



# Nielsen Encoder Solutions - 2023

Nielsen Client Engineering

# 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 three solutions, all inserting the same information. Below is an overview, with a comparison chart on the next page.

- ❑ **Ross Video NWE-3G card\*** - This type of Nielsen encoder is used in the standard SD or HD non-compressed audio/video domain. This is compatible with most broadcast paths.
- ❑ **Ross Video NWE-TS Encoder** - This type of Nielsen encoder is used in the standard ASI compressed stream. This is specifically for broadcast paths that utilize ASI stream splicing technology.
- ❑ **Linear Acoustics Nielsen Encoder module** - This type of Nielsen encoder is also used in the standard SD or HD non-compressed audio/video domain, but utilizes the Linear Acoustics audio processing hardware.
- ❑ **Nielsen SDK** Integrated into various Vendors broadcast hardware

## 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 Engineering 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 3 types of Nielsen encoders, you will need a program stream input, external clock source input (LTC, NTP, etc.) and an Ethernet connection 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 Client Engineering will guide you through every step of this process. Please contact them via web, email, or phone using the information on the last page.

# Hardware Encoder Comparison

PRODUCT	FEATURES	INSTALLATION	COST
<b>Ross NWE-3GA</b>	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 \$5950.00 Open-gear Frame      \$1800.00
<b>Ross NWE-TS</b>	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
<b>Linear Acoustic AERO.100</b>	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
<b>Linear Acoustic AERO.2000</b>	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
<b>Linear Acoustic AERO.8000</b>	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

# Nielsen SDK Certified Vendor Appliances

The URLs below will point your browser to the appropriate section of the Nielsen Client Engineering Portal to review the available Nielsen SDK certified vendor products that may suit your needs.

To obtain pricing, features and related documentation for Nielsen SDK certified vendor products, please contact the vendor or vendors of interest directly.

[Nielsen Encoder Certified Vendors](#)

[PCM-to-ID3 Certified Vendors](#)

[Nielsen Decoder Certified Vendors](#)

[Nielsen Radio Certified Vendors](#)

# Encoder Contact Information

## Nielsen Encoder Policy and Information

Nielsen Encoder Portal: [https://engineeringportal.nielsen.com/docs/Main\\_Page](https://engineeringportal.nielsen.com/docs/Main_Page)

### Nielsen Encoder Policy

<https://niensendownloads-blue.digitalengsdk.com/tv/Encoding/Encoder+Policy+2022+-+04-01-22.pdf>

Nielsen Encoder Support Team: (800) 537-4872 or [encoders@nielsen.com](mailto:encoders@nielsen.com)

### Nielsen Client Engineering Contacts:

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