`

Audio SEND_COMMANDs (Cont.)

?AUDOUT_TESTTONE	Requests the current frequency of test tone for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_TESTTONE'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'?AUDOUT_TESTTONE'"`
	Returns a COMMAND string of the form: AUDOUT_TESTTONE-<frequency>.

AUDOUT_TESTTONE	Sets the frequency, if any, of a test tone for the audio port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_TESTTONE-<frequency>'"`
	Variable:
	
	frequency = off, 60Hz, 250Hz, 400Hz, 1KHz, 3KHz, 5KHz, 10KHz, PINK NOISE, WHITE NOISE
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'AUDOUT_TESTTONE-250Hz'"`
	Sets a test tone of 250Hz to play for the audio output port (#1 based on D:P:S).

?AUDOUT_VOLUME	Requests the volume setting of the audio output port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?AUDOUT_VOLUME'"`
	Example:
	`SEND_COMMAND AUDOUT_VOLUME_1, "'?AUDOUT_VOLUME'"`
	Returns a COMMAND string of the form:
	`AUDOUT_VOLUME-<value>`

AUDOUT_VOLUME	Sets the volume on the audio output addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'AUDOUT_VOLUME-<VALUE>'"`
	Variable:
	
	value = 0..100
	Example:
	`SEND_COMMAND AUDOUT_VOLUME_1, "'AUDOUT_VOLUME-50'"`
	Sets the volume of audio output port #1 to 50.

?SPDIFOUT_AUDIO	Requests to which output the audio port addressed by the D:P:S is connected.
	Syntax:
	`SEND_COMMAND <DEV>, "'?SPDIFOUT_AUDIO'"`
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'?SPDIFOUT_AUDIO'"`
	Returns a COMMAND string of the form:
	`SPDIFOUT_AUDIO-<option>`

SPDIFOUT_AUDIO	Selects which output the audio port should connect to.
	Syntax:
	`SEND_COMMAND <DEV>, "'SPDIFOUT_AUDIO-<option>'"`
	Variable:
	option = off, HDMI out 1, HDMI out 2, HDMI out 3, HDMI out 4, analog out 1, analog out 2, analog out 3, analog out 4
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_1, "'SPDIFOUT_AUDIO-HDMI out 1'"`
	Sets the audio of HDMI out 1 to play through the audio output port (#1 based on D:P:S).

?XPOINT	Requests the mix level contribution of the audio input port addressed by <input> to the audio output mixer addressed by <output>.
	Syntax:
	`SEND_COMMAND <DEV>, "'?XPOINT-<input>,<output>'"`
	Variables:
	
	input = 1, 2, 3 where 1=LINE, 2=Mic1, and 3=Mic2
	output = 1..4 where 1 is for the AMP output and 2, 3, and 4 are for the LINEOUT output.
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_2,"'?XPOINT-1,2'"`
	Returns a COMMAND string of the form:
	`XPOINT-<value>,<input>,<output>`

Audio SEND_COMMANDs (Cont.)	

XPOINT	Sets the mix level that the audio input addressed by the parameter <input> provides to the audio output <output> to <value>.
	Note: Audio input ports 1..10 share a setting across them for a specific output mixer's value.
	Syntax:
	`SEND_COMMAND <DEV>, "'XPOINT-<value>,<input>,<output>'"`
	Variables:
	value = -100..0
	input = 1, 2, 3 where 1=Selected audio input, 2=Mic1, and 3=Mic2
	
	output = 1..4 where 1 is for the AMP output and 2, 3, and 4 are for the LINEOUT 2-4 outputs.
	Example:
	`SEND_COMMAND AUDIO_OUTPUT_2,"'XPOINT--75,LINE,2'"`
	Sets the mix level of the selected input's contribution to the audio LINEOUT (2) output to -75.

VIDEO SEND_COMMANDs

The following table lists the video SEND_COMMANDs available for the NCITE-813AC:

Video SEND_COMMANDs	

CI<input>O<output>	Switches both the audio and video input to the output port.
	Syntax:
	`SEND_COMMAND <DEV>, "'CI<input>O<output>'"`
	Variables:
	input = The source input port number.
	output = The output port number to switch to.
	Examples:
	`SEND_COMMAND SWITCHER,"'CI2O1'"`
	Switch (audio/video) input port #2 to output #1.
	`SEND_COMMAND SWITCHER,"'CI4O2'"`

VI<input>O<output>	Switch input to one or more outputs for switcher level Video. Set <input> to 0 for disconnect.
	NOTE: *Port 7 is for digital signals and port 8 is for analog signals.*
	Syntax:
	`SEND_COMMAND <DEV>, "'VI<input>O<output>'"`
	Variables:
	input = The source video input port number.
	output = The video output port number to switch to.
	Example:
	`SEND_COMMAND SWITCHER,"'VI2O1'"`
	Switch video input port #2 to video output #1.

?VIDIN_EDID	Requests the EDID source being mirrored by the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_EDID'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_EDID'"`
	Returns a COMMAND string of the form:
	`VIDIN_EDID-<source>`
	See the VIDIN_EDID command for the list of potential sources.

VIDIN_EDID	Sets the EDID source to mirror in video input port addressed by D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDIN_EDID-<source>'"`
	Variables:
	source = 4K, 4K60, All Resolutions, Wide-screen, Full-screen, Mirror Out 1, Mirror Out 2, Mirror Out 3
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_EDID-MIRROR OUT 2'"`

?VIDIN_EDID_AUTO	Requests whether the EDID source for the video input updates the available list of resolutions at regular intervals.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_EDID_AUTO'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_EDID_AUTO'"`
	Returns a COMMAND string of the form:
	`VIDIN_EDID_AUTO-<status>`

Video SEND_COMMANDs (Cont.)

VIDIN_EDID_AUTO	Sets whether you want the EDID source for the video input to update the list of available resolutions at regular intervals.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDIN_EDID_AUTO-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_EDID_AUTO-ENABLE'"`

?VIDIN_FORMAT	Requests the input format of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_FORMAT'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_FORMAT'"`
	Returns a COMMAND string of the form:
	`VIDIN_FORMAT-<format>`

?VIDIN_HDCP	Queries the video input HDCP compliance setting of the video input port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>,"'?VIDIN_HDCP'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_HDCP'"`
	Returns a string of the form:
	`VIDIN_STATUS-<ENABLE|DISABLE>`

VIDIN_HDCP	Sets the video input HDCP compliance setting of the video input port addressed by the D:P:S. When VIDIN_HDCP is disabled, the addressed video input will appear to any source as not being HDCP compliant. For computer sources that encrypt all video when connected to an HDCP-compliant display, disabling HDCP compliance on the input will cause the computer to send non-encrypted video which can then be routed to non-compliant displays and video conferencing systems.
	This command is not available for DXLink input ports.
	
	NOTE: *It may be necessary to disconnect and re-connect PC sources after changing this setting.*
	
	CAUTION: *Disabling HDCP compliance for sources that do not support non-compliant displays (such as DVD and Blu-Ray players) is not recommended and may affect NCITE performance.*
	
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_HDCP-<option>'"`
	Variables:option = ENABLE, DISABLE (default = ENABLE)
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_HDCP-ENABLE'"`
	Enables the HDCP compliance of video input port (#1 based on D:P:S).

?VIDIN_HSHIFT	Requests the input Horizontal shift of the VGA video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_HSHIFT'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_HSHIFT'"`
	Returns a COMMAND string of the form:
	`VIDIN_HSHIFT-<value>`

VIDIN_HSHIFT	Sets the horizontal shift of the video port addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_HSHIFT-<value>'"`
	Variables:value = -50..50
	Example:
	`SEND_COMMAND "'VIDIN_HSHIFT-2'"`
	Sets the Horizontal shifting of VGA video input port (#1 based on D:P:S) to 2 (shift to right).
	`SEND_COMMAND "'VIDIN_HSHIFT--3'"`
	Sets the horizontal shifting of VGA video input port (#1 based on D:P:S) to -3 (shift to left).

?VIDIN_NAME	Requests the input name of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_NAME'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_NAME'"`
	Returns a COMMAND string of the form:
	`VIDIN_NAME-<name>`

Video SEND_COMMANDs (Cont.)	

VIDIN_NAME	Sets the input name of the video port addressed by the D:P:S to <name>. The <name> length is limited to 63 characters (31 characters for ICSP). Specifying a longer name will result in truncation to the character length limit.
	
	Valid characters are:
	    a-z // lower case letters
	    A-Z // upper case letters
	    0-9 // numeric
	    #.-_=+ // special characters hash, period, dash, underscore, equal, plus
	    <space> // space characters at the beginning of a name are truncated
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_NAME-<name>'"`
	Variables:name = A string name. e.g.: "PC 1"
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_NAME-MyPC'"`
	Sets the name of video input port (#1 based on D:P:S) to MyPC. This is used for the On Screen Display feature.

?VIDIN_PHASE	Requests the input phase of the video port addressed by the D:P:S. This command is valid only for inputs whose format is set to VGA.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_PHASE'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_PHASE'"`
	Returns a COMMAND string of the form:
	`VIDIN_PHASE-<value>`

VIDIN_PHASE	Sets the input phase of the video port addressed by the D:P:S to <value>. This command is valid only for inputs whose format is set to VGA.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_PHASE-<value>'"`
	Variables:value = 0-31
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_PHASE-23'"`
	Sets the phase of video input port (#1 based on D:P:S) to 23.

?VIDIN_PREF_EDID	Requests the preferred resolution of the EDID source being mirrored by the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_PREF_EDID'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_PREF_EDID'"`
	Returns a COMMAND string of the form:
	`VIDIN_PREF_EDID-<resolution>`

VIDIN_PREF_EDID	Sets the preferred resolution for the EDID source to mirror in video input port addressed by D:P:S. You can only set the preferred resolution if you use the VIDIN_EDID command to set the EDID source to 4K, 4K60, All Resolutions, Wide-screen, or Full-screen.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDIN_PREF_EDID-<resolution>'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_PREF_EDID-1280x1024,60'"`

?VIDIN_RES_REF	Requests to resolution of the video input port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_RES_REF'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_RES_REF'"`
	Returns a COMMAND string of the form:
	`VIDIN_RES_REF-<h>x<v>,<rate>`

Video SEND_COMMANDs (Cont.)

VIDIN_RES_REF	Sets the resolution and refresh rate of the video input port addressed by D:P:S. Invalid combinations are ignored by the SWITCHER.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDIN_RES_REF-<horizontal>x<vertical>,<refresh-rate>'"`
	Variables:
	
	horizontal = An integer value representing the horizontal.
	vertical = An integer value representing the vertical. May have an additional qualifier such as 'i' or 'p'.
	refresh-rate = An integer value representing the refresh rate.
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'VIDIN_RES_REF-1440x480i,59'"`
	For a list of supported resolutions, see the Appendix A - Input Resolutions on page 135.

?VIDIN_STATUS	Requests the video input status of the video input port addressed by the D:P:S
	Syntax:
	`SEND_COMMAND <DEV>,"'?VIDIN_STATUS'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_STATUS'"`
	Returns a COMMAND string of the form:
	
	`VIDIN_STATUS-<status string>` status string = NO SIGNAL, UNKNOWN SIGNAL, or VALID SIGNAL.

?VIDIN_VSHIFT	Requests the input Vertical shifting of the VGA video port addressed by the D:P:S. This command is only valid for inputs whose format is set to VGA.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDIN_VSHIFT'"`
	Example:
	`SEND_COMMAND VIDEO_INPUT_1,"'?VIDIN_VSHIFT'"`
	Returns a COMMAND string of the form:
	`VIDIN_VSHIFT-<value>`

VIDIN_VSHIFT	Sets the vertical shift of the video port addressed by the D:P:S to <value>. This command is only valid for inputs whose format is set to VGA.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDIN_VSHIFT-<value>'"`
	
	Variables:value = -10..10
	Example:
	`SEND_COMMAND "'VIDIN_VSHIFT-2'"`
	Sets the vertical shifting of RGB video input port (#1 based on D:P:S) to 2 (shift upward).
	`SEND_COMMAND "'VIDIN_VSHIFT--3'"`
	Sets the vertical shifting of RGB video input port (#1 based on D:P:S) to -3 (shift downward).

?VIDOUT_ASPECT_RATIO	Requests the aspect ratio of the video output port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_ASPECT_RATIO'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_ASPECT_RATIO'"`
	Returns a COMMAND string of the form:
	`VIDOUT_ASPECT_RATIO-<ratio>`
	See the VIDOUT_ASPECT_RATIO command for the list of aspect ratios.

VIDOUT_ASPECT_RATIO	Sets the aspect ratio of the video output port addressed by the D:P:S. Note that the <ratio> value is case sensitive.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDOUT_ASPECT_RATIO-<ratio>'"`
	
	Variables:ratio = MAINTAIN, STRETCH, ZOOM, ANAMORPHIC
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_ASPECT_RATIO-ZOOM'"`

?VIDOUT_BLANK	Requests the image setting of the video blanking feature on the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_BLANK'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_BLANK'"`
	Returns a COMMAND string of the form:
	`VIDOUT_BLANK-<image>`
	See the VIDOUT_BLANK command for the list of images.

Video SEND_COMMANDs (Cont.)

VIDOUT_BLANK	Sets the image of the video blanking feature for the video output port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDOUT_BLANK-<color>'"`
	Variables:image = black, blue, logo 1, logo 2, logo 3
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_BLANK-logo 1'"`

?VIDOUT_BRIGHTNESS	Requests the output brightness of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_BRIGHTNESS'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_BRIGHTNESS'"`
	Returns a COMMAND string of the form:
	`VIDOUT_BRIGHTNESS-<value>`

VIDOUT_BRIGHTNESS	Sets the output brightness of the video port addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDOUT_BRIGHTNESS-<value>'"`
	Variables:value = 0..100
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_BRIGHTNESS-50'"`
	Sets the brightness of video output port (#1 based on D:P:S) to 50.

?VIDOUT_CONTRAST	Requests the output contrast of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_CONTRAST'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_CONTRAST'"`
	Returns a COMMAND string of the form:
	`VIDOUT_CONTRAST-<value>`

VIDOUT_CONTRAST	Sets the output contrast of the video port addressed by the D:P:S to <value>.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDOUT_CONTRAST-<value>'"`
	Variables:value = 0..100
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_CONTRAST-50'"`
	Sets the contrast of video output port (#1 based on D:P:S) to 50.

?VIDOUT_FREEZE	Requests the status of the freeze option of the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_FREEZE'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_FREEZE'"`
	Returns a COMMAND string of the form:
	`VIDOUT_FREEZE-<ENABLE|DISABLE>`

VIDOUT_FREEZE	Enables or disables the Freeze setting on the video port addressed by the D:P:S. If enabled, then the Freeze setting is on. If disabled, then the Freeze setting is off.
	Syntax:
	`SEND_COMMAND <DEV>,"' VIDOUT_FREEZE-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"' VIDOUT_FREEZE-ENABLE'"`

?VIDOUT_MUTE	Requests to see if VIDEO mute is enabled or disabled on the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_MUTE'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?VIDOUT_MUTE'"`
	Returns a COMMAND string of the form:
	`VIDOUT_MUTE<ENABLE|DISABLE>`

VIDOUT_MUTE	Enables or disables the video output display on the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDOUT_MUTE-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND SWITCHER,"'VIDOUT_MUTE-ENABLE'"`

Video SEND_COMMANDs (Cont.)	

?VIDOUT_OSD	Requests whether the video output ports have the OSD setting enabled or disabled.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_OSD'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'? VIDOUT_OSD'"`
	Returns a COMMAND string of the form:
	`VIDOUT_OSD-<ENABLE|DISABLE>`

VIDOUT_OSD	Enables or Disables the On Screen Display (OSD) setting on the video output ports. If enabled, then the OSD setting is on. If disabled, then the OSD setting is off.
	Syntax:
	`SEND_COMMAND <DEV>," VIDOUT_'OSD-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"' VIDOUT_OSD-ENABLE'"`

?VIDOUT_OSD_COLOR	Requests the On Screen Display (OSD) color on the display connected to the video port addressed by the D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'? VIDOUT_OSD_COLOR'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'? VIDOUT_OSD_COLOR'"`
	Returns a COMMAND string of the form:
	`VIDOUT_OSD_COLOR-<color>`

VIDOUT_OSD_COLOR	Determines the On Screen Display (OSD) color scheme on the display connected to the video port addressed by the D:P:S.
	
	Variables:color = black, blue, white, yellow
	Schemes:
	`Options    Background    Font`
	`Black      Black         White`
	`Blue       Blue          Yellow`
	`White      White         Black`
	`Yellow     Yellow        Blue`
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDOUT_OSD_COLOR-<color>'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_OSD_COLOR-BLACK'"`

?VIDOUT_OSD_POS	Requests the On Screen Display (OSD) position on the display connected to the video port ad-dressed by the
	D:P:S.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_OSD_POS'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_OSD_POS'"`
	Returns a COMMAND string of the form:
	`VIDOUT_OSD_POS-<position>`

VIDOUT_OSD_POS	Determines the On Screen Display (OSD) position on the display connected to the video port ad-dressed by the
	D:P:S.
	
	Variables:position = TOP LEFT, TOP RIGHT, BTM RIGHT, BTM LEFT
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDOUT_OSD_POS-<position>'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"' VIDOUT_OSD_POS-TOP LEFT"`

?VIDOUT_RES_REF	Requests the resolution and refresh rate of the video output ports.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_RES_REF'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_RES_REF'"`
	Returns a COMMAND string of the form:
	`VIDOUT_RES_REF-<h>x<v>,<rate>`

Video SEND_COMMANDs (Cont.)

VIDOUT_RES_REF	Sets the resolution and refresh rate of the video output ports. Invalid combinations are ignored by the All-In-One
	Presentation Switcher.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDOUT_RES_REF-<horizontal>x<vertical>,<refresh-rate>'"`
	Variables:horizontal = An integer value representing the horizontal.vertical = An integer value representing the vertical. May have an additional qualifier such as 'i' or 'p'.refresh-rate = An integer value representing the refresh rate.
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_RES_REF-1280x1024,60'"`
	For a list of supported resolutions, see the Appendix B - Output Resolutions on page 137.

?VIDOUT_SCALE	Requests to see which scaling mode the video output ports are using.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_SCALE'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_SCALE'"`
	Returns a COMMAND string of the form:
	`VIDOUT_SCALE-<scale>`

VIDOUT_SCALE	Sets the scaling mode for the video output ports.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDOUT_SCALE-<scale>'"`
	Variables:scale = auto or manual
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_SCALE-AUTO'"`

?VIDOUT_SLEEP_DELAY	Requests the current sleep delay setting for the video output ports.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_SLEEP_DELAY'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_SLEEP_DELAY'"`
	Returns a COMMAND string of the form:
	`VIDOUT_SLEEP_DELAY-<seconds>`

VIDOUT_SLEEP_DELAY	Sets a time delay to automatically turn off the video output ports. The default sleep delay is 30 seconds.
	Syntax:
	`SEND_COMMAND <DEV>,"'VIDOUT_SLEEP_DELAY-<seconds>'"`
	Variables:seconds = 0-32737
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_SLEEP_DELAY-300'"`
	Sets the sleep delay on the video output port 1 to 300 seconds.

?VIDOUT_TESTPAT	Requests the test pattern setting for the video output port.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_TESTPAT'"`
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'?VIDOUT_TESTPAT'"`
	Returns a COMMAND string of the form:
	`VIDOUT_TESTPAT-<pattern>`
	See the VIDOUT_TESTPAT command for the list of test patterns.

VIDOUT_TESTPAT	Sets the test pattern to display for the video output port.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDOUT_TESTPAT-<pattern>'"`
	Variables:pattern = Off, Color Bar, Grill 1:1, Border, Gray Ramp, SMPTE Bar, Logo 1, Logo 2, Logo 3
	(These options are *not* case sensitive.)
	Example:
	`SEND_COMMAND VIDEO_OUTPUT_1,"'VIDOUT_TESTPAT-Color Bar'"`
	Sets the test pattern to display to 'Color Bar'.

Front Panel SEND_COMMANDs

The following table lists the front panel SEND_COMMANDs available for the NCITE-813AC:

Front Panel SEND_COMMANDs	

?FP_LOCKOUT	Requests to see if the Front Panel is locked out.
	Syntax:
	`SEND_COMMAND <DEV>, "'?FP_LOCKOUT'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?FP_LOCKOUT'"`
	Returns a COMMAND string of the form:
	`FP_LOCKOUT-<ENABLE|DISABLE>`

FP_LOCKOUT	Enables or disables whether the Front Panel is supposed to be locked out.
	Syntax:
	`SEND_COMMAND <DEV>,"'FP_LOCKOUT-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND SWITCHER,"'FP_LOCKOUT-ENABLE'"`

?LED	Requests the state of the front panel LEDs: Enabled or Disabled
	Syntax:
	`SEND_COMMAND <DEV>, "'?LED'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?LED'"`
	Returns a COMMAND string of the form:
	`LED-<value>`

LED-<value>	Enable or disable the front panel LEDs
	Syntax:
	`SEND_COMMAND <DEV>, "'LED-<ENABLE|DISABLE>'"`
	Example:
	`SEND_COMMAND SWITCHER,"'LED-DISABLE'"`
	Disables the front panel LEDs.

System SEND_COMMANDs

The following table lists the System SEND_COMMANDs available for the NCITE-813AC:

System SEND_COMMANDs	

?FAN_SPEED	Requests the speed of the fans inside the unit.
	Syntax:
	`SEND_COMMAND <DEV>, "'?FAN_SPEED'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?FAN_SPEED'"`
	Returns a COMMAND string of the form:
	`FAN_SPEED-<fan1>,<fan2>,<fan3>`

?TEMP	Requests the temperature detected inside the controller.
	Syntax:
	`SEND_COMMAND <DEV>,"'?TEMP'"`
	Example:
	`SEND_COMMAND dvDev,"'?TEMP'"`
	Returns a COMMAND string of the form: TEMP-<temp value1>,<temp value2>,<temp value3>.
	Temperature values are in Celsius.

Window Positioning SEND_COMMANDs

The following table lists the Window Positioning SEND_COMMANDs available for the NCITE-813AC:

Window Positioning SEND_COMMANDs	

?PIP_POS	Requests the position of the secondary window when PIP is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>, "'?PIP_POS'"`
	Example:
	`SEND_COMMAND SWITCHER,"'PIP_POS-BOTTOM RIGHT'"`
	Returns a COMMAND string of the form: PIP_POS-<position>.

PIP_POS	This command sets the position of the secondary window when PIP is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>, "'PIP_POS-<position>'"`
	Variable:position = UPL (Upper Left), UPR (Upper Right), LOWL (Bottom Left), LOWR (Bottom Right)
	Example:
	`SEND_COMMAND SWITCHER,"'PIP_POS-LOWR'"`

?PIP_SELECT	Requests the video input to be used for the secondary view when PIP is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>, "'?PIP_SELECT'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?PIP_SELECT'"`
	Returns a COMMAND string of the form: PIP_SELECT-<input>.

PIP_SELECT	This command selects the video input to be used for the secondary view when PIP is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>, "'PIP_SELECT-<input 1-8>'"`
	Example:
	`SEND_COMMAND SWITCHER,"'PIP_SELECT-3'"`

?PIP_SIZE	Requests the size of the secondary window when PIP is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>, "'?PIP_SIZE'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?PIP_SIZE'"`
	Returns a COMMAND string of the form: PIP_SIZE-<size>.

PIP_SIZE	This command sets the size of the secondary window when PIP is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>, "'PIP_SIZE-<size>'"`
	Variable:size = Small, Medium, Large
	Example:
	`SEND_COMMAND SWITCHER,"'PIP_SIZE-SMALL'"`

?VIDOUT_TRANSITION	Requests the video transition mode of the video output when Transition is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIDOUT_TRANSITION'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?VIDOUT_TRANSITION'"`
	Returns a COMMAND string of the form: VIDOUT_TRANSITION-<mode>.

VIDOUT_TRANSITION	This command sets the video transition mode of the video output when Transition is selected as the View Mode.
	The default transition mode is Fade In.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIDOUT_TRANSITION-<mode>'"`
	Variable:mode = Diag Top Left, Diag Top Right, Diag Bottom Left, Diag Bottom Right, Horiz From Left, Horiz From Right, Vert From Top, Vert From Bottom, Fade In
	Example:
	`SEND_COMMAND SWITCHER,"'VIDOUT_TRANSITION-DIAG TOP LEFT'"`

Window Positioning SEND_COMMANDs

?VIEW_MODE	Requests the viewing mode for the video output.
	Syntax:
	`SEND_COMMAND <DEV>, "'?VIEW_MODE'"`
	Example:
	`SEND_COMMAND SWITCHER,"'VIEW_MODE'"`
	Returns a COMMAND string of the form: VIEW_MODE-<mode>.

VIEW_MODE	This command sets the viewing mode for the video output. The default mode is Transition.
	Syntax:
	`SEND_COMMAND <DEV>, "'VIEW_MODE-<mode>'"`
	Variable:mode = Transition, PIP, Window
	Example:
	`SEND_COMMAND SWITCHER,"'VIEW_MODE-PIP'"`

?WIN_POS	Requests the position of the secondary window when Window is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>, "?WIN_POS'"`
	Example:
	`SEND_COMMAND SWITCHER,"'WIN_POS-TB'"`
	Returns a COMMAND string of the form: WIN_POS-<position>.

WIN_POS	This command sets the position of the secondary window when Window is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>, "WIN_POS-<position>'"`
	Variable:position = SBS (Side by Side) or TB (Top Bottom)
	Example:
	`SEND_COMMAND SWITCHER,"'WIN_POS-TB'"`

?WIN_SELECT	Requests the video input to be used for the secondary window when Window is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>, "'?WIN_SELECT'"`
	Example:
	`SEND_COMMAND SWITCHER,"'?WIN_SELECT'"`
	Returns a COMMAND string of the form: WIN_SELECT-<input>.

WIN_SELECT	This command selects the video input to be used for the secondary window when Window is select-ed as the
	View Mode.
	Syntax:
	`SEND_COMMAND <DEV>, "'WIN_SELECT-<input 1-8>'"`
	Example:
	`SEND_COMMAND SWITCHER,"'WIN_SELECT-1'"`

?WIN_SIZE	Requests the size of the secondary window when PIP is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>,"'?WIN_SIZE'"`
	Example:
	`SEND_COMMAND dvDev,"'?WIN_SIZE'"`
	Returns a COMMAND string of the form: WIN_SIZE-<size>.

WIN_SIZE	Sets the size of the secondary window when PIP is selected as the View Mode.
	Syntax:
	`SEND_COMMAND <DEV>,"'WIN_SIZE-<size>'"`
	Variable:size = BOTLARGE (Bottom Large), or TOPLARGE
	Example:
	`SEND_COMMAND dvDev,"'WIN_SIZE-BOTLARGE'"`

Appendix A - Input Resolutions

Available Pixel Display and Refresh Rates

The available pixel display and refresh rates for the input devices on the Digital Video Presentation Systems are listed in the following sections.

DVI, HDMI, and VGA Supported Input Resolutions

DVI, HDMI, and VGA Supported Input Resolutions							
Resolution Name	Horizontal Active Pixels	Vertical Active Lines	Refresh (Hz)	HDMI & DVI Support	VGA Support	Comments	Video Standard
640x400@85	640	400	85	✓	✓		VESA DMT
640x480@60	640	480	60	✓	✓		VESA DMT
640x480@72	640	480	72	✓	✓		VESA DMT
640x480@75	640	480	75	✓	✓		VESA DMT
640x480@85	640	480	85	✓			VESA DMT
720x400@85	720	400	85	✓	✓		VESA DMT
720x480p@60	720	480	60	✓	✓	480p	CEA 861
720x480p@120	720	480	120	✓		480p	CEA 861
720x480p@240	720	480	240	✓		480p	CEA 861
720x576p@50	720	576	50	✓	✓	576p	CEA 861
720x576p@100	720	576	100	✓		576p	CEA 861
720x576p@200	720	576	200	✓		576p	CEA 861
800x500@60	800	500	60	✓			VESA CVT
800x600@56	800	600	56	✓	✓		VESA DMT
800x600@60	800	600	60	✓	✓		VESA DMT
800x600@72	800	600	72	✓	✓		VESA DMT
800x600@75	800	600	75	✓	✓		VESA DMT
800x600@85	800	600	85	✓	✓		VESA DMT
848x480@60	848	480	60	✓			VESA DMT
848x480@75	848	480	75	✓			VESA CVT
848x480@85	848	480	85	✓			VESA CVT
1024x640@60	1024	640	60	✓			VESA CVT
1024x768@60	1024	768	60	✓	✓		VESA DMT
1024x768@70	1024	768	70	✓	✓		VESA DMT
1024x768@75	1024	768	75	✓	✓		VESA DMT
1024x768@85	1024	768	85	✓	✓		VESA DMT
1152x864@75	1152	864	75	✓	✓		VESA DMT
1280x720@50	1280	720	50	✓	✓		CEA 861
1280x720@60	1280	720	60	✓	✓		VESA CVT
1280x720p@60	1280	720	60	✓	✓	720p	CEA 861
1280x720p@100	1280	720	100	✓		720p	CEA 861
1280x720p@120	1280	720	120	✓		720p	CEA 861
1280x768@59	1280	768	59	✓	✓		VESA CVT
1280x768@60	1280	768	60	✓	✓		VESA DMT
1280x768@74	1280	768	74	✓	✓		VESA DMT
1280x768@75	1280	768	75	✓	✓		VESA DMT
1280x768@84	1280	768	84	✓	✓		VESA DMT
1280x768@85	1280	768	85	✓	✓		VESA DMT

DVI, HDMI, and VGA Supported Input Resolutions (Cont.)							
Resolution Name	Horizontal Active Pixels	Vertical Active Lines	Refresh (Hz)	HDMI & DVI Support	VGA Support	Comments	Video Standard
1280x800@60	1280	800	60	✓	✓		VESA CVT
1280x960@60	1280	960	60	✓	✓		VESA DMT
1280x960@85	1280	960	85	✓			VESA DMT
1280x1024@60	1280	1024	60	✓	✓		VESA DMT
1280x1024@75	1280	1024	75	✓	✓		VESA DMT
1280x1024@85	1280	1024	85	✓	✓		VESA DMT
1360x764@60	1360	764	60	✓			VESA CVT
1360x768@60	1360	768	60	✓	✓		VESA DMT
1400x1050@60	1400	1050	60	✓	✓		VESA DMT
1400x1050@75	1400	1050	75	✓			VESA DMT
1440x900@60	1440	900	60	✓	✓		VESA DMT
1440x900@75	1440	900	75	✓			VESA DMT
1440x900@85	1440	900	85	✓			VESA DMT
1600x1200@60	1600	1200	60	✓	✓		VESA DMT
1680x1050@60	1680	1050	60	✓	✓		VESA CVT
1920x1080i@50	1920	540	50	✓		HDMI & DVI only - 1080i	CEA 861
1920x1080i@60	1920	540	60	✓		HDMI & DVI only - 1080i	CEA 861
1920x1080p@25	1920	1080	25	✓	✓	1080p	CEA 861
1920x1080p@30	1920	1080	30	✓	✓	1080p	CEA 861
1920x1080p@50	1920	1080	50	✓	✓	1080p	CEA 861
1920x1080@60	1920	1080	60		✓	VGA only	VESA CVT
1920x1080p@60	1920	1080	60	✓	✓	1080p	CEA 861
1920x1200@60	1920	1200	60	✓	✓	Reduced Blanking	VESA CVT
3840x2160p@24	3840	2160	24	✓			
3840x2160p@25	3840	2160	25	✓			
3840x2160p@30	3840	2160	30	✓			
3840x2160p@60	3840	2160	60	✓			
4096x2160p@24	4096	2160	24	✓			
4096x2160p@25	4096	2160	25	✓			
4096x2160p@30	4096	2160	30	✓			
4096x2160p@60	4096	2160	60	✓			

Appendix B - Output Resolutions

Available Pixel Display and Refresh Rates

The available pixel display and refresh rates for the output devices on the Digital Video Presentation System are listed in the following section.

DVI and HDMI Supported Output Resolutions

DVI and HDMI Supported Output Resolutions					
Resolution Name	Horizontal Active Pixels	Vertical Active Pixels	Refresh (Hz)	Comments	Video Standard
640x480@60	640	480	60		VESA DMT
640x480@72	640	480	72		VESA DMT
640x480@75	640	480	75		VESA DMT
720x480p@60	720	480	60		CEA 861
800x600@60	800	600	60		VESA DMT
800x600@72	800	600	72		VESA DMT
800x600@75	800	600	75		VESA DMT
1024x768@60	1024	768	60		VESA DMT
1024x768@70	1024	768	70		VESA DMT
1024x768@75	1024	768	75		VESA DMT
1280x720p@50	1280	720	50	720p	CEA 861
1280x720p@60	1280	720	60	720p	CEA 861
1280x768@60	1280	768	60		
1280x800@60	1280	800	60		VESA CVT
1280x1024@60	1280	1024	60		VESA DMT
1360x768@60	1360	768	60		VESA DMT
1400x1050@60	1400	1050	60		VESA DMT
1440x900@60	1440	900	60		VESA CVT
1600x1200@60	1600	1200	60		VESA DMT
1680x1050@60	1680	1050	60		VESA CVT
1920x1080@60	1920	1080	60	1080	VESA CVT
1920x1080@50p	1920	1080	50	1080p	CEA 861
1920x1080p@60	1920	1080	60	1080p	CEA 861
1920x1200@60	1920	1200	60	Reduced Blanking	VESA CVT-R
3840x2160p@24	3840	2160	24		
3840x2160p@25	3840	2160	25		
3840x2160p@30	3840	2160	30		
3840x2160p@60	3840	2160	60		
4096x2160p@24	4096	2160	24		
4096x2160p@25	4096	2160	25		
4096x2160p@30	4096	2160	30		
4096x2160p@60	4096	2160	60		

Appendix C - Volume Attenuation Table

Overview

Volume attenuation on the Incite Presentation Systems is not set by percentage. On the Incite Presentation Systems, the output volume slider changes .5dB per click to provide a more subtle adjustment.

Unity gain is at 88, so a setting of 100 is actually 6dB gain. A setting of 20 would be -34 reduction (88-20=68 clicks. @ .5dB per click =34 dB). This is only the output slider.

Volume Attenuation			
Percent	Decibels	Percent	Decibels
100	6.0	49	-19.5
99	5.5	48	-20.0
98	5.0	47	-20.5
97	4.5	46	-21.0
96	4.0	45	-21.5
95	3.5	44	-22.0
94	3.0	43	-22.5
93	2.5	42	-23.0
92	2.0	41	-23.5
91	1.5	40	-24.0
90	1.0	39	-24.5
89	0.5	38	-25.0
88	0.0	37	-25.5
87	-0.5	36	-26.0
86	-1.0	35	-26.5
85	-1.5	34	-27.0
84	-2.0	33	-27.5
83	-2.5	32	-28.0
82	-3.0	32	-28.5
81	-3.5	30	-29.0
80	-4.0	29	-29.5
79	-4.5	28	-30.0
78	-5.0	27	-30.5
77	-5.5	26	-32.0
76	-6.0	25	-32.5
75	-6.5	24	-32.0
74	-7.0	23	-32.5
73	-7.5	22	-33.0
72	-8.0	21	-33.5
71	-8.5	20	-34.0
70	-9.0	19	-34.5
69	-9.5	18	-35.0
68	-10.0	17	-35.5
67	-10.5	16	-36.0
66	-11.0	15	-36.5
65	-11.5	14	-37.0
64	-12.0	13	-37.5
63	-12.5	12	-38.0
62	-13.0	11	-38.5

Volume Attenuation (Cont.)				
Percent	Decibels		Percent	Decibels
61	–13.5		10	–39.0
60	–14.0		9	–41.0
59	–14.5		8	–46.0
58	–15.0		7	–51.0
57	–15.5		6	–56.0
56	–16.0		5	–61.0
55	–16.5		4	–66.0
54	–17.0		3	–71.0
53	–17.5		2	–76.0
52	–18.0		1	–81.0
51	–18.5		0	Infinity
50	–19.0			

LAST REVISED: 07/16/2018

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