

An SVSI 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.

Legacy hardware and N3000 Series hardware is backwards-compatible (which allows both legacy and N3000 Series products to be used within the same system as needed).

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. Commands are case-sensitive. This document applies to the N3000 Series of 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 (SVSI's free device management software) or a product from the N-Command series of SVSI 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 N3000 Encoders and Decoders) and for more information on controlling an SVSI device using N-Able or N-Command, please refer to additional documentation found on our website (www.amx.com/svsi/resources.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 the return packet information in the <i>Decoder Response</i> table on page 4.

Video/Audio Switch				
Command	Description	Response	Example	Notes
setSettings:decoderMode	Specifies AVI stream type (URL or SVSI Encoder).	Current status of device	setSettings:decoderMode:URL<CR> or setSettings:decoderMode:SVSIEncoder<CR>	If using the N-Able matrix, set to SVSIEncoder. If using a third-party stream that is specified by a URL, set to URL.
setSettings:streamURL	Specifies the URL of the third-party stream.	Current status of device	setSettings:streamURL: rtp://234.1.0.102:5500<CR>	Only applies when decoderMode (above) is set to URL.
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. Only applies when decoderMode (above) is set to SVSIEncoder.
seta	Switches audio streams.	Current status of device	seta:1<CR>	

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%
lovolleft	Changes audio output level left channel.	Current status of device	lovolleft:50<CR>	Range in Percentage 0 - 100%
lovolright	Changes audio output level right channel.	Current status of device	lovolright: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: 1 - 8
dviOff	Disables video output.	Current status of device	dviOff<CR>	

Mode Change (Cont.)				
Command	Description	Response	Example	Notes
dviOn	Enables video output.	Current status of device	dviOn<CR>	On by default. Only needed if DVI 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.
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 480p 480p59.94 720p59.94 720p60 <i>Note: auto = scale to display native resolution</i>

External Device Control				
Command	Description	Response	Example	Notes
sendir	Activates a stored IR command on Decoder.	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,st op. Reference N-Able or other control software for valid settings. Only needed if serial port has not been initialized with N-Command software.

Decoder Response		
Response	Description	Notes
Response packet is sent as a confirmation to all commands. 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 "\x0D".		
SVSI_RXGEN2:N322A040000463	Device type and serial number	
NAME:Adam 3K	Name of device	Serial string with name (255 character max)
MAC:00:19:0B:00:0D:BE	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	SVSI software specific
IPMODE:AUTO IP	IP mode of device	DHCP Static Auto IP
SWVER:3/24/2016	Software version running on device	SVSI software specific
WEBVER:1412023780	Web version running on device	SVSI software specific
UPDATE:0	SVSI software specific	SVSI software specific
UPDTRY:0	SVSI software specific	SVSI software specific
UPDFAILED:0	SVSI software specific	SVSI 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	SVSI software specific	SVSI software specific
DIVASIP:0.0.0.0	SVSI software specific	SVSI software specific
discoveryIP:239.254.12.16	SVSI software specific	SVSI software specific
enableDiscoveryPackets:on	SVSI software specific	SVSI software specific
discoveryIntervalSec:10	SVSI software specific	SVSI software specific
discoveryPort:50019	SVSI software specific	SVSI 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
MODE:720p60.mode	Scaler output mode	All modes are followed by .mode. Modes = auto 1080p59.94 1080p60 480p 480p59.94 720p59.94 720p60
PORTSD1:no	P1 disabled completely	yes = deactivated (no traffic) no = active and working
GARP:0	Gratuitous ARP option enabled/disabled	SVSI software specific
GARPINT:50	Interval setting	SVSI software specific
UNSOLST:1	Unsolicited status (to SVSI controllers)	SVSI software specific
UNSOLSTINT:10	Interval setting	SVSI software specific
ID:0	SVSI software specific	SVSI software specific
DVICEVTDLY:1	N-Act connect event delay time in seconds	up to 24 hours (measured in seconds)

Decoder Response (Cont.)		
Response	Description	Notes
DVIDEVTDLY: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
LPDISKSPACE:83268608	Available disk space for local play storage	SVSI software specific
HTTPS:0	Use secure network connection	0 = off 1 = on
UNICASTMODE:no	Unicast mode	yes = unicast mode is enabled no = unicast mode is disabled
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
ADDLATENCYMILLISEC:0	Amount of additional stream latency applied	Delay time in milliseconds
SUPPORTBFRAMES:on	Decoder is to expect B-Frames in the stream	on off
SCALERBYPASS:no	Scaler status	yes = scaler IS disabled no = scaler IS enabled
PLAYMODE:local	Current playmode	local live
PLAYLIST:1	Current local playlist	Number 1 - 8
HDMIAUDIO:on	HDMI audio settings	auto on off
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
SIMDVIDET:on	Simplified DVI detect	on off
FRAMEHOLD:off	Hold last frame if stream lost	on = hold last frame off = display local play
VIDOFFNOSTRM:off	Disabled DVI port on loss of stream	on = disable DVI on loss of stream off= display local play
DVIOFF:off	DVI port state	on = DVI disabled off = outputting video
DVISTATUS:disconnected	DVI status	connected = monitor on/detected disconnected = monitor off/detached
INPUTRES:1280x720	Current incoming resolution	
XPORTPORT:18888	Network port for the UDP/RTP stream	port number
FPGAVER:8/1/2014	SVSI software specific	SVSI software specific
NEEDVSTRM:0	Not receiving current assigned stream	0 = receiving stream 1 = not receiving stream
ND_MRRQ:172.20.87.80	Results of SVSI N-Able Network Diagnostic Tools	Tracks potential networking issues. Contact SVSI technical support for more information.

Decoder Response (Cont.)		
Response	Description	Notes
ND_MRRQ_CHG:0	Results of SVSI N-Able Network Diagnostic Tools	Tracks potential networking issues. Contact SVSI technical support for more information.
ND_A_DROP:341	Results of SVSI N-Able Network Diagnostic Tools	Tracks potential networking issues. Contact SVSI technical support for more information.
ND_A_DROP1S:0	Results of SVSI N-Able Network Diagnostic Tools	Tracks potential networking issues. Contact SVSI technical support for more information.
ND_V_DROP:4448	Results of SVSI N-Able Network Diagnostic Tools	Tracks potential networking issues. Contact SVSI technical support for more information.
ND_V_DROP1S:0	Results of SVSI N-Able Network Diagnostic Tools	Tracks potential networking issues. Contact SVSI technical support for more information.
ND_F_DROP:0	Results of SVSI N-Able Network Diagnostic Tools	Tracks potential networking issues. Contact SVSI technical support for more information.
ND_F_DROP1S:0	Results of SVSI N-Able Network Diagnostic Tools	Tracks potential networking issues. Contact SVSI technical support for more information.
FCPC:on	Force copy protection	on auto

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 7.

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. Hdmivga or vga hdmi select a preferred order (digital over analog, or analog over digital) when both sources are connected.	Current status of device	vidsrc:hdmionly<CR>	Applies to the N3132 only. Video input selections = hdmionly vgaonly hdmivga vga hdmi

Scaler Controls				
Command	Description	Response	Example	Notes
scalerenable	Enables scaled output.	Current status of device	scalerenable<CR>	Enables scaler. Content will be broadcast as selected output resolution.
scalerdisable	Disables scaled output.	Current status of device	scalerdisable<CR>	Disables scaler.
modeset	Changes output resolution.	Current status of device	modeset:1080p60<CR> >	Modes = 1080p59.94 1080p60 480p 480p59.94 720p59.94 720p60

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.
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
SVSI_TXGEN2:N312A0300 00006	Device type and serial number	
NAME:Adam N-Enc	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)	SVSI software specific
IPMODE:AUTO IP	IP mode of device	DHCP Static Auto IP

Encoder Response (Cont.)		
Response	Description	Notes
SWVER:6/21/2014	Software version	SVSI software specific
WEBVER:1371820321	Web interface version	SVSI software specific
UPDATE:0	Update flags for SVSI updater	SVSI software specific
UPDTRY:0	Update flags for SVSI updater	SVSI software specific
UPDFAILED:0	Update flags for SVSI updater	SVSI 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	SVSI software specific	SVSI software specific
DIVASIP:0.0.0.0	SVSI software specific	SVSI software specific
discoveryIP:239.254.12.16	SVSI software specific	SVSI software specific
enableDiscoveryPackets:on	SVSI software specific	SVSI software specific
discoveryIntervalSec:10	SVSI software specific	SVSI software specific
discoveryPort:50019	SVSI software specific	SVSI 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
SP2S:1	Serial port's stop bit setting	1 2
MODE:720p59.94.mode	Scaler output mode	All modes are followed by .mode. Modes = auto 1080p59.94 1080p60 480p 480p59.94 720p59.94 720p60
PORTSD1:no	P1 disabled completely	yes = deactivated (no traffic) no = active and working
GARP:0	Gratuitous ARP option enabled/disabled	N-Command specific
GARPINT:50	Interval for ARP	N-Command specific
UNSOLST:1	Unsolicited status enabled	N-Command specific
UNSOLSTINT:10	Interval for unsolicited status	N-Command specific
ID:0	SVSI software specific	SVSI software specific
DVICEVTDLY:1	N-Act connect event delay time in seconds	up to 24 hours (measured in seconds)
DVIDEVDLY: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
UNICASTMODE:no	Unicast mode	yes = unicast mode is enabled no = unicast mode is disabled
UNICASTADDR:0.0.0.0	Unicast network address for the AV stream (if unicast mode is enabled)	IP address
LPDISKSPACE:95454208	Host play disk space	SVSI software specific
HTTPS:0	Use secure network connection	0 = off 1 = on
LINEIN:bal	Line in is balanced or unbalanced	se = unbalanced audio bal = balanced audio

Encoder Response (Cont.)		
Response	Description	Notes
MUTE:0	Mute status	0 = audio enabled 1 = muted
STREAM:134	Broadcast stream of Encoder	
SAMPLE:44100	Audio sample rate	
AUDIODELAY:21000	Audio delay in milliseconds	SVSI software specific (not currently used)
CLRSPCCOR:auto	Color space correction	auto on off <i>Note: Should be auto.</i>
HPNONSUP:off	Host play in unsupported mode	SVSI software specific
HDMIAUDIO:auto	HDMI audio state	auto on off
LIVEAUDIOHP:off	Use live audio source while in HP mode	on off (SVSI software specific)
STREAMPCMAUDIO:off	Indicates separate SVSi-compatible audio stream transmitted by an Encoder	on off
QUALITY:100	Compression level	SVSI software specific
MOTQUAL:100	Motion level	SVSI software specific
VIDEOBITRATE:5000000	Bitrate for the compressed video stream	bitrate in bits per second
SCALERBYPASS:yes	Scaler enabled/disabled	yes = disabled no = enabled
PLAYMODE:live	Device mode	live local
PLAYLIST:1	Host playlist to be displayed	Playlists are 1 - 8
OUTBW:1034160	Output bandwidth in bytes per second	SVSI software specific
OUTBWMBS: 7.8	Output bandwidth in megabytes per second	SVSI software specific
AUDOUTBW:192000	Current compressed audio bitrate	bitrate in bits per second
AUDOUTBWKBS:192.0	Current compressed audio bitrate	bitrate in kilobits per second
DVIINPUT:connected	Source status	connected = source is available disconnected = no source
DVIPASSTHR:disconnected	Passthrough port	connected = monitor detected disconnected = no monitor
PTSIMDVIDET:off	Simplified DVI detect for passthrough port	SVSI software specific
PTYUVOUT:auto	Passthrough color correction	auto on off
PTHDMIAUDIO:on	Passthrough HDMI audio	on off
CPC:allowed	Allow HDCP video to be encoded?	allowed blocked
CISPROT:not-protected	Current source protected?	protected not-protected
INPUTRES:1280x720	Current incoming resolution	
XPORTSTREAM:on	Transport stream encapsulation	on off
RTPENCAP:off	RTP stream encapsulation	on off
RTMPURL:rtmp:	URL for RTMP transmission	content server's URL
RTMPStream:none	RTMP stream name	content server's stream name
STREAMURL:rtsp://169.254.151.33:8554/N3000	Network URL for Encoder AV stream	stream URL
AGAINL:0	Volume control - left channel (gain only)	0 - 100%

Encoder Response (Cont.)		
Response	Description	Notes
AGAINR:0	Volume control - right channel (gain only)	0 - 100%
FPGAVER:6/20/2014	SVSI software specific	SVSI software specific
REDBRIGHTNESS:-64	Analog video brightness adjustment	-127 to 127
GREENBRIGHTNESS:-64	Analog video brightness adjustment	-127 to 127
BLUEBRIGHTNESS:-64	Analog video brightness adjustment	-127 to 127
SOGWindow:16	Current sync on green sensitivity	0-63
INPUTGAINLEFT:0	Audio input gain (left channel)	0 -1.5 -3 -4.5 -6 -7.5 -9 -10.5 -12 dB
INPUTGAINRIGHT:0	Audio input gain (right channel)	0 -1.5 -3 -4.5 -6 -7.5 -9 -10.5 -12 dB
RTSPPORT:8554	RTSP network port number	port number