NIELSEN ENCODER SOLUTIONS 2021

Linear Solutions

NIELSEN ENCODER FAQ

How does Nielsen encoding work?

Using the science of psychoacoustics, Nielsen is able to use the way our ear perceives sound to mask the audio watermark in your broadcast. In some situations an otherwise clearly audible sound can be masked by another sound. For example, conversation at a bus stop can be completely impossible if a loud bus is driving past. This phenomenon is called masking. A weaker sound is masked if it is made inaudible in the presence of a louder sound. Nielsen's watermark carries a unique identification of your broadcast, a timestamp of when the watermark was inserted, and it rides in your broadcast audio masked from the human ear throughout all the distribution paths of your programming.

Do the encoders change the audio experience for the viewers?

No, the Nielsen audio watermark is masked from the human ear. To validate this, Nielsen submitted the Watermarks technology to the Dolby Labs Golden Ears program and to the labs of the major Broadcast Networks and National Cable Networks. Nielsen's masking has been certified by all these labs.

What do I need to encode?

Each unique program channel will need to be encoded with a unique Nielsen audio watermark.

What are the different types of encoders, and which one do I need?

There are various solutions including Vendors for which the products have been Certified to use our Nielsen SDK, all inserting the same information. Below is an overview, with a comparison chart on the next few pages.

Do I need to buy additional equipment to support the encoders?

Unlikely, but this needs to be determined on a client-by-client basis. Nielsen Linear Solutions will be examining your broadcast audio to determine if any processing is necessary, and will reach out to your engineering team for specifics about your broadcast air chain.

What are the inputs to the encoder, and where in my air chain does it go?

For all Nielsen encoding solutions, you will need a program stream input, external clock source input (LTC, NTP, etc.) and an Ethernet connecCon to your local network. The encoder should be placed after all input switching devices in your plant, and prior to any and all distribution paths. Nielsen Linear Solutions will guide you through every step of this process. Please contact them via web, email, or phone using the information on the last page.

NIELSEN WATERMARKS ENCODER COMPARISON

Cost and Feature Comparison

PRODUCT	FEATURES	INSTALLATION	COST	
Ross NWE-3GA	Fully configurable, single card per signal solution – Open Gear chassis sold separately. 3G, HD, SD video (3 Gb/s, 1.5 Gb/s, or 270 Mb/s) and 16 SDI embedded or 8 AES channel audio. Multiple channels require multiple cards, each card uses 3 frame slots.	Prior to the stations ATSC digital encoder	3GA Card Open-gear Frame	$5950.00 $1800.00
Ross NWE-TS	DVB-ASI input, 19.39 Mbps ATSC TS compliant only. Nielsen Watermark to up to 4 unique channels and configurable to assign different Nielsen SID values to each of the selected audio streams, suitable for single-program and Multi-program Transport Streams.	After the stations ATSC digital encoder.	NWE-TS	$8900.00
Linear Acoustic AERO.100	DTV Audio Processor AEROMAX® processing, UPMAX® II upmixing/ downmixing, Dolby® encoding/decoding, BS.1770 loudness metering, requires single unit for each program stream	Audio Processing	AERO.100	~$13,000.00
Linear Acoustic AERO.2000	Combines loudness control, AEROMAX® audio processing, Dolby® encoding/decoding, unmatched up-mixing via UPMAX® II, and Nielsen Watermark encoder module at additional cost, requires single unit for each program stream	Audio Processing	AERO 2000	~$25,000.00
Linear Acoustic AERO.8000	One or two instances of AEROMAX® real time adaptive wideband and/or multiband processing, ITU-R BS.1770-3 or EBU R128 metering, UPMAX®-II 2-channel to 5.1-channel upmixing/downmixing with automatic detection and automatic downmix replacement, Dolby® encoding/decoding, Available Dolby® Digital/Dolby Digital Plus transcoding.	Audio Processing	AERO.8000	Check with Vendor

NIELSEN WATERMARKS ENCODER COMPARISON

Cost and Feature Comparison (Cont.)

	Vendors	Amagi	Ateme	Cinegy	Evertz	Evertz	Evertz	Grass Valley	Harmonic	Harmonic	Linear Acoustic	Linear Acoustic	Linear Acoustic	Linear Acoustic	Mediakind (Ericsson)	Pebble Beach	Ross	Ross	Ross
	Products	Cloudport	Titan Live	CinegyAir 11.2	OvertureRT Live	OvertureRT Live -VM	OvertureRT Render X	ICE	Electra X	VOS	AERO.100	AERO.2000	AERO.8000	LA-5300	Media First Encoding Live	Dolphin	NWE-3GA	NWE-TS	NWE-IP
Product Types	Audience Measurement	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
	Linear Watermark Encoder	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
	Loudness Management / CALM		☑		☑	☑	☑	☑	☑		☑	☑	☑	☑	☑	☑			
	Cloud Base Video Processing / Ch. Playout	☑	☑	☑		☑		☑		☑					☑				
	HEVC encoding for broadcast and OTT		☑				☑		☑						☑				
	IT Base Watermark Encoder		☑																☑
	IT Based Multi Ch. Playout	☑			☑														
	Multi-channel Playout	☑	☑	☑	☑			☑								☑			
	multiplexing over IP				☑			☑	☑										
	Software Based	☑	☑		☑	☑													
NFiealtsuerne s	Time Shift and Broadcast Delay				☑	☑	☑	☑	☑								☑	☑	☑
	Multiple Encoding Engine (Encoding Instances)				☑	☑	☑					☑	☑				☑	☑	☑
	Syndication																		
	SID Reservation System (SRS)																		
	CBET L1 Numeris							☑			☑	☑	☑	☑			☑	☑	☑
	International Watermark							☑									☑	☑	☑
AUDIO	Audio Channels	Up to 16 tracks (8 channels per track)	Check with Vendor	64 +	Playout of 8 channel audio clip files	Playout of 8 channel audio clip files	Playout of 8 channel audio clip files	Check with Vendor	Check with Vendor	Check with Vendor	varies upon configuration. Check with Vendor	varies upon configuration. Check with Vendor	varies upon configuration. Check with Vendor	varies upon configuration. Check with Vendor	Up to 8 stereo paris. Radio Channels for IPTV	Up to 16 audio output channels depending on wrapper & codec	8 audio pairs via HD/SD SDI 4 audio pairs via AES-3	Up to 10 (5.1) audio programs	8 audio streams (1 stereo pair and a 5.1 surround)
	AAC	☑	☑	☑	☑	☑	☑	☑	☑						☑	☑			
	AC-3	☑	☑	☑	☑	☑	☑	☑	☑		☑	☑	☑	☑	☑				
	AC-4		☑					☑	☑					☑					
	AES-3	☑	☑	☑	☑				☑		☑	☑	☑	☑	☑		☑		
	AES67		☑	☑				☑					☑	☑					☑
	Dolby Digital	☑	☑	☑	☑	☑	☑	☑			☑	☑	☑	☑	☑	☑			
	Dolby Digital Plus	☑	☑		☑	☑	☑	☑			☑	☑	☑	☑	☑		☑		
	Dolby Digital Plus transcoding	☑	☑					☑	☑		☑	☑	☑	☑	☑				
	Dolby Digital transcoding	☑	☑					☑	☑		☑	☑	☑	☑	☑				
	Dolby E	☑	☑		☑	☑	☑	☑	☑						☑	☑			
	DVB-ASI	☑	☑																
	E-AC-3	☑	☑		☑	☑	☑		☑		☑	☑	☑	☑	☑				
	EAS Support		☑	☑	☑	☑	☑	☑			☑	☑	☑	☑	☑				
	He-AAC		☑						☑						☑				
	ID3, Cross-stream Prevention ESAM/SCTE35		☑	☑	☑	☑		☑							☑				
	Mix, Shuffle, Dolby Encode/Decode	☑	☑	☑	☑	☑	☑	☑			☑	☑	☑	☑	☑				
	MP2	☑	☑	☑	☑	☑	☑								☑				
	MPEG-1 Layer II,	☑	☑		☑	☑	☑		☑						☑	☑			

	PCM	☑	☑	☑	☑	☑	☑	☑			☑	☑	☑	☑	☑				
	SDI	☑	☑	☑	☑			☑			☑	☑	☑	☑	☑		☑		
	SMPTE ST 2022-6		☑		☑			☑	☑						☑	☑			
	SMPTE ST 2110		☑	☑	☑			☑	☑					☑	☑	☑			☑
	SMPT ST 2210-30		☑		☑			☑						☑	☑				
	Upmix/Downmix		☑	☑	☑	☑	☑	☑			☑	☑	☑	☑	☑				
VIDEO	**Number of Video Channels**	**1 per playout**	**Check with Vendor**	**upto 16 per server (SD)**	**Up to 4x live HD or SD inputs**	**Up to 4x live HD or SD inputs**	**Up to 4x live HD or SD inputs**	**Check with Vendor**	**Check with Vendor**	**Check with Vendor**	**1**	**1**	**1**	**1**	**Check with Vendor**	**4, 8 or 12 inputs/outputs. Dependent on environment and use case - Check with Vendor**	**1**	**Up to 32 programs**	**4**
	Multiple Frame Rates and compressed/uncompressed video and audio I/O.	☑	☑	☑	☑	☑	☑	☑			☑	☑	☑	☑	☑				
	3GHz	☑	☑					☑	☑					☑	☑		☑		
	AVI			☑				☑											
	DPP			☑				☑											
	DVB-ASI	☑																☑	
	DVB-IP	☑	☑	☑											☑	☑			
	GXF	☑			☑	☑	☑	☑											
	H264	☑	☑	☑	☑	☑	☑	☑	☑						☑	☑			
	H264/MPEG2 IP	☑	☑	☑	☑	☑		☑							☑	☑			
	H265	☑	☑	☑	☑	☑	☑								☑	☑			
	HD/SD - SDI (NTSC, ATSC)	☑	☑	☑	☑	☑	☑	☑	☑		☑	☑	☑	☑	☑	☑	☑		
	HD/SD - SDI (PAL)	☑	☑	☑	☑	☑	☑	☑	☑		☑	☑	☑	☑		☑	☑		
	HEVC	☑	☑	☑					☑						☑	☑			
	IMX	☑		☑	☑	☑	☑	☑											
	JPEG			☑	☑	☑	☑	☑											
	MOV	☑		☑	☑	☑	☑	☑								☑			
	MPEG-2	☑	☑	☑	☑	☑	☑	☑	☑						☑	☑		☑	
	MPEG-4		☑	☑	☑	☑	☑	☑	☑						☑				
	MPEG-TS	☑	☑	☑	☑	☑	☑	☑							☑	☑		☑	
	MPG	☑		☑	☑	☑	☑	☑											
	MPTS		☑													☑			
	MXF	☑		☑	☑	☑	☑	☑											
	PNG			☑	☑	☑	☑	☑											
	SMPTE 2022	☑	☑					☑											
	SMPTE 2022-2 MPEG-2	☑	☑					☑											
	SMPTE ST 2022-6		☑		☑			☑								☑			
	TGA	☑		☑	☑	☑	☑	☑											
	TIFF			☑	☑	☑	☑	☑											
	UHD	☑	☑	☑	☑	☑	☑	☑						☑	☑	☑			
	Up/Down/Cross Conversion, AFD Based Scaling.	☑	☑	☑	☑	☑	☑	☑	☑						☑				
Estimated Cost		**Check with Vendor**	**Check with Vendor**	**Check with Vendor**	**Check with Vendor**	**Check with Vendor**	**Check with Vendor**	**Check with Vendor**	**Check with Vendor**	**Check with Vendor**	**$13,000.00**	**$25,000.00**	**Check with Vendor**	**Check with Vendor**	**Check with Vendor**	**Check with Vendor**	**$6000 per card**	**$9,000**	**(1) Stream $11,000 (4) Streams $25,000**

ENCODER CONTACT INFORMATION

Technical Support and Links

Encoder Support Portal:
https://engineeringportal.nielsen.com//docs/Main_Page

Nielsen Encoder Policy & our latest software:
https://nielsendownloads-blue.digitalengsdk.com/tv/Encoding/Encoding_Installation_and_Configuration_Policy_Rev_G.pdf

Nielsen Encoder Support Team: (800) 537-4872, Option 2 or encoders@nielsen.com


nielsen
This artwork was created using Nielsen data.
Copyright © 2019 The Nielsen Company (US), LLC. Confidential and proprietary. Do not distribute.