Overview

An N-Series system comprises Encoders, Decoders, and other available accessories, including Window Processing (WP) units and Audio Transceivers (ATRs). The system allows you to distribute UHD video and audio across a Gigabit Ethernet network. The Encoders accept HDMI sources and analog audio using a balanced or unbalanced 5-pin Phoenix connection. The Decoders have HDMI video output ports and will support digital audio (with HDMI-to-DVI cable or adapter). Power over Ethernet Plus (PoE+), analog audio, and more depending on the version of Decoder used. Please verify the hardware capabilities needed before ordering.

Each device can be controlled from standard TCP/IP and a secure SSH connection, as outlined below. It is advised to open a persistent socket connection rather than open and close socket connections continuously when sending and receiving communications from N-Series devices.

Standard TCP/IP:

Each device is controllable via TCP/IP direct socket using device IP addresses and port 50001 or 50002. Port 50001 and 50002 support a single connection at one time and reject all other connection attempts until the established connection is closed. Port 50004 is for RS232, supports a single connection at one time, and rejects all other attempts until the established connection is closed.

Secure SSH:

Each device is controllable via an SSH direct socket using device IP addresses and port 50101 or 50102. Port 50101 and 50102 support a single connection at one time and reject all other connection attempts until the established connection is closed. Port 50104 is for RS232 and supports a single connection at one time and rejects all other connection attempts until the established connection is closed.

To send a secure command to port 50101, 50102, or 50104. The command password for the device must be sent with the command string. See below for an example. The default command password is *password*.

password\rvidsrc:hdmi\r

Refer to this document to find the commands needed for your application.

NOTE: In the Example sections of this document, <CR> indicates a carriage return as defined by your control method (e.g., \x0d, $0d, 00x0d, 0x0d, 0dH). <CRLF> is also supported but not required.

Using the Onboard RS-232 Port

Serial communications are enabled on port 50004 or 50104. If a persistent socket is maintained, this becomes a bi-directional serial port to control the attached source or display. There are no commands to send a serial string. Instead, send the manufacturer's serial string to port 50004 or 50104. Any response returns via port 50004 or 50104 as well. To set the serial port settings, use N-Able (free N-Series device management software), a device web page, or a product from the N-Command series of Control systems. Similarly, ports 50001, 50002, 50101, and 50102 only support a single socket connection and reject all other connection attempts until the connection is successfully closed.

Decoders

Command	Description	Example	Notes
getStatus	Returns with current status of device	getStatus\r	Refer to Decoder getStatus response below.
getNetStatus	Returns with current network status of device	getNetStatus\r	Refer to Decoder getNetStatus response below.
idOn	Puts unit into ID mode	idOn\r	Similar to pressing ID button
setSettings:name	Sets a name to the device	setSettings:name:2600Dec\r	
setSettings:factoryRestore:factoryRestore	Resets settings (except IP) to default	setSettings:factoryrestore:factoryrestore\r	Settings (except IP) will be reset to defaults. Unit will reboot during this process.
setSettings:reboot:reboot	Performs a reboot of the device	setSettings:reboot:reboot\r	Performs a software reboot. Does not initiate a full power cycle and does not affect the current settings.
Cmdhistreset:all	Resets the history log of commands	Cmdhistreset:all\r	
settingslock	Locks some settings from being changed	settingslock:<on | off>\r	Locks IP configuration and stream settings. Prevents automated processes from N-Able or N-Command from occurring.
setSettings:OSDMenu	Enables or disables the OSD menu	setSettings:OSDMenu:<on | off>\r	
setSettings:Preview	Enables or disables the web Preview Image	setSettings:Preview:<on | off>\r	
setSettings:debugMode		setSettings:debugMode<on | off>\r	On = starts diagnostic logging Off = ends logging and prepares encrypted debug file for download
seta	Sets audio input stream	seta:50\r	Set to 0 to Follow Video.

Command	Description	Example	Notes
lovolleft	Sets the Left Lineout Volume	lovolleft:50\r	
lovolright	Sets the Right Lineout Volume	lovolright:20\r	
lovol	Sets the Lineout Volume	lovol:50\r	
mute	Disables audio output	mute\r	
unmute	Enables audio output	unmute\r	
setSettings:hdmiAudio	Enables or disables HDMI Audio output	setSettings:hdmiAudio:auto\r	Auto = If connected TV/Display supports digital audio, send audio out DEC HDMI port Off = Do not send audio out the DEC HDMI port
vmute	Disables HDMI output	vmute\r	
vunmute	Enables HDMI output	vunmute\r	
scalerenable	Scales the output to selected mod	scalerenable\r	Upscaling is fully supported. Downscaling is only supporting from 4k60 to 1080p.
scalerdisable	Disables scaling output video	scalerdisable\r	
modeset	Sets the output scaling mode.	modeset:2160p60\r	Supported modes: Auto | 1080p24 | 1080p50 | 1080p60 | 1400x1050p60 | 1920x1200p60 | 2160p25 | 2160p30 | 2160p50 | 2160p60 | 2560x1440p60 | 2560x1600p60 | 720p50 | 720p60 | 1440x900p60 | 1366x768p60
hdmiOff	Disables HDMI output	hdmiOff\r	

Command	Description	Example	Notes
hdmiOn	Enables HDMI output	hdmiOn\r	
CECPower	Sends a CEC Power ON or Power OFF command to connected display	CECPower:on\r	on | off
set	Sets Video Stream number	set:55\r	
live	Enables live play mode	live\r	
local	Enables local playlist content	local:2\r	
setSettings:disableHDMILostStream		setSettings:disableHDMILostStream:on\r	If stream is lost, turns off HDMI when enabled
webPageDisable		webPageDisable\r	Sent over SSL ports, preceded by Command password
webPageEnable		webPageEnable\r	Sent over SSL ports, preceded by Command password
setSettings:gratuitousARP		setSettings:gratuitousARP:<on | off>	Enable to send a periodic Address Resolution Protocol (ARP) packets
setSettings:gratuitousARPInterval		setSettings:gratuitousARPInterval:<number>	Set how often (in seconds) to send ARP packets.
setSettings:sendStatus		setSettings:sendStatus:<on | off>	Enable to send a periodic status packet to the Send Status IP
setSettings:statusIP		setSettings:statusIP:<ip address>	Set the IP address to send status packets to
setSettings:sendStatusInterval		setSettings:sendStatusInterval:<number>	Set how often to send status packets
setSettings:enableDiscoveryPackets		setSettings:enableDiscoveryPackets:<on | off>	Enables the N-Series multicast discovery service
setSettings:discoveryIntervalSec		setSettings:discoveryIntervalSec:<number>	Sets how often (in seconds) to send discovery packets
setSettings:ipdhcp		setSettings:ipdhcp	Sets the IP mode into DHCP mode. Send ipsave in order to take effect.
setSettings:ipset		setSettings:ipset:<ip address>,<netmask>,<gateway>	Send ipsave in order to take effect.

Command	Description	Example	Notes
setSettings:ipsave		setSettings:ipsave	Saves IP settings and reboots unit to take effect.
setSettings:manualDNS		setSettings:manualDNS:on\r	
setSettings:dnsserver<1 | 2 |3>		setSettings:dnsserver1:8.8.8.4\r	
setSettings:IGMPJoinsEnable		setSettings:IGMPJoinsEnable:on\r	
setSettings:IGMPJoinsInterval		setSettings:IGMPJoinsInterval:15\r	
sendser	Sends a stored serial command.	sendSer:PowerOn\r	
setSettings:mainSerialMode		setSettings:mainSerialMode:on\r	on | off
setSettings:mainSerialIP		setSettings:mainSerialIP:169.254.20.100\r	
serSet		serSet:115200,8,none,2\r	Order is: baudrate, databits, parity, stop bits
sendir	Sends stored IR command	sendir:TVOn\r	
setSettings:irPassThroughEnable	Enables Decoder to be IR Client.	setSettings:irPassThroughEnable:on\r	Needs to be enabled on both units. Decoder can only be the IR Client.
setSettings:usbEnable	Enables USB 2.0 traffic.	setSettings:usbEnable:on\r	
setSettings:kvmEnable	Enables KVM traffic.	setSettings:kvmEnable:on\r	
KVMUSB20MainIP	Sets the KVM/USB host IP	KVMUSB20MainIP:169.254.20.20\r	
setSettings:wallEnable	Enables the Video Wall Function on the Decoder	setSettings:wallEnable:on\r	on | off
setSettings:VideoWallHorVer:A,B,C,D	Controls the Layout and Selected display when in Video Wall Mode	setSettings:VideoWallHorVer:4,4,1,2\r	A: Wall Dimension Row B: Wall Dimension Column C: Current Display Position Row C: Current Display Position Column

Decoder getStatus Response		
Response	Description	Note
The response packet detailed in this table is sent as a confirmation to all commands as well as in response to the getStatus command. Additional information may be contained before the response packet. It is recommended when decoding response data to search for the field required and then output the data accordingly. All fields are separated by "\r".		
SVSI_RXGEN2	Device type and serial number	
NAME	Name of device	Serial string with name (255 character max)
MAC	Mac address of device	
IP	IP address of device	
NM	Subnet mask of device	
GW	Gateway of device	
IPTRIAL	IP in trial mode	0 = not in trial mode | 1 = in trial mode
IPMODE	IP mode of device	
ID	Used to show if ID Mode is active	0 = Enabled 1 = Disabled
SWVER	Software version running on device	
WEBVER	Web version running on device	Displays in Unix timestamp
UPDATE	N-Series software specific	Used by N-Able when updating firmware
UPDTRY	N-Series software specific	Used by N-Able when updating firmware
UPDFAILED	N-Series software specific	Used by N-Able when updating firmware
MEDIAPORT0	Multicast traffic control	on = multicast can leave port | off = no multicast can leave port
MEDIAPORT1	Multicast traffic control	on = multicast can leave port | off = no multicast can leave port
STATUSEN	Status of Enable Send Status	0 = Enabled 1 = Disabled
STATUSIP	IP Address used by Send Status	
BAUD	Serial port's communication speed in bits per second	1200 |1800 | 2400 | 4800 | 9600 | 19200 | 38400 | 57600 | 115200
SNUMB	Number of data bits per character specified for the serial port	7 | 8
SPAR	Serial port parity setting	even | odd | none
SP2S	Serial port's stop bit setting	1 | 2
PORTSD1	P1 disabled completely	yes = deactivated (no traffic) | no = active and working
HDMICEVTDLY	N-Act connect event delay time in seconds	up to 24 hours (measured in seconds)
USERMCMODE	Customize multicast address.	on = multicast will be customized | off = multicast will NOT be customized

Decoder getStatus Response		
USERMCIP	Custom multicast address (USERMCMODE must be on)	multicast address
Response	Description	Note
HTTPS		0 = disabled | 1 = enabled
PLAYLIST	Current local playlist	Number 1 - 8
MODE	Scaler output mode	All modes are followed by .mode. Modes = auto | 1080p24 | 1080p50 | 1080p60 | 1400x1050p60 | 1920x1200p60 | 2160p25 | 2160p30 | 2160p50 | 2160p60 | 2560x1440p60 | 2560x1600p60 | 720p50 | 720p60 | 1440x900p60 | 1366x768p60
LINEOUTVOL_L	Current line out volume - left channel	0 - 100%
LINEOUTVOL_R	Current line out volume - right channel	0 - 100%
MUTE	Mute status	0 = audio enabled | 1 = audio disabled
STREAM	Current video stream	Numeric value
STREAMAUDIO	Current audio stream	0 = Follow Video
SCALERBYPASS	Scaler status	yes = scaler IS disabled | no = scaler IS enabled
PLAYMODE	Current playmode	local | live
LIVEAUDIOLP	Play stream audio in local play	on = use stream audio | off = use local play audio
KVMEnableStatus		0 = disabled | 1 = enabled
USB20EnableStatus		0 = disabled | 1 = enabled
KVMMainIP	IP address of encoder	
USB20MainIP	IP address of encoder	
OUTPUT_YUV		auto | on | off
FRAMEHOLD	Hold last good frame on loss of stream	on = enabled | off = disabled
VIDOFFNOSTRM	Disables HDMI port on loss of stream	on = disable HDMI on loss of stream | off= display local play
HDMIOFF	HDMI port state	on = HDMI disabled | off = outputting video
HDMISTATUS	HDMI status	connected = monitor on/detected | disconnected = monitor off/ detached
INPUTRES	Current incoming resolution	
HDMIAUDIO		auto | off
wallEnable	Status of Video Wall Mode	0 = disabled | 1 = enabled
wallHorMons	Video Wall Horizontal Dimension	Numeric value
wallVerMons	Video Wall Vertical Dimension	Numeric value

Decoder getStatus Response		
wallMonPosH	Currently selected monitor Horizontal	Numeric value
wallMonPosV	Currently selected monitor vertical	Numeric value
wallStretch	Video wall in stretch mode status	0 = disabled | 1 = enabled

Decoder getNetStatus Response	
Response	Description
SVSI_NETSTATS	Device type and serial number of the N-Series device
NAME	User-configured name of the N-Series device
MAC	MAC address of the N-Series device
IP	IP address of the N-Series device
NM	Subnet mask of the N-Series device
GW	Gateway IP address of the N-Series device
SWVER	Software version of the N-Series device
CHASSISID	MAC address of the switch connected to the N-Series device
SYSNAME	User-configured name of the switch connected to the N-Series device
SYSDESCR	User-configured description of the switch connected to the N-Series device
PORTID	User-configured name of the switch's port that is connected to the N-Series device
PORTDESCR	User-configured description of the switch's port that is connected to the N-Series device

Encoders

Command	Description	Example	Notes
getStatus	Returns with current status of device	getStatus\r	Refer to Encoder getStatus response below.
getNetStatus	Returns with current network status of device	getNetStatus\r	Refer to Encoder getNetStatus response below.
idOn	Puts unit into ID mode	idOn\r	Similar to pressing ID button
setSettings:name		setSettings:name:2400Enc\r	
setSettings:factoryRestore:factoryRestore	Resets settings (except IP) to default	setSettings:factoryrestore:factoryrestore\r	Settings (except IP) will be reset to defaults. Unit will reboot during this process.
setSettings:reboot:reboot	Performs a reboot of the device	setSettings:reboot:reboot\r	Performs a software reboot. Does not initiate a full power cycle and does not affect the current settings.
Cmdhistreset:all	Resets the history log of commands	Cmdhistreset:all\r	
settingslock	Locks some settings from being changed	settingslock:<on | off>\r	Locks IP configuration and stream settings. Prevents automated processes from N-Able or N-Command from occurring.
setSettings:OSDMenu	Enables or disables the OSD menu	setSettings:OSDMenu:<on | off>\r	
setSettings:Preview	Enables or disables the web Preview Image	setSettings:Preview:<on | off>\r	
setSettings:debugMode		setSettings:debugMode<on | off>\r	On = starts diagnostic logging Off = ends logging and prepares encrypted debug file for download
mute		mute\r	
unmute		unmute\r	
setSettings:hdmiAudio	Sets audio input source	setSettings:hdmiAudio:on\r	On = HDMI Audio Off = Analog Input
vmute	Enables black screen ouptut	vmute\r	

Command	Description	Example	Notes
vunmute	Disables black screen output (shows live video)	vunmute\r	
setSettings:setedid		setSettings:setedid\r	
setSettings:disableHDCPAdvertising	Disables HDCP advertising on video input	setSettings:disableHDCPAdvertising:off\r	on = stops advertising HDCP on input | off = advertise HDCP on input
setSettings:setStream	Sets video stream number	setSettings:setStream:100\r	Each encoder must have a unique stream number
live	Enables live play mode	live\r	
local	Enables local playlist content	local:2\r	
txdisable	Disables transmitting video/audio	txdisable\r	
txenable	Enables transmitting video/audio	txenable\r	
vidsrc	Sets the preferred video source	vidsrc:auto\r	auto (last source connected) hdmi usbc
webPageDisable		webPageDisable\r	Sent over SSL ports, preceded by Command password
webPageEnable		webPageEnable\r	Sent over SSL ports, preceded by Command password
setSettings:gratuitousARP		setSettings:gratuitousARP:<on | off>	Enable to send a periodic Address Resolution Protocol (ARP) packets
setSettings:gratuitousARPInterval		setSettings:gratuitousARPInterval:<number>	Set how often (in seconds) to send ARP packets.
setSettings:sendStatus		setSettings:sendStatus:<on | off>	Enable to send a periodic status packet to the Send Status IP
setSettings:statusIP		setSettings:statusIP:<ip address>	Set the IP address to send status packets to
setSettings:sendStatusInterval		setSettings:sendStatusInterval:<number>	Set how often to send status packets
setSettings:enableDiscoveryPackets		setSettings:enableDiscoveryPackets:<on | off>	Enables the N-Series multicast discovery service

Command	Description	Example	Notes
setSettings:discoveryIntervalSec		setSettings:discoveryIntervalSec:<number>	Sets how often (in seconds) to send discovery packets
setSettings:dscp		setSettings:dscp:<number>	
setSettings:ipdhcp		setSettings:ipdhcp	Sets the IP mode into DHCP mode. Send ipsave in order to take effect.
setSettings:ipset		setSettings:ipset:<ip address>,<netmask>,<gateway>	Send ipsave in order to take effect.
setSettings:ipsave		setSettings:ipsave	Used to confirm IP settings. Unit will reboot.
setSettings:manualDNS		setSettings:manualDNS:on\r	
setSettings:dnsserver<1 | 2 |3>		setSettings:dnsserver1:8.8.8.4\r	
setSettings:usbEnable	Enables USB 2.0 traffic	setSettings:usbEnable:on\r	
setSettings:kvmEnable	Enables KVM traffic	setSettings:kvmEnable:on\r	
setSettings:usbEnable	Enables USB 2.0 traffic	setSettings:usbEnable:on\r	
setSettings:kvmEnable	Enables KVM traffic	setSettings:kvmEnable:on\r	

Encoder Response		
Response	**Description**	**Note**
The response packet detailed in this table is sent as a confirmation to all commands as well as in response to the getStatus command. Additional information may be contained before the response packet. It is recommended when decoding response data to search for the field required and then output the data accordingly. All fields are separated by "\r".		
SVSI_TXGEN2N2615WP15601300202	Device type and serial number	
NAME	Name of device	Serial string with name (255 character max)
MAC	Mac address of device	
IP	IP address of device	
NM	Subnet mask of device	
GW	Gateway of device	
IPTRIAL	IP in trial mode	
IPMODE	IP mode of device	DHCP | Static
ID	Used to show if ID Mode is active	0 = Enabled 1 = Disabled
SWVER	Software version running on device	
WEBVER	Web version running on device	Displays in Unix timestamp
UPDATE	N-Series software specific	Used by N-Able when updating firmware
UPDTRY	N-Series software specific	Used by N-Able when updating firmware
UPDFAILED	N-Series software specific	Used by N-Able when updating firmware
MEDIAPORT0	Multicast traffic control	on = multicast can leave port | off = no multicast can leave port
MEDIAPORT1	Multicast traffic control	on = multicast can leave port | off = no multicast can leave port
STATUSEN	Status of Enable Send Status	0 = Enabled 1 = Disabled
STATUSIP	IP Address used by Send Status	
HDMICEVTDLY	N-Act connect event delay time in seconds	up to 24 hours (measured in seconds)
USERMCMODE	Customize multicast address.	on = multicast will be customized | off = multicast will NOT be customized
USERMCIP	Custom multicast address (USERMCMODE must be on)	multicast address
HTTPS		
PLAYLIST	Current local playlist	Number 0 - 7
VMUTE		0 = video enabled | 1 = video disabled
VSRC	Video source selection	auto | hdmi |usbc

Encoder Response		
VSTS	Current video source	1 = HDMI Selected | 2 = USB-C Selected
MUTE	Mute status	0 = audio enabled | 1 = audio disabled
STREAM	Current video stream	Numeric value
SAMPLE	Sample rate of audio	Fixed to be 48k
HDMIAUDIO		on = HDMI audio enabled off = HDMI audio disabled
vidDetectMode		auto | digital
PLAYMODE	Current mode	local | live
HDMIINPUT	HDMI Status	disconnected | connected
INPUTRES	HDMI incoming resolution	HDMI Resolution
USBINPUT	USB-C Status	disconnected | connected
USBINPUTRES	USB-C incoming resolution	USB-C Resolution
KVMEnableStatus		0 = KVM disabled | 1 = KVM enabled
USB20EnableStatus		0 = USB 2.0 disabled | 1 = USB 2.0 enabled

Enocder getNetStatus Response	
Response	Description
SVSI_NETSTATS	Device type and serial number of the N-Series device
NAME	User-configured name of the N-Series device
MAC	MAC address of the N-Series device
IP	IP address of the N-Series device
NM	Subnet mask of the N-Series device
GW	Gateway IP address of the N-Series device
SWVER	Software version of the N-Series device
CHASSISID	MAC address of the switch connected to the N-Series device
SYSNAME	User-configured name of the switch connected to the N-Series device
SYSDESCR	User-configured description of the switch connected to the N-Series device
PORTID	User-configured name of the switch's port that is connected to the N-Series device
PORTDESCR	User-configured description of the switch's port that is connected to the N-Series device

3000 RESEARCH DRIVE, RICHARDSON, TX 75082 AMX.com | 800.222.0193 | 469.624.8000 | +1.469.624.7400 | fax 469.624.7153
AMX (UK) LTD, AMX by HARMAN - Unit C, Auster Road, Clifton Moor, York, YO30 4GD United Kingdom • +44 1904-343-100 • www.amx.com/eu/
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