

**WyreStorm.**



**NHD-500 Series**  
**Dante AV-A™**

**Application Guide**

Version: V1.0.0

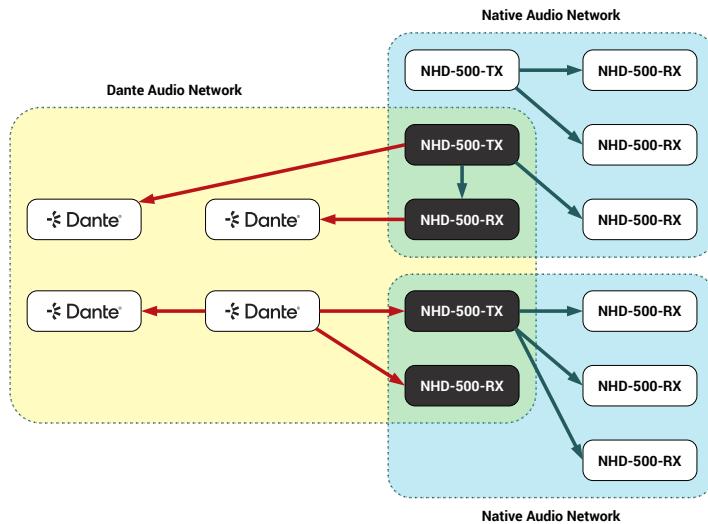


# Overview

To enrich the compatibility of various devices in audio over IP domain. We decided to join the Dante audio network which has the most audio network market share in the world.

In this application, we provide some primary feature shows below:

## Specifications

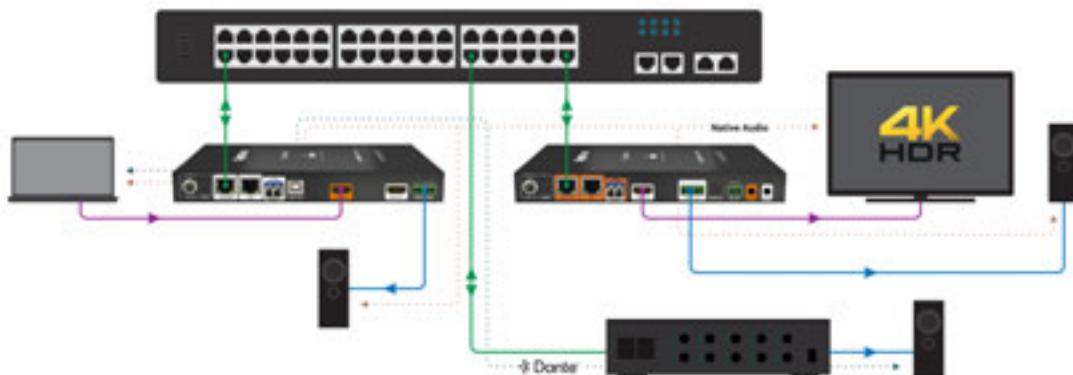


Feature	Description	
Dante Audio Channels	2x2 (Input x Output)	
Sample Rate	48KHz	
Audio Format	LPCM Only	
PCM Sample Format	Signed 32-bit little endian	
Encoder	<b>Dante Transmitter</b>	From HDMI-In or analog audio input to Dante network
	<b>Dante Receiver</b>	From Dante network to NHD-500 native audio network
Decoder	<b>Dante Transmitter</b>	From NHD-500 native audio network to Dante network
	<b>Dante Receiver</b>	From Dante network to HDMI-Out and analog audio output

# Use Cases

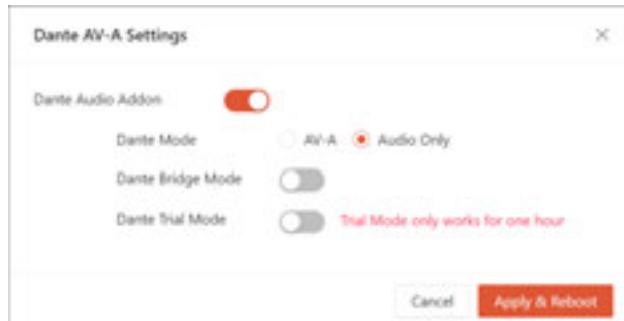
## Use Case 1 – Dante Audio on Encoder:

The NHD-500-TX simultaneously generates both a native audio stream and a Dante stream. A standard NHD-500-RX subscribes to the native audio stream, playing it through both its HDMI and analog outputs. Meanwhile, a Dante amplifier subscribes to the Dante stream and outputs the audio to connected speakers.

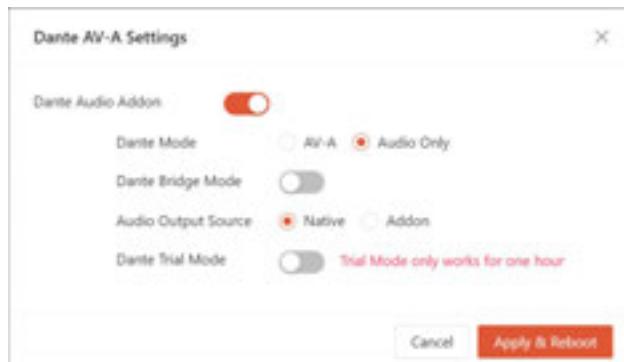


### Configuration:

Encoder:

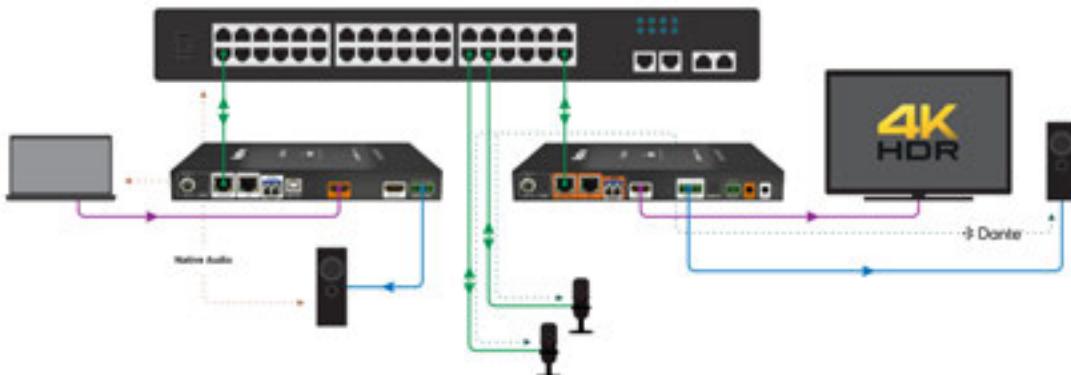


Decoder:



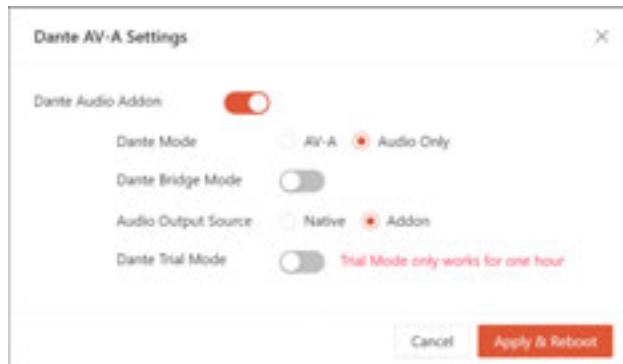
## Use Case 2 – Dante Audio on Decoder:

Receive audio from Dante Player to NHD-500-RX, output to both HDMI and analog output.



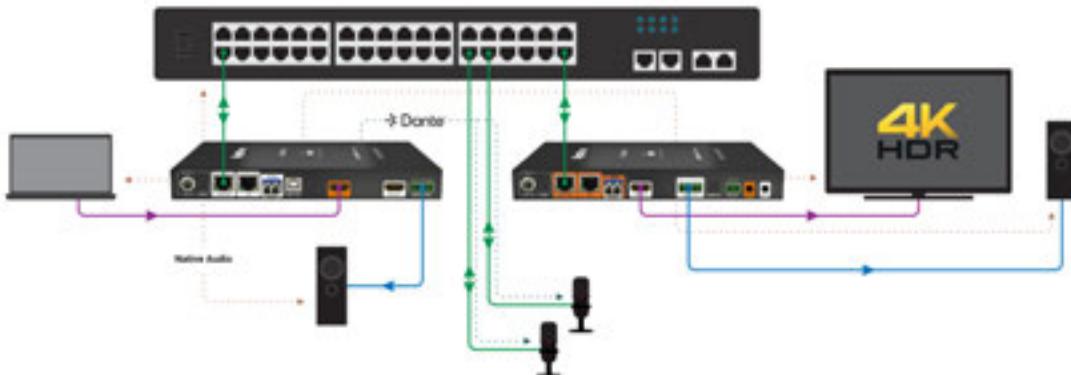
### Configuration:

Decoder:



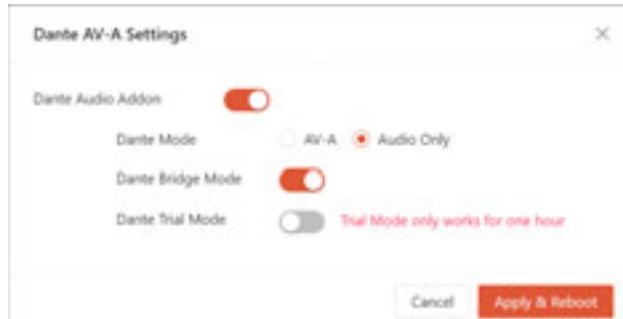
## Use Case 3 – Bridge Dante to native Audio:

In this use case, we demonstrate how to utilize the NHD-500-TX with Dante AV as a bridge, effectively connecting the Dante audio network with the NHD-500 audio system.



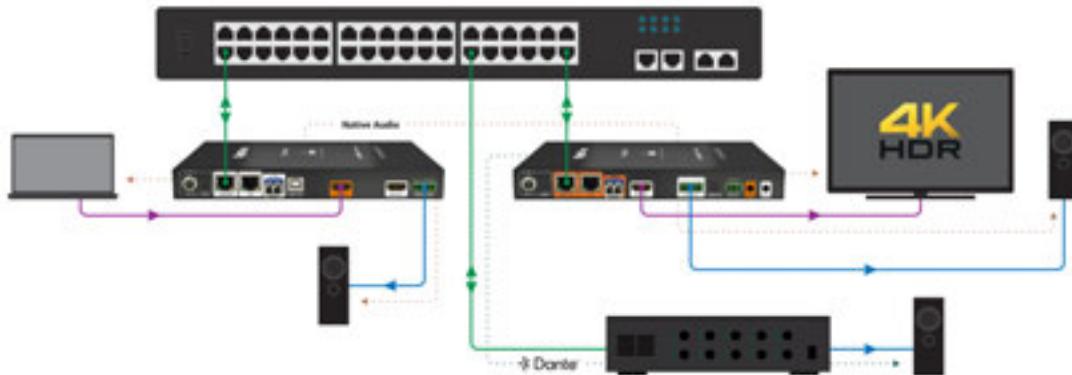
### Configuration:

Encoder:



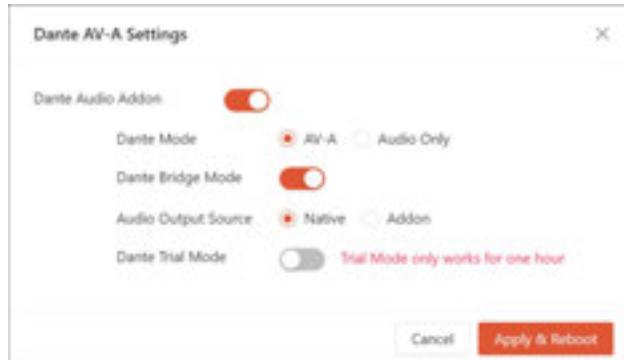
## Use Case 4 – Bridge Native Audio to Dante:

In this use case, we show how to use NHD-500-RX with Dante AV as a bridge between NHD-500 audio network and Dante audio network.



### Configuration:

Decoder:



## Related Configurations

### Configurations

#### Setup Time

Require FW > 1.8.x

Dante AV-A Settings	Description	Value (Bold is Default)	Encoder / Decoder
<b>Dante Audio Add-on</b>	Audio Add-on Selection	<b>Enable</b> <b>Disable</b>	Encoder / Decoder
<b>Dante Bridge Mode</b>	Enable bridge between two audio networks.	<b>Enable</b> <b>Disable</b>	Encoder / Decoder
<b>Audio Output Source</b>	Source selection for I2S output.	<b>Native</b> <b>Add-on</b>	Decoder
<b>Dante Trial Mode</b>	Enable Dante trial mode without activation (one hour for free testing)	<b>Enable</b> <b>Disable</b>	Encoder / Decoder

#### NOTE:

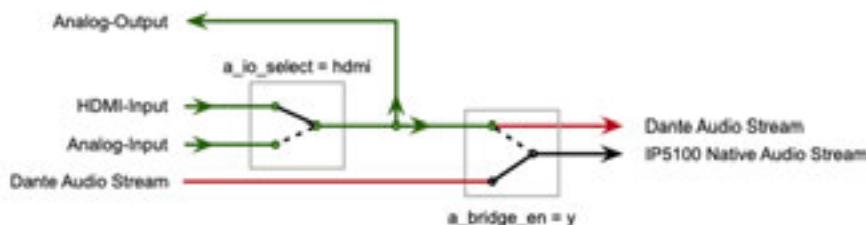
- With Dante Trial Mode enabled, the NHD-500 can operate with Dante for one hour. After this period, Dante will automatically stop working. A 'reboot' will reset the trial, allowing for another free testing session.
- When the Dante Audio Addon is disabled, the unit will not be discovered by Dante Controller. Once the addon is enabled but not activated via Dante Activator, the unit will appear in Dante Controller as 'unlicensed'.

# Relationship between audio data flow and configurations:

## Encoder:

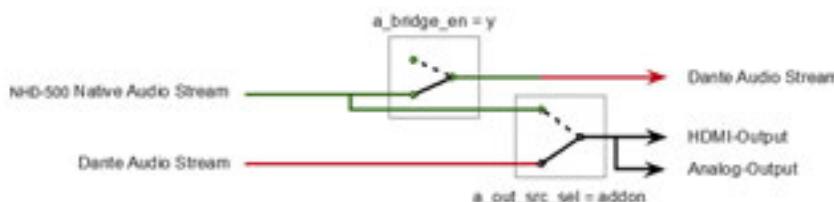
1. HDMI/Line-in is always fed to the Dante Audio Output Stream.
2. Dante Bridge Mode chooses whether to provide the HDMI/Analog audio (when mode is Disabled) or the Dante Audio Output Stream (when mode is Enabled) into the NHD-500 Native Audio Output stream.

Dante Bridge Mode	Source	Audio Output Stream
n	HDMI-Input	Dual Native and Dante Audio network
n	Analog-Input	Dual Native and Dante Audio network
y	HDMI-Input	Dante Audio network
y	Analog-Input	Dante Audio network
y	Dante Audio Stream	NHD-500 Native Audio Stream



## Decoder:

1. **a\_out\_src\_sel** switches between the **Dante Audio Stream** and the **NHD-500 Audio Native Stream**.
2. **a\_bridge\_en** bridges the **NHD-500 Native Audio Stream** to the **Dante Audio Stream**.



# Known Limitation and Issues

## Known limitation.

- Video Control is not supported on NHD-CTL and Dante controller at the same time.
- Currently the firmware is configured as 2x2 only.
- No 8-channel license available now, current only support 2x2.

## Known Issues

- Clock syncing issue: If the Clock Master in network reboot, the Dante AV-A will be always noise.
- Audio Repeat issue: When audio lost, Dante will repeat last audio.
- Resample issue: Not support HDMI audio resample, HDMI Sample rate mismatch with Audinate Controller configuration, will be mute.

