

An N-Series system is comprised of Encoders, Decoders, and other available accessories including Network Video Recording (NVR) solutions, Window Processing (WP) units, and Audio Transceivers (ATRs). The system allows you to distribute HD video and audio across a Gigabit Ethernet network. The Encoders accept HDMI sources including DVI-D, VGA, and Component through the use of passive adapters and analog audio using a balanced or unbalanced Phoenix connection. The Decoders have HDMI video output ports and will support digital audio (with HDMI-to-DVI cable or adapter). Options for Power over Ethernet (PoE), analog audio, and more depend on the version of Decoder used. Please verify hardware capabilities needed prior to ordering.

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

Refer to this document to find the commands needed for your application. This document applies to the N2312 and N2322 Encoders and Decoders.

NOTE: This information is considered current as of the date of publication. AMX reserves the right to add/modify/remove commands and change the standard response packet as needed.

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. 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, simply send the manufacturer's serial string to port 50004. Any response returns via port 50004 as well. To set the serial port settings, use N-Able (free N-Series device management software) or a product from the N-Command series of Control systems. Similarly to port 50002, this port only supports a single socket connection and rejects all other connection attempts until the open connection is successfully closed.

Getting More Information

To find direct control commands for other devices (other than N2312 Encoders and N2322 Decoders) and for more information on controlling an N-Series device using N-Able or N-Command, please refer to additional documentation found on our website (<http://www.amx.com/techcenter/manuals.asp>).

Decoders

Device Status				
Command	Description	Response	Example	Notes
getStatus	Returns with current status of device.	Current status of device	getStatus<CR> or ?<CR>	Refer to return packet information in the <i>Decoder Response</i> table on page 4.
getNetStatus	Returns with current network status of device.	Current status of device	getNetStatus<CR>	Refer to return packet information in the <i>Decoder getNetStatus Response</i> table on page 6.

Video/Audio Switch				
Command	Description	Response	Example	Notes
set	Switches video streams.	Current status of device	set:1<CR>	If Decoder is set to Audio Follows Video this will also switch the audio stream. If set to a non-existent stream (like stream 0) then Decoder will revert to local play content.
seta	Switches audio streams.	Current status of device	seta:1<CR>	
KVMMasterIP:<ip>[, <video>]	KVM switch	Current status of device	KVMMaster:169.254.1.100,1	Changes the KVM to switch to an Encoder specified by the <ip> number. If <video> is 1, the video switches to the Encoder's video stream (and audio if following). If <video> is 0, only the USB access switches. If <video> is blank, defaults to 1.

Audio Controls				
Command	Description	Response	Example	Notes
mute	Disables audio output.	Current status of device	mute<CR>	This affects both analog outputs (if available) and digital outputs.
unmute	Enables audio output.	Current status of device	unmute<CR>	
lovol	Changes audio output level.	Current status of device	lovol:50<CR>	Range in Percentage 0 - 100%

Mode Change				
Command	Description	Response	Example	Notes
live	Changes mode to live play.	Current status of device	live<CR>	Only needed if Decoder has been commanded to local play.
local	Changes mode to local play.	Current status of device	local:4<CR>	8 playlists available, values: 0 - 7
hdmiOff	Disables video output.	Current status of device	hdmiOff<CR>	
hdmiOn	Enables video output.	Current status of device	hdmiOn<CR>	On by default. Only needed if HDMI port has already been disabled.

Scaler Controls				
Command	Description	Response	Example	Notes
scalerenable	Enables scaled output.	Current status of device	scalerenable<CR>	Enables scaler to selected output resolution.

Scaler Controls (Cont.)				
Command	Description	Response	Example	Notes
scalerdisable	Disables scaled output.	Current status of device	scalerdisable<CR>	Disables scaler. Video output is source resolution.
modeset	Changes output resolution.	Current status of device	modeset:1080p60<CR>	Modes = auto 1080p59.94 1080p60 720p60 4K30 4K25 Note: auto = scale to display native resolution

External Device Control				
Command	Description	Response	Example	Notes
sendir	Activates a stored IR command.	Current status of device	sendir:commandname<CR>	Command name is name created during commissioning project. If command is saved as PON - then command would be: sendir:PON.
sendirraw: <commanddata>	Sends IR command with Pronto Code.	Current status of device	sendirraw: 0000 006C 0022 0000 015B 00AD 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0041 0016 0622<CR>	Sends Pronto Hex Code to attached IR port. No need to pre-store command in device.
sender: <commandname>	Executes serial command stored in unit's software. Recall is by saved name.	Current status of device	sender:play<CR>	The <commandname> is case and space sensitive. We recommend saving the commands as lowercase, all one word (for example, playpause).
serSet	Configures serial port to desired settings.	Current status of device	serSet:9600,8,none,1<CR>	serSet:baudrate,databits,parity,stop. Reference N-Able or other control software for valid settings. Only needed if serial port has not been initialized with N-Command software.
setSettings: irPassThroughEnable: [on,off]	Enables the IR passthrough to send and accept IR signals from other N2300 devices.	Current status of device	setSettings: irPassThroughEnable: on<CR>	on = IR passthrough enabled off = IR passthrough disabled
irClientIP	Sets the IP address of the unit to receive the IR passthrough data.	Current status of device	irClientIP:192.168.1.11<CR>	
setSettings:wallEnable: [on,off]	Enables wall processing.	Current status of device	setSettings:wallEnable: on<CR>	

External Device Control (Cont.)				
Command	Description	Response	Example	Notes
setSettings:wallHorMons:[1-16]	Sets number of monitors horizontally in the video wall.	Current status of device	setSettings:wallHorMons:4<CR>	
setSettings:wallVerMons:[1-8]	Sets the number of monitors vertically in the video wall.	Current status of device	setSettings:wallVerMons:4<CR>	
setSettings:wallMonPosH:[0-15]	Sets the horizontal position of this Decoder's monitor in the video wall.	Current status of device	setSettings:wallMonPosH:2<CR>	
setSettings:wallMonPosV:[0-7]	Sets the vertical position of this Decoder's monitor in the video wall.	Current status of device	setSettings:wallMonPosV:7	
setSettings:wallStretch:[fit,stretch,auto]	Defines how a video is scaled to the wall area.	Current status of device	setSettings:wallStretch:fit<CR>	auto = Decoder decides the best scaling method. fit = Scales video to fit the wall area, changing the aspect ratio as needed. stretch = Stretches the video to fill the wall, maintaining the aspect ratio and cropping as needed.
setSettings:wallHShift:[0-64]	Sets the bezel adjustment on the left edge in 3840x2160 measured pixels.	Current status of device	setSettings:wallHShift:64<CR>	
setSettings:wallVShift:[0-64]	Sets the bezel adjustment on the top edge in 3840x2160 measured pixels.	Current status of device	setSettings:wallVShift:64<CR>	

Decoder Response		
Response	Description	Notes
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:N2322A00000185	Device type and serial number	
NAME: Decoder 2K	Name of device	Serial string with name (255 character max)
MAC:00:19:0B:85:01:20	Mac address of device	
IP:169.254.34.55	IP address of device	
NM:255.255.0.0	Subnet mask of device	
GW:169.254.1.1	Gateway of device	
IPTRIAL:0	IP in trial mode	N-Series software specific
IPMODE:DHCP	IP mode of device	DHCP Static Auto IP
rel:0.0.29	Software release number	N-Series software specific
SWVER:9/29/2016	Software version running on device	N-Series software specific
WEBVER:1412023780	Web version running on device	N-Series software specific
UPDATE:0	N-Series software specific	N-Series software specific

Decoder Response (Cont.)		
Response	Description	Notes
UPDTRY:0	N-Series software specific	N-Series software specific
UPDFAILED:0	N-Series software specific	N-Series software specific
MEDIAPORT0:on	Multicast traffic control	on = multicast can leave port off = no multicast can leave port
MEDIAPORT1:off	Multicast traffic control	on = multicast can leave port off = no multicast can leave port
DIVASEN:0	N-Series software specific	N-Series software specific
DIVASIP:0.0.0.0	N-Series software specific	N-Series software specific
BAUD:115200	Serial port's communication speed in bits per second	300 1200 2400 4800 9600 14400 19200 28800 38400 57600 115200 230400
SNUMB:8	Number of databits per character specified for the serial port	7 8
SPAR:none	Serial port parity setting	even odd none
SP2S:1	Serial port's stop bit setting	1 2
PORTSD1:no	P1 disabled completely	yes = deactivated (no traffic) no = active and working
HDMICEVTDLY:1	N-Act connect event delay time in seconds	up to 24 hours (measured in seconds)
HDMIDEVTDLY:1	N-Act disconnect event delay time in seconds	up to 24 hours (measured in seconds)
USERMCMODE:off	Customize multicast address.	on = multicast will be customized off = multicast will NOT be customized
USERMCIP:0.0.0.0	Custom multicast address (USERMCMODE must be on)	multicast address
PLAYLIST:1	Current local playlist	Number 0 - 7
MODE:720p60.mode	Scaler output mode	All modes are followed by .mode. Modes = auto 1080p59.94 1080p60 720p60 4K30 4K25
LINEOUTVOL_L:35	Current line out volume - left channel	0 - 100%
LINEOUTVOL_R:35	Current line out volume - right channel	0 - 100%
MUTE:0	Mute status	0 = audio enabled 1 = audio disabled
STREAM:3	Current video stream	Numeric value
STREAMAUDIO:0	Current audio stream	Numeric value 0 = follow video
SCALERBYPASS:no	Scaler status	yes = scaler IS disabled no = scaler IS enabled
PLAYMODE:local	Current playmode	local live
LIVEAUDIOLP:off	Play stream audio in local play	on = use stream audio off = use local play audio
YUVOUT:auto	Color space settings	auto on = YUV output off = normal output
FRAMEHOLD:off	Hold last frame if stream lost	on = hold last frame off = display local play
VIDOFFNOSTRM:off	Disabled HDMI port on loss of stream	on = disable HDMI on loss of stream off = display local play
HDMIOFF:off	HDMI port state	on = HDMI disabled off = outputting video
HDMISTATUS:disconnected	HDMI status	connected = monitor on/detected disconnected = monitor off/detached
INPUTRES:1280x720	Current incoming resolution	

Decoder getNetStatus Response	
Response	Description
SVSI_NETSTATS:N2322A20000383	Device type and serial number of the N-Series device
NAME:CBTest2300DEC	User-configured name of the N-Series device
MAC:00:19:0B:80:31:9E	MAC address of the N-Series device
IP:169.254.119.168	IP address of the N-Series device
NM:255.255.0.0	Subnet mask of the N-Series device
GW:169.254.1.1	Gateway IP address of the N-Series device
SWVER:10/24/2016	Software version of the N-Series device
chassisID:mac e0:d1:73:f5:0d:1d	MAC address of the switch connected to the N-Series device
sysName:switchf50d1d	User-configured name of the switch connected to the N-Series device
sysDescr:SG500X-24P 24-Port Gigabit with 4-Port 10-Gigabit PoE Stackable Managed Switch	User-configured description of the switch connected to the N-Series device
portID:ifname gi1/1/5	User-configured name of the switch's port that is connected to the N-Series device
portDescr:gigabitethernet1/1/5	User-configured description of the switch's port that is connected to the N-Series device
FPGAVER:0/0/2000	Bit file version of the N-Series device

Encoders

Device Status				
Command	Description	Response	Example	Notes
getStatus	Returns with current status of device.	Current status of device	getStatus<CR> or ?<CR>	Refer to return packet information in the <i>Encoder Response</i> table on page 8.
getNetStatus	Returns with current network status of device.	Current status of device	getNetStatus<CR>	Refer to return packet information in the <i>Encoder getNetStatus Response</i> table on page 10.

Audio Status				
Command	Description	Response	Example	Notes
mute	Disables audio input.	Current status of device	mute<CR>	This affects both analog inputs and digital inputs.
unmute	Enables audio input.	Current status of device	unmute<CR>	

Mode Change				
Command	Description	Response	Example	Notes
live	Changes mode to live play.	Current status of device	live<CR>	Only needed if Encoder has been commanded to local play.
local	Changes mode to host play.	Current status of device	local:4<CR>	8 playlists available, values: 1 - 8
txdisable	Disables all broadcasts from Encoder.	Current status of device	txdisable<CR>	Any Encoders currently viewing stream will transition to local play.
txenable	Enables broadcast from Encoder.	Current status of device	txenable<CR>	Re-enables broadcasting from Encoder if previously disabled.
vidsrc	Select the video input on the Encoder. Preferred modes are not supported. Therefore, when in auto mode (and both input types are plugged in) a preferred mode is undefined.	Current status of device	vidsrc:hdmionly<CR>	Video input selections = hdmionly vgaonly auto

External Device Control				
Command	Description	Response	Example	Notes
sendirraw: <commanddata>	Sends IR command with Pronto Code.	Current status of device	sendirraw: 0000 006C 0022 0000 015B 00AD 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0041 0016 0622<CR>	Sends Pronto Hex Code to attached IR port. No need to pre-store command in device.

External Device Control (Cont.)				
Command	Description	Response	Example	Notes
sender: <commandname>	Executes serial command stored in unit's software. Recall is by saved name.	Current status of device	sender:play<CR>	The <commandname> is case and space sensitive. We recommend saving the commands as lowercase, all one word (for example, playpause).
serSet	Configures serial port to desired settings.	Current status of device	serSet:9600,8,none,1<CR>	serSet:baudrate,databits,parity,stop. Reference N-Able or other control software for valid settings. Only needed if serial port has not been initialized with N-Command software.

Encoder Response		
Response	Description	Notes
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_TXGEN2:N2312A00000151	Device type and serial number	
NAME: Encoder 2K	Device name	
MAC:00:19:0B:00:08:86	Device MAC	
IP:169.254.119.168	Device IP	
NM:255.255.0.0	Device subnet mask	
GW:169.254.1.1	Device gateway	
IPTRIAL:0	IP trial mode (during resetting of IP addresses)	N-Series software specific
IPMODE:STATIC	IP mode of device	DHCP Static Auto IP
ID:0	N-Series software specific	N-Series software specific
rel:0.0.29	Software release number	N-Series software specific
SWVER:10/21/2016	Software version	N-Series software specific
WEBVER:1371820321	Web interface version	N-Series software specific
UPDATE:0	Update flags for N-Series updater	N-Series software specific
UPDTRY:0	Update flags for N-Series updater	N-Series software specific
UPDFAILED:0	Update flags for N-Series updater	N-Series software specific
MEDIAPORT0:on	P0 multicast status	on = multicast can leave port off = no multicast can leave port
MEDIAPORT1:on	P1 multicast status	on = multicast can leave port off = no multicast can leave port
DIVASEN:0	N-Series software specific	N-Series software specific
DIVASIP:0.0.0.0	N-Series software specific	N-Series software specific
BAUD:9600	Serial port's communication speed in bits per second	300 1200 2400 4800 9600 14400 19200 28800 38400 57600 115200 230400
SNUMB:8	Number of databits per character specified for the serial port	7 8
SPAR:none	Serial port parity setting	even odd none

Encoder Response (Cont.)		
Response	Description	Notes
SP2S:1	Serial port's stop bit setting	1 2
PORTSD1:no	P1 disabled completely	yes = deactivated (no traffic) no = active and working
HDMICEVTDLY:1	N-Act connect event delay time in seconds	up to 24 hours (measured in seconds)
HDMIDEVTDLY:1	N-Act disconnect event delay time in seconds	up to 24 hours (measured in seconds)
USERMCMODE:off	Customize multicast address	on = multicast will be customized off = multicast will NOT be customized
USERMCIP:0.0.0.0	Custom multicast address (USERMCMODE must be on)	multicast address
PLAYLIST:1	Host playlist to be displayed	Playlists are 1 - 8
MUTE:0	Mute status	0 = audio enabled 1 = muted
STREAM:134	Broadcast stream of Encoder	
SAMPLE:44100	Audio sample rate	
HDMIAUDIO:auto	HDMI audio state	auto on off
vidDetectMode:auto	Input video detection mode	auto digital analog
PLAYMODE:live	Device mode	live local
HDMIINPUT:connected	Source status	connected = source is available disconnected = no source
INPUTRES:1280x720	Current incoming resolution	
SOGWindow:16	Current sync on green sensitivity	0-63

Encoder getNetStatus Response	
Response	Description
SVSI_NETSTATS:N2312A20000383	Device type and serial number of the N-Series device
NAME:CBTest2300ENC	User-configured name of the N-Series device
MAC:00:19:0B:80:31:9E	MAC address of the N-Series device
IP:169.254.119.168	IP address of the N-Series device
NM:255.255.0.0	Subnet mask of the N-Series device
GW:169.254.1.1	Gateway IP address of the N-Series device
SWVER:10/24/2016	Software version of the N-Series device
chassisID:mac e0:d1:73:f5:0d:1d	MAC address of the switch connected to the N-Series device
sysName:switchf50d1d	User-configured name of the switch connected to the N-Series device
sysDescr:SG500X-24P 24-Port Gigabit with 4-Port 10-Gigabit PoE Stackable Managed Switch	User-configured description of the switch connected to the N-Series device
portID:ifname gi1/1/5	User-configured name of the switch's port that is connected to the N-Series device
portDescr:gigabitethernet1/1/5	User-configured description of the switch's port that is connected to the N-Series device
FPGAVER:0/0/2000	Bit file version of the N-Series device