Wisdom Audio
1572 College Parkway, Suite 164
Carson City, NV 89706
775-887-8850

Configuring the Storm Audio ISP with Wisdom Audio Dante Amplifiers

Notes:

- The Storm Audio ISP AoIP module outputs AES67, not Dante.
- All connected Dante devices must be AES67 capable. Wisdom DSP Amplifiers **are** AES67 capable.
- Dante Virtual Sound card is not AES67 capable.
- All Dante devices such as the Wisdom DSP amplifiers only support 48 kHz in AES67 mode.
- The Storm Audio ISP internal processing is at 48 kHz.
- AES67 mode can handle a maximum of 32 output streams (mono channels).
- Setup requires wired network connections, WiFi is not supported

Before beginning the software setup, be sure you have completed the amplifier rack layout and identified which amplifiers will be connected to which speakers or zones. Part of the DANTE setup includes naming amplifiers and/or properly identifying the amplifiers on the network. Having this information before beginning will make the setup much easier and faster.

It is **STRONGLY** recommended that you use a standalone network switch just for the AES67/Dante connections. Do not connect this switch to the main network unless you are configuring the system at the initial set-up stage. Once configuration is completed, disconnect the "Dante" switch from the home network. Ethernet for communication and control should be separate from Audio over IP (AoIP).

Alternatively, you can use a VLAN (Isolated) Switch just for the AES67/Dante connections.

Network configuration is the most likely cause of faulty or intermittent audio. For small systems an unmanaged gigabit switch should work without any issues. For large systems either use a managed switch that you configure based on recommendations from Audinate for Dante or Merging Technologies for Ravenna, or use a managed switch that has Dante or AES67 presets.

Ethernet and AoIP Connections (Wired Network)

First, connect all the following network devices to the same network switch(s):

- A Storm Audio ISP equipped with the AoIP option, Ethernet and AoIP
- Wisdom SA-X DSP Amplifiers – Dante AoIP connections only, Ethernet setup should be done separately after Dante setup is complete keeping Ethernet and Dante on separate LAN
- A computer with Dante Controller installed.

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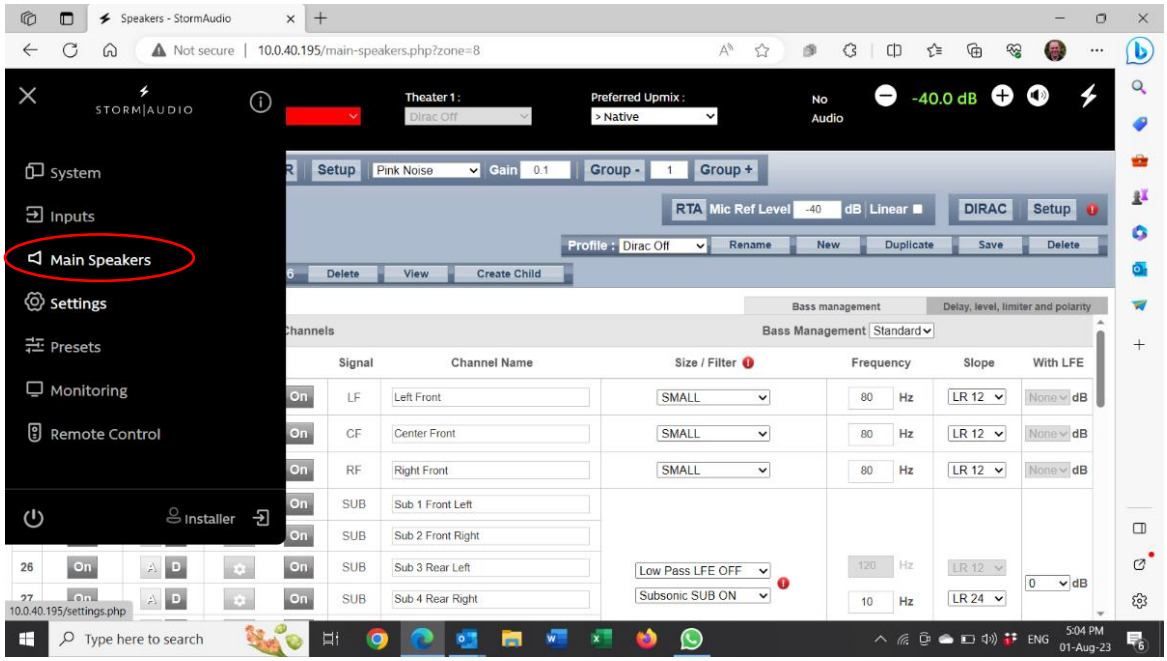
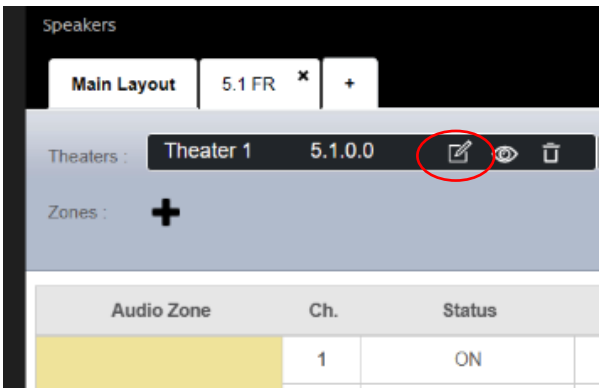
Set-up the Storm Audio ISP for Digital Output

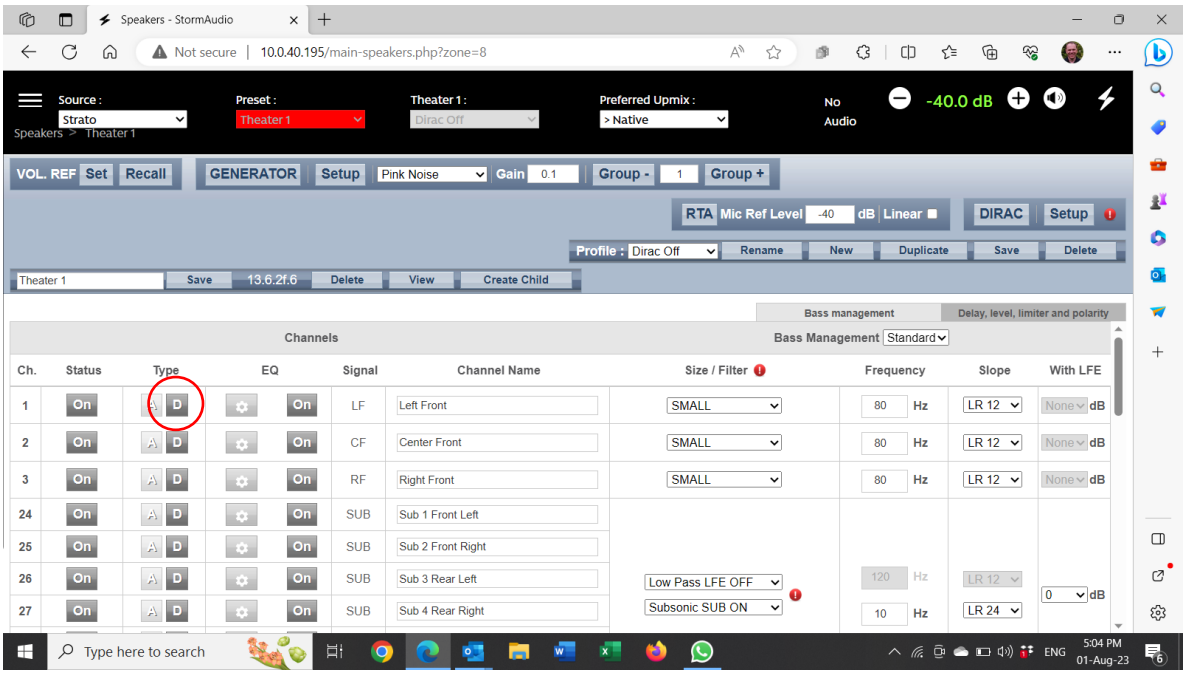
- Go into the Storm Audio WebUI. Navigate to “Main Speakers” Page.



- Click on the “Edit Theatre” symbol.



- In the “Type” column, set all channels to **D** (Digital) output and save the settings.



NOTE that after switching the output to Digital, the Analogue outputs are still active, but at a highly reduced signal quality.

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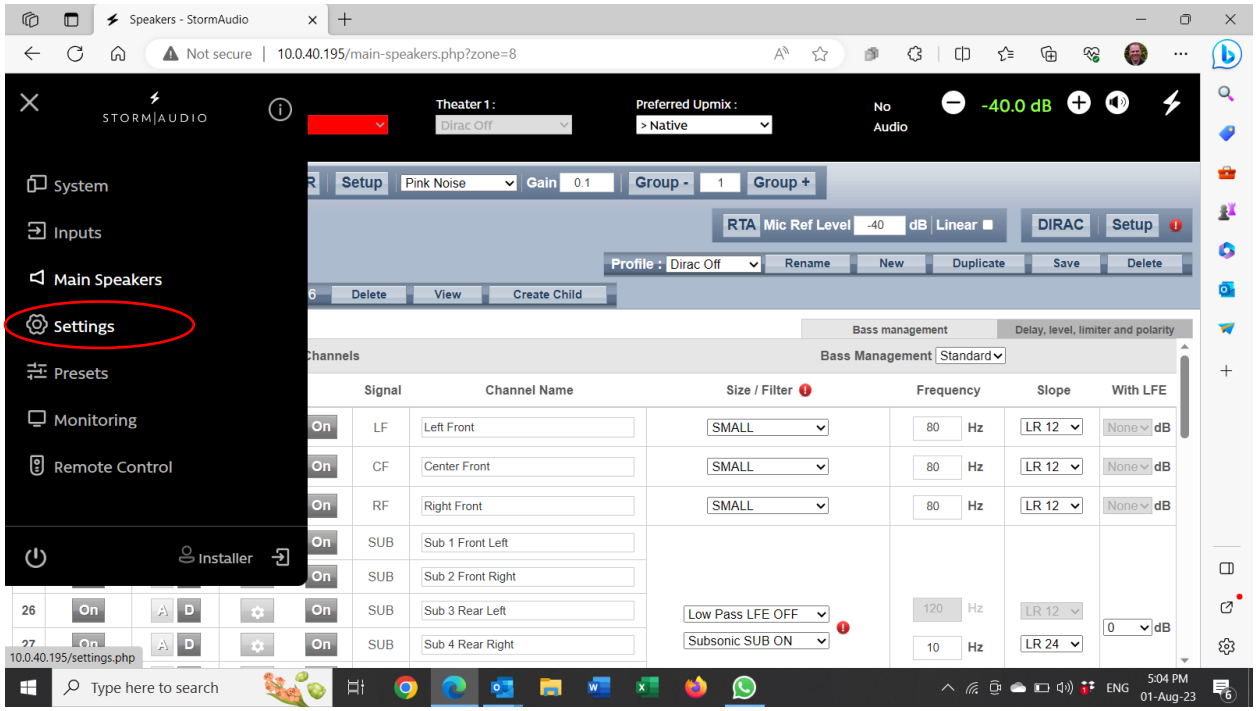
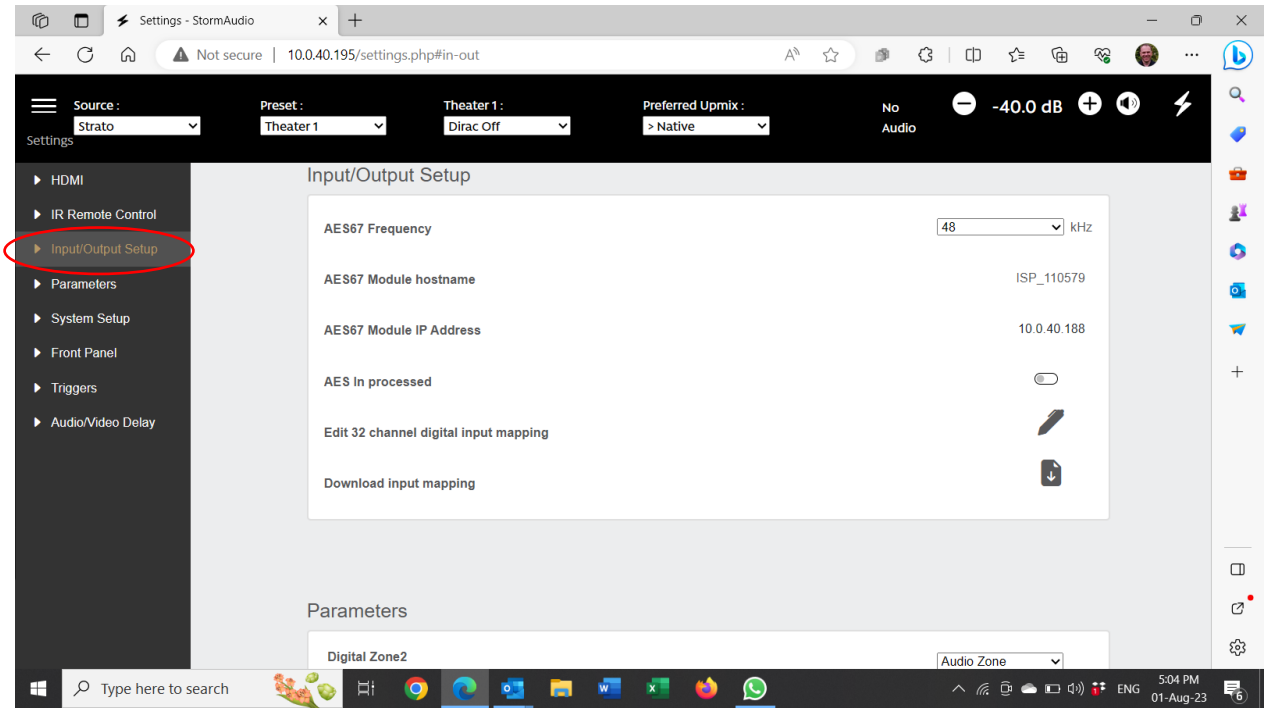
Create an AES67/DANTE destination.

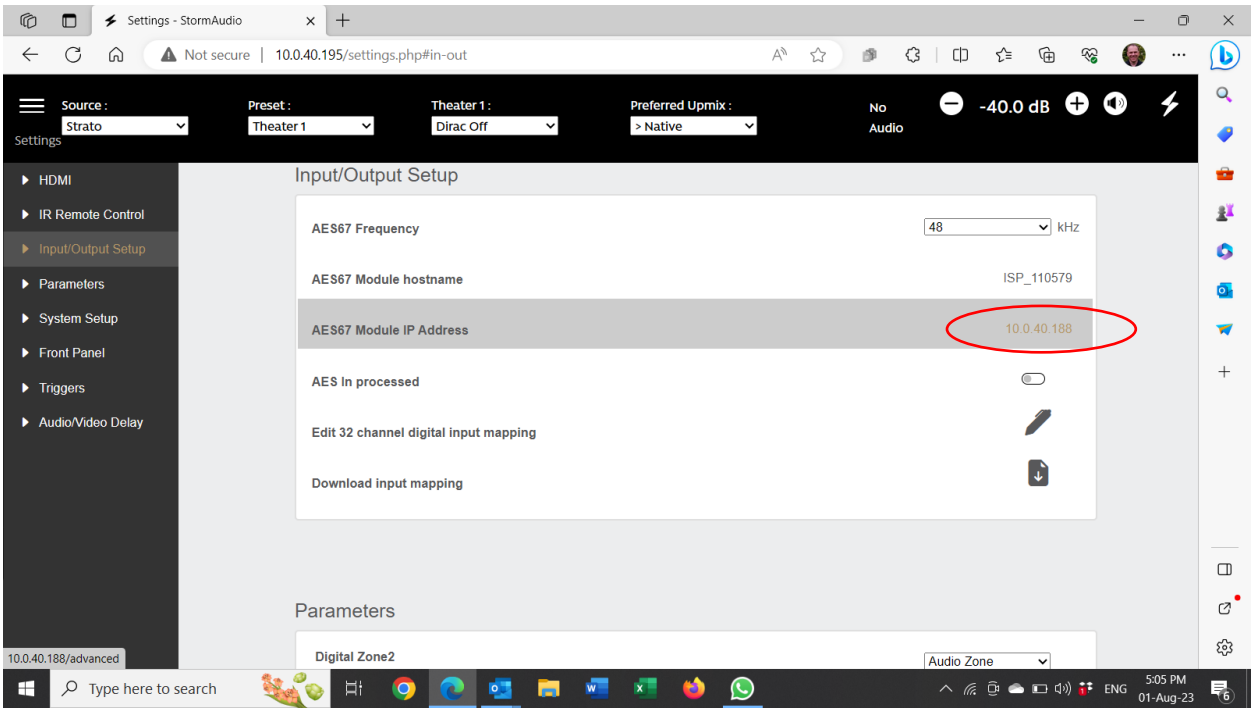
- In the Strom Audio WebUI, select the “settings” tab.



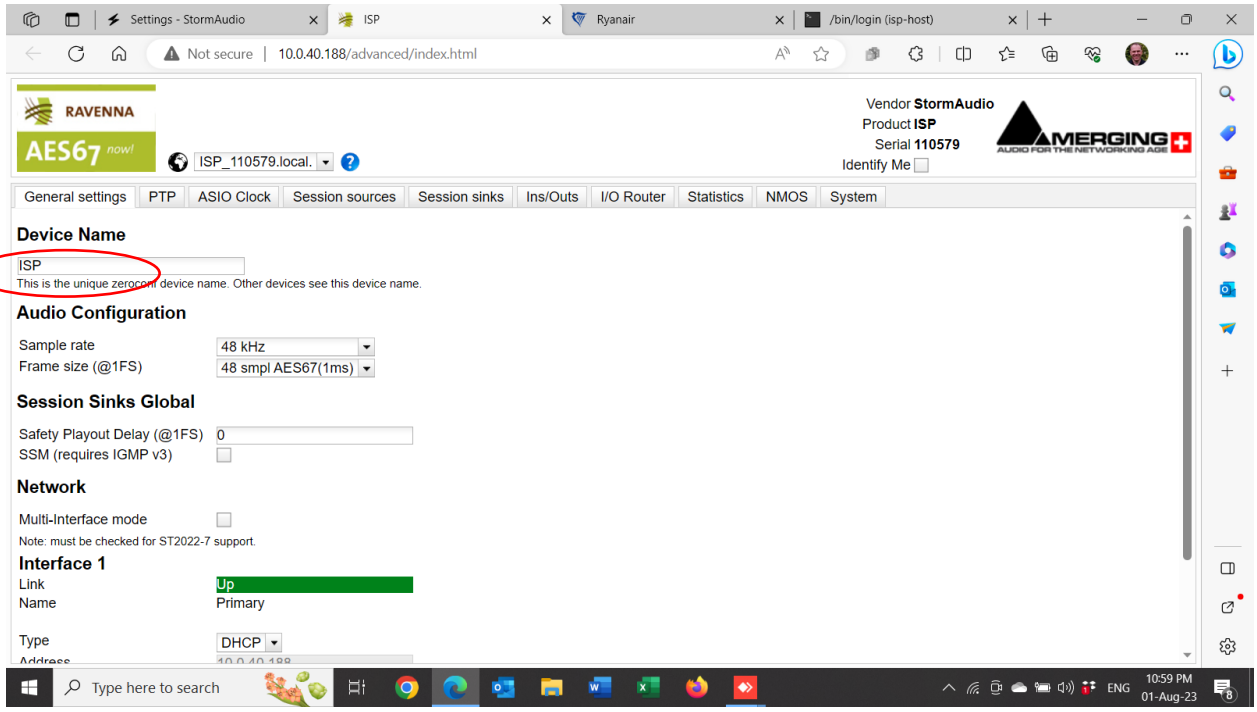
- Select “Input/Output Setup”



- Click on the AES67 Module IP Address and this will open a link to the Ravenna WebUI

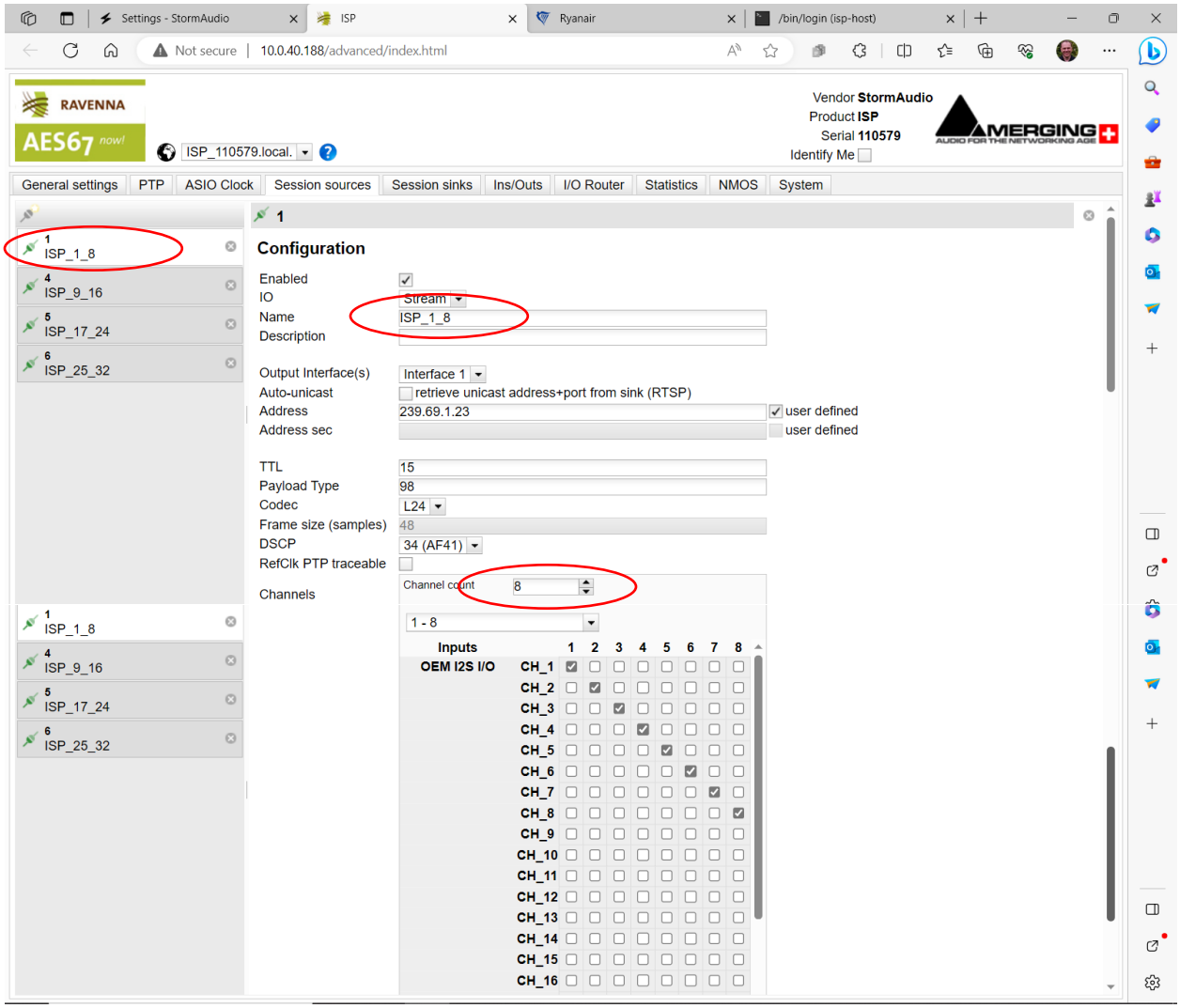


- Set the Strom AoIP Device name to ISP so that it is easy to identify.



- In the “session sources” tab, rename each Stream. e.g. ISP_1_8 then the next one ISP_9_16 etc. They are in banks of 8 streams (Channels). Underscores _ must be used when naming as Hyphens - are not accepted.
- Make sure the multicast address ("Address" field) is using the Dante multicast prefix. Default is 239.69.xxx.xx. Each bank address must be unique. E.g. ISP_1_8 is set to 239.69.1.23 and then ISP_9_16 is set to 239.69.1.24…and so on.
- Set the Channel count to 8 and select the channels you need to stream as below.

NOTE: Codec must be L24 and Frame size 48 samples



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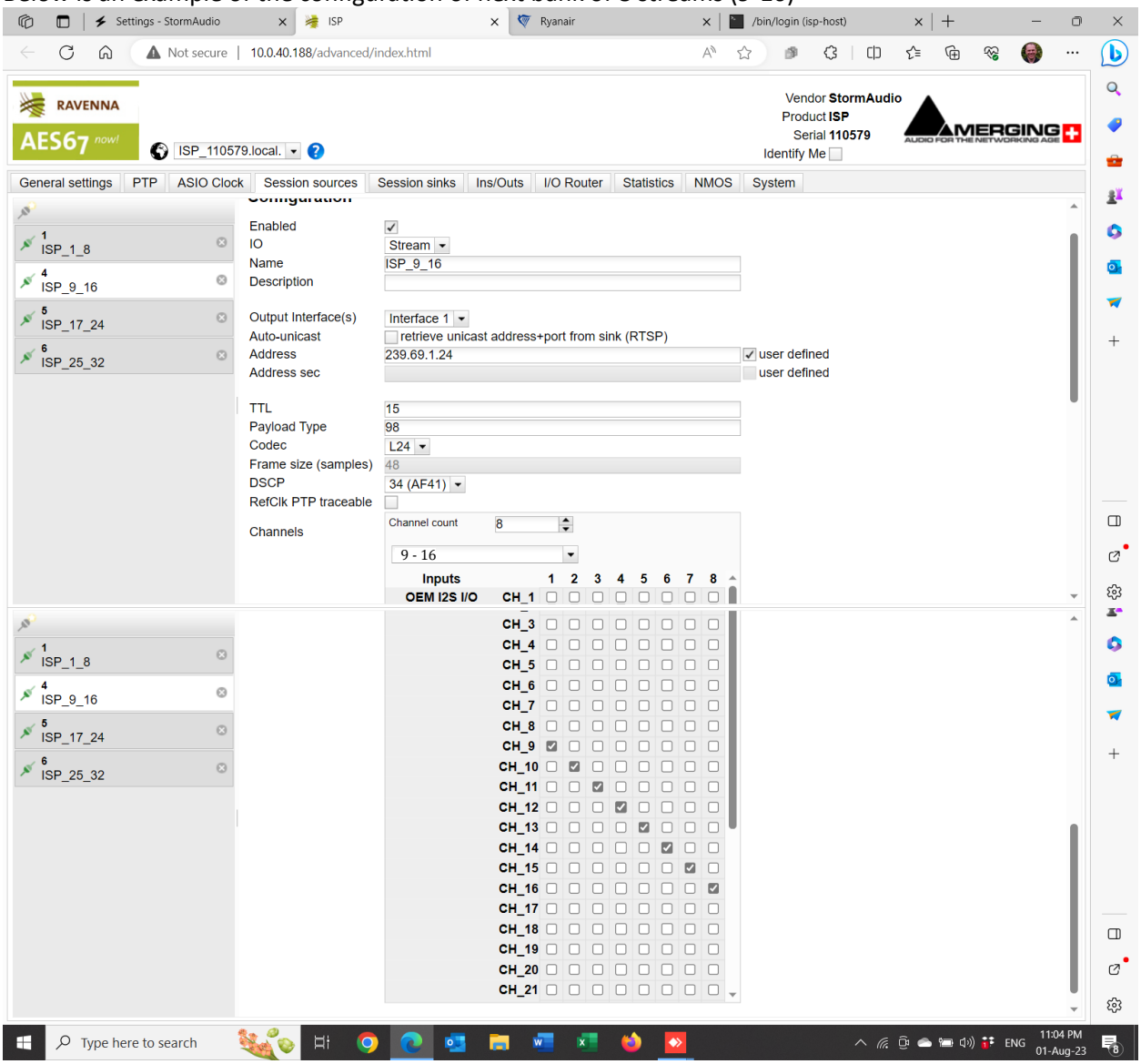
Below is an example of the configuration of next bank of 8 streams (9-16)



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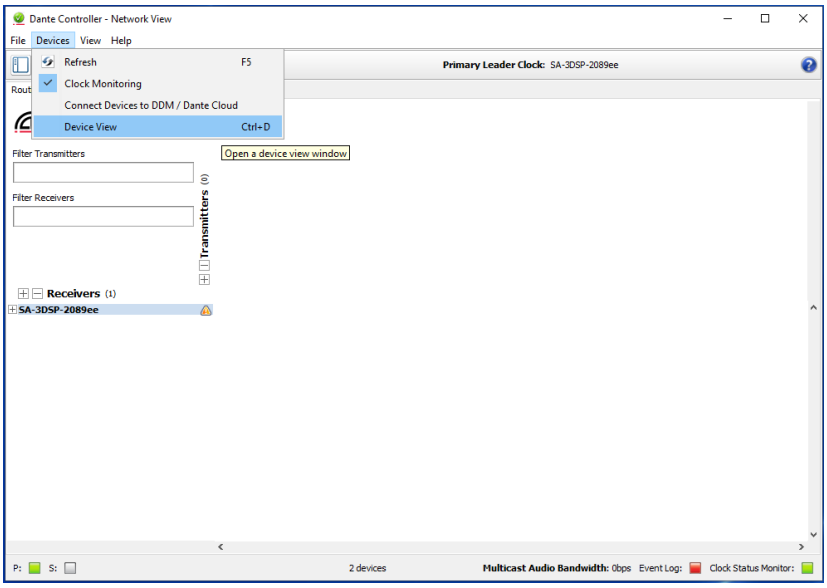
Dante Controller - Configuration

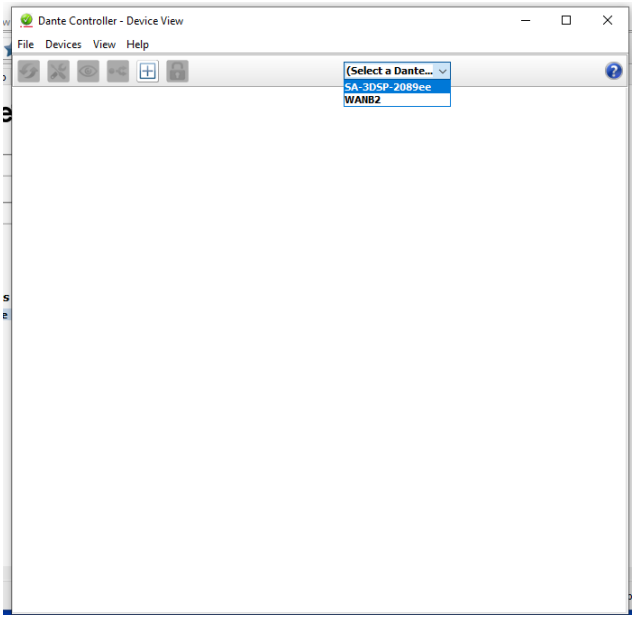
Our SA-X DSP Amplifiers require that you enable their AES67 mode using Dante Controller. The DANTE network connection of each amplifier and the computer running Dante Controller from www.Audinate.com.

Begin with only the first amplifier powered on. This will make it easier to identify and name the amplifiers in Dante Controller. Add each amplifier one at a time as each is configured. Keeping notes about which amplifier and which speakers are connected to which stream on the Storm ISP is good practice.

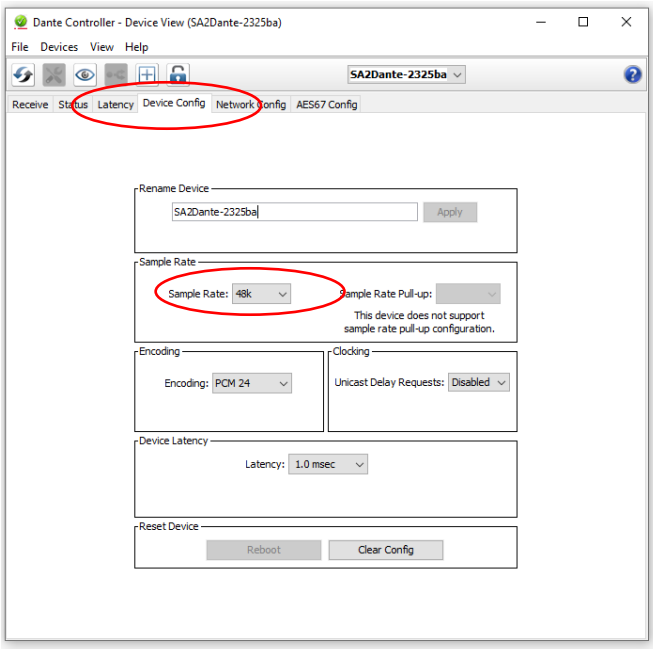
To enable AES67 mode in Dante Controller:

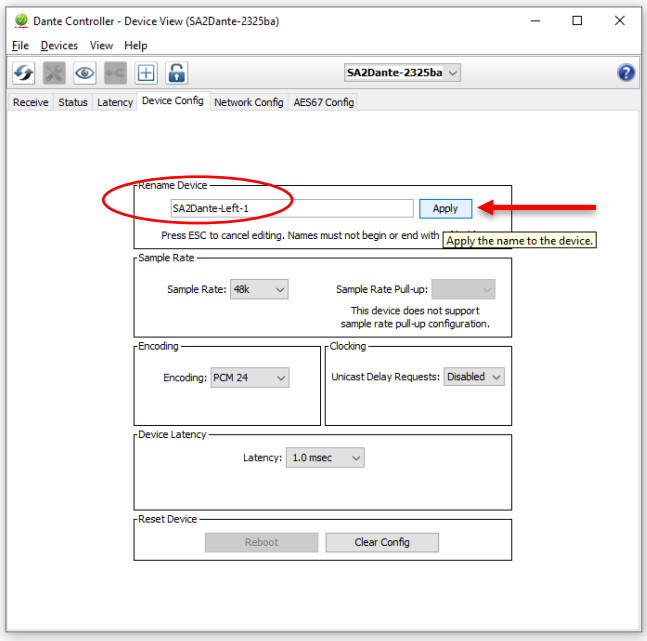
- Open Dante Controller software application.
- Go in the Devices > Device View page. Select the first Dante device (SA-x amplifier). As more devices are added the list will grow.





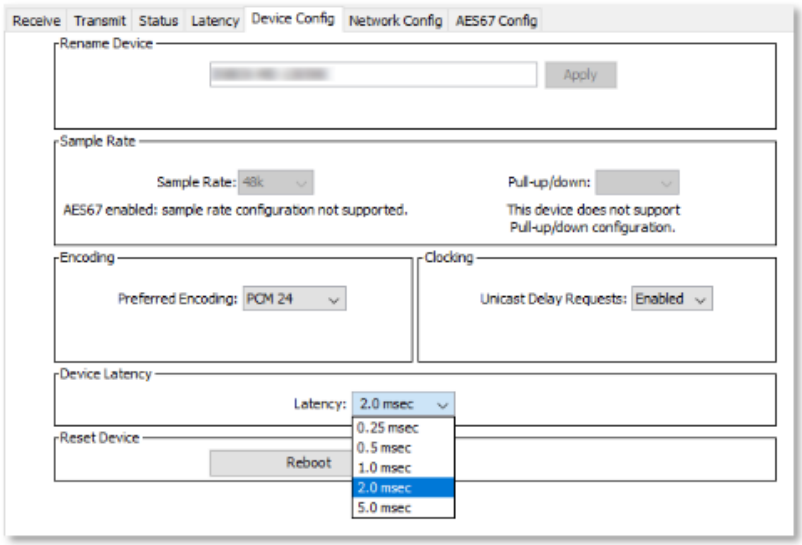
- Go to the “Device Config” tab.
- We recommend naming the amplifier now so that it is easy to identify. The list is sorted alphabetically so naming it in a way that makes it easy to find is also helpful. Renaming is not required but is helpful. Check that the Sample Rate is set to 48k (default).



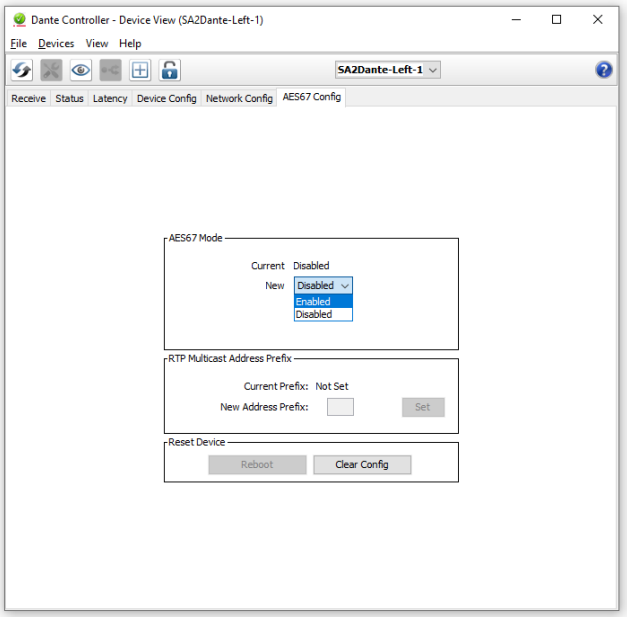


- Set the Latency to 2 ms.

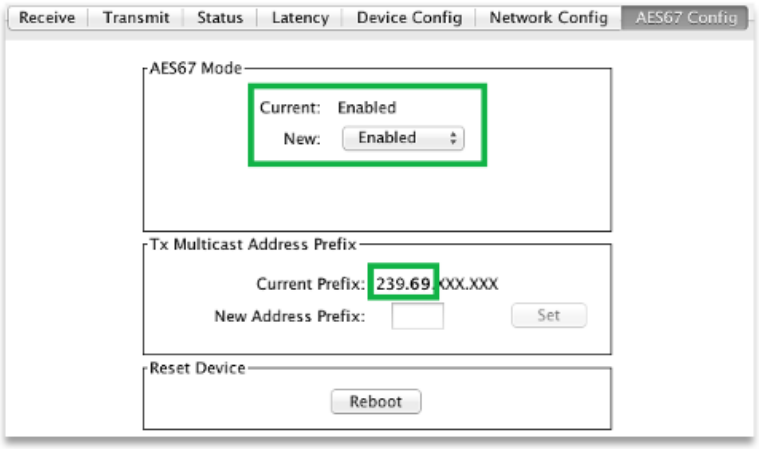
Note that Storm Audio recommends for large multiple channel theatres, the latency should be set to 5ms. We did not find this necessary in our Theatre and used 2ms with no issues.



- Go in the AES67 Config tab.
- Set the AES67 mode to Enabled.



- Make sure the Multicast Address Prefix is set to 239.**IP**.xxx.xxx. "**IP**" must be the same for all devices on the AoIP network, default is 69.

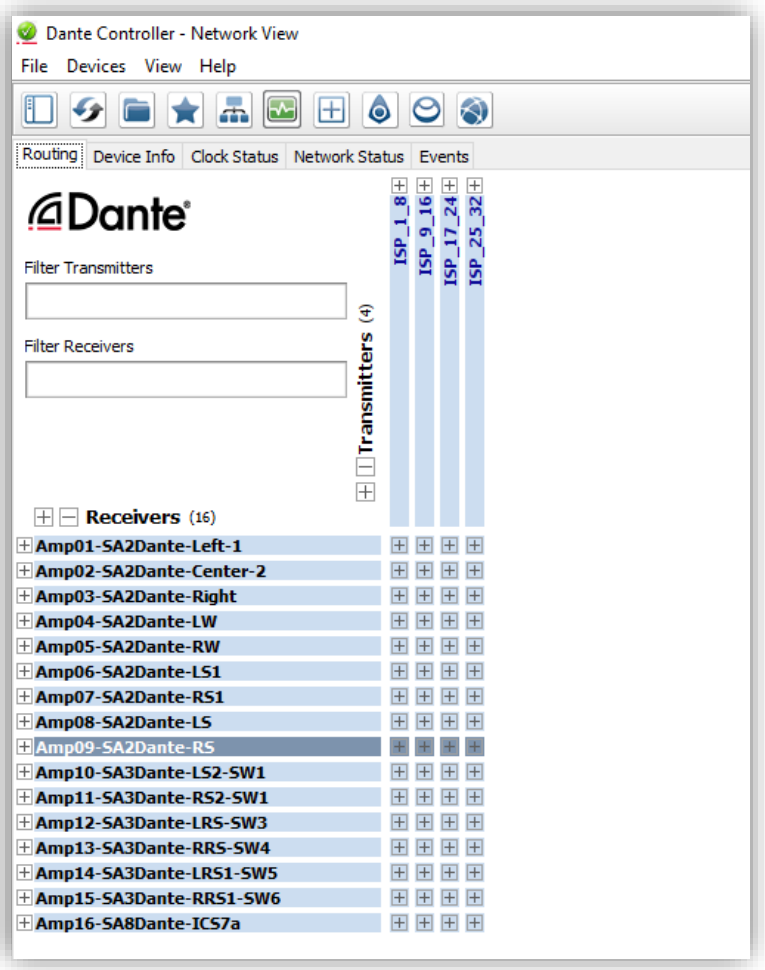


Repeat the above steps for each Wisdom amplifier in the system. Turn on one amplifier at a time and name them as you work to keep the setup easy to complete.

Below is a screenshot of our theatre system with the AES67 setup done and custom names entered. The Storm ISP can be seen as a transmitter, with 32 total channels (8x4).

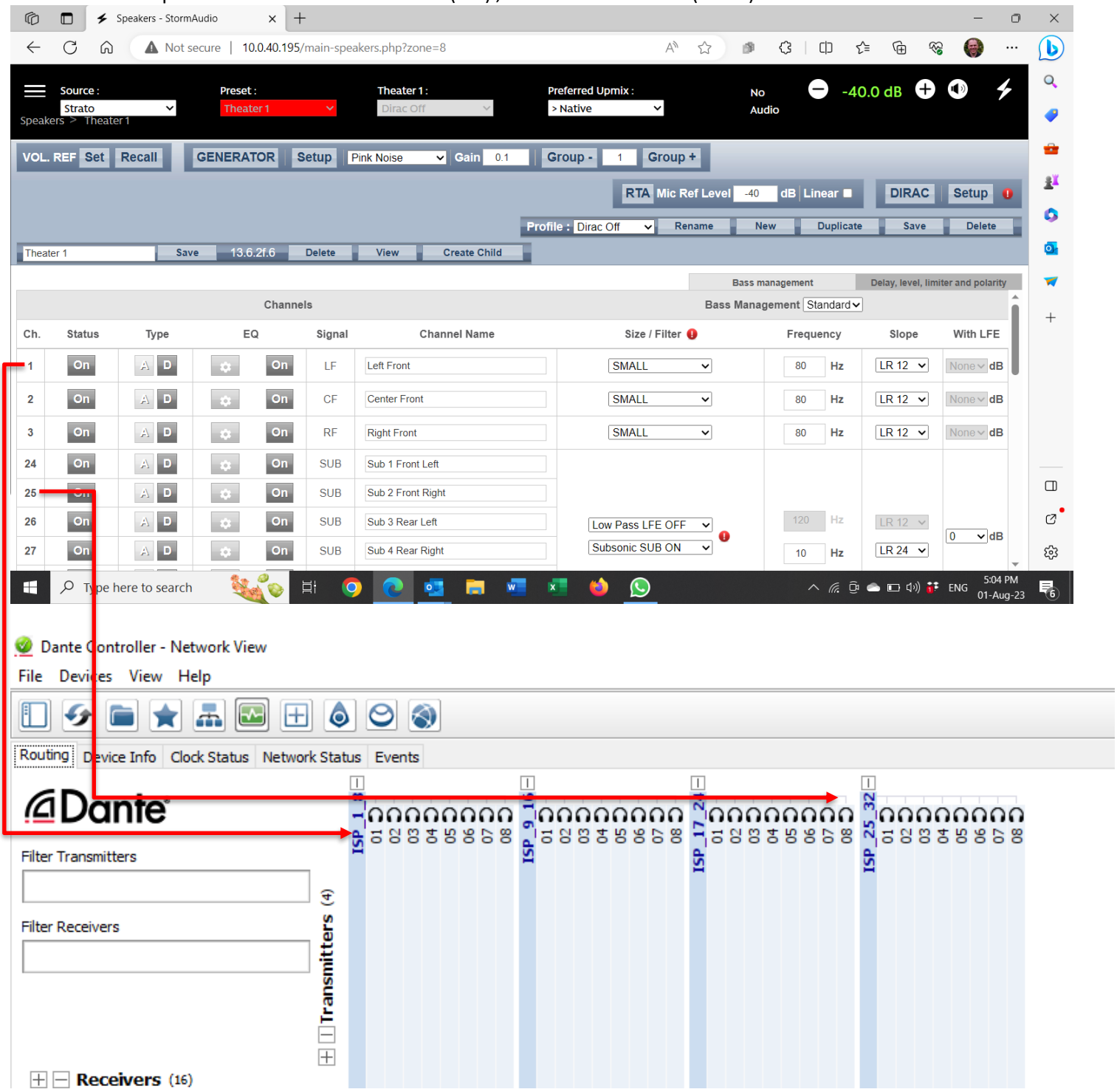
- In the below example the name has the physical order in the rack, plus a description of the speakers to be connected.
- Individual channels can also be named if needed.
- Next we will make the connections from Storm to Wisdom.

DO NOT CHANGE THE DEVICE NAMES ONCE YOU HAVE COMPLETED THE SETUP IN THE NEXT SECTION OR AUDIO WILL NOT CONNECT. DANTE USES NAMES TO MAKE CONNECTIONS, AND NOT IP ADDRESS.



- Click the + to expand the Transmitter and the Receivers.

- The “Stream” in the Storm will be the Dante “Channel”. The below shows the Storm ISP setup. Streams are in groups of 8 channels
- For example: Ch1 in the Storm is Stream 1(1-8) , and Ch25 is Stream 1(25-32)



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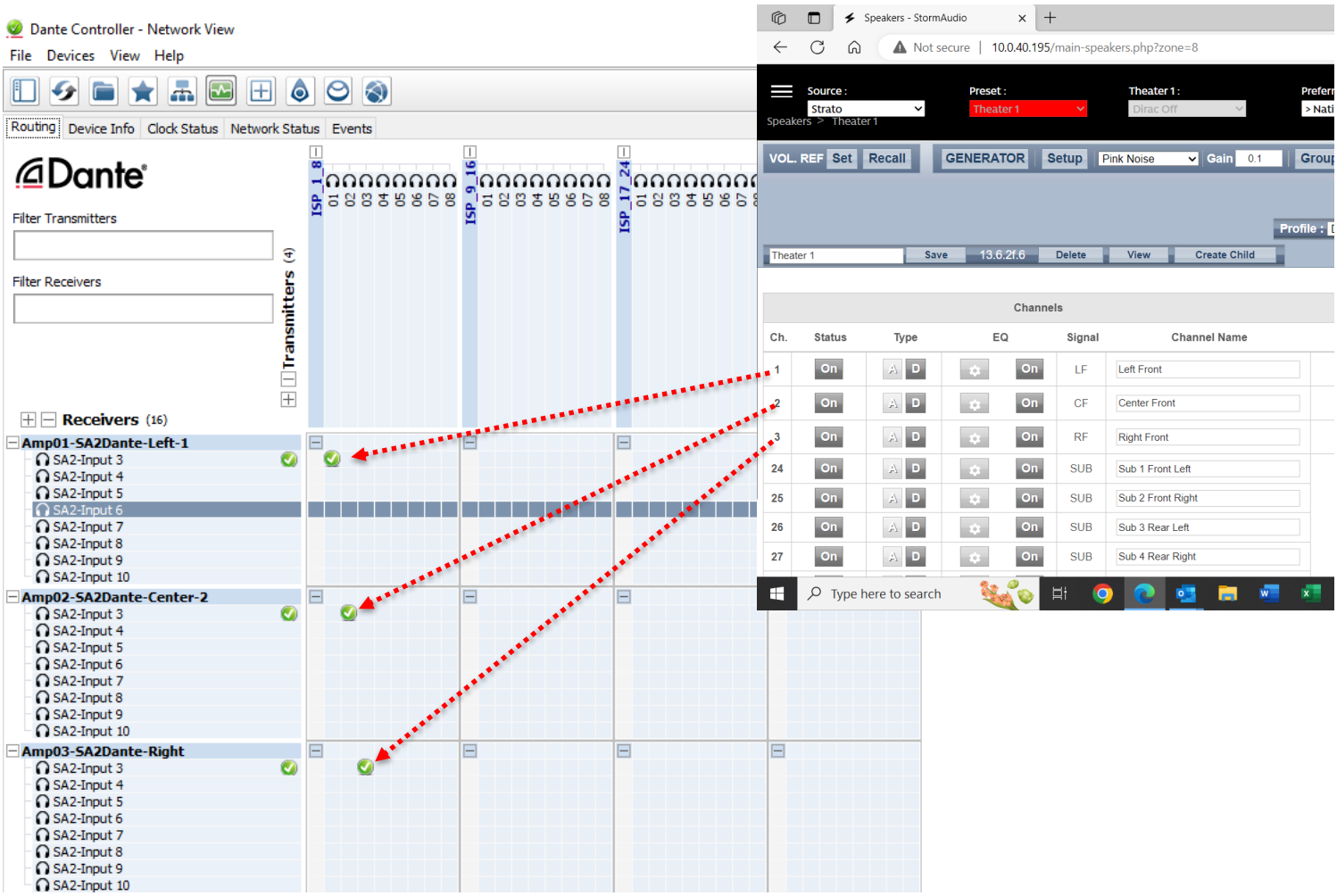
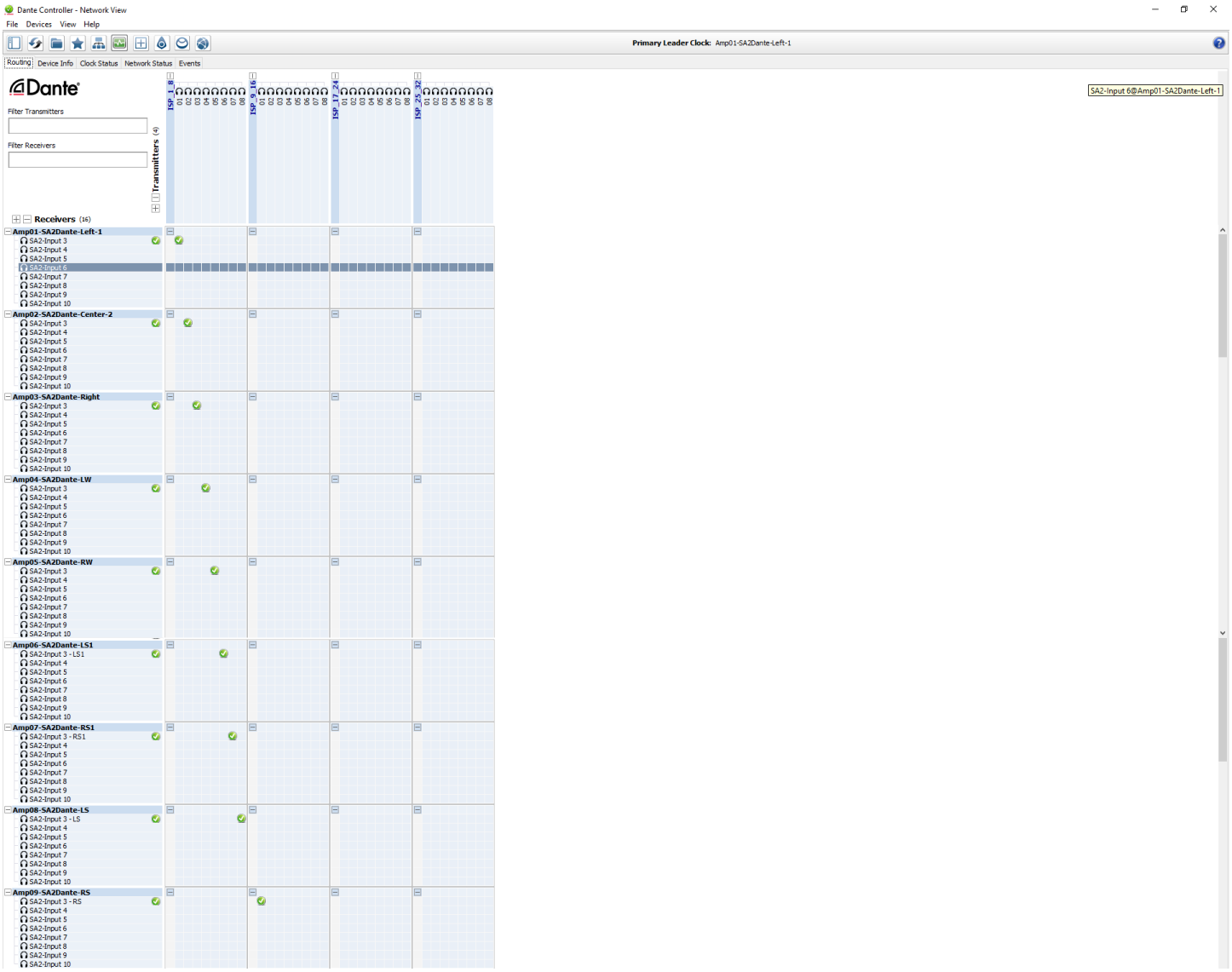
Connect the Storm ISP Streams to the Wisdom Amplifier. Keep track of which Dante input is used on the Wisdom amplifier so you can select the correct input in the amplifier setup. Tick the checkbox in the grid to make the connection. Once connected the green checkmark shows that audio is flowing and the connection is valid.



Below is our completed system with all channels connected and all streams valid.

If you have connected the AoIP (Dante/AES67) network to the home network (Internet traffic), you can now disconnect it or set up the VLAN. Having both Internet and AoIP on the same network can cause high latency and audio dropouts or problems with Internet connectivity. AoIP does not need Internet access or any control once it is configured. All settings are stored locally and each device will make the connections independently from the other devices.



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Using the Wisdom amplifier GUI, select the Dante input as needed. In the below example this is the setup for the SA-8DSP that is connected to the Atmos overhead channels. The default names of the Dante channels in the Dante Controller match the default names in the Wisdom user setup page.