



RADIUS™ RSX Series QUICK START GUIDE





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Section 1 – Introduction

Congratulations on the purchase of an EAW Radius loudspeaker. With proper operation and care this EAW product will provide many years of service and reliability.

This guide is intended to get you up and running with your Radius system as quickly as possible. It will detail the process from start to finish, from receiving your Radius loudspeakers to the first downbeat of the gig.

Suggested Hardware for Wireless Control and Dante

Wi-Fi Router

EAWmosaic, the control and prediction software for Radius, connects to Radius via a user-provided Wi-Fi router. The router must provide both wired and wireless connectivity, and it is recommended that it also includes a DHCP server to simplify IP address assignment. Most standard Wi-Fi routers will work well with Radius including Apple Extreme, and the Monoprice AC1200, as two examples.

Network Switch

Many applications benefit from the use of a network switch. Most managed Ethernet switches are compatible with Dante and should not present any issues. We recommend that users verify their switch specifications with Audinate's documentation to ensure compatibility (Audinate's list of 'blacklisted' switches can be viewed [here](#), and a FAQ of using switches with Dante can be found [here](#)). While most switches are compatible with Dante, one recommended model is the Cisco SG300.

- We recommend only using Gigabit switches with your Radius system.
- Energy Efficient Ethernet (EEE) should always be disabled, and it's important to note that most unmanaged switches now include this feature without the option to disable it. If using a managed switch that offers this feature be sure to confirm it is disabled. EEE can interfere with Dante traffic and manifest itself through audio glitches, muting, and artifacts.

Cabling

Each Radius module requires power provided via the included Powercon cable. Analog signal is delivered with standard cabling and XLR connections. Dante signal and network control requires CAT5e or CAT6 cabling with RJ45 or Ethercon connections at the loudspeakers.

Computer and Dante Controller

A computer running the Audinate software Dante Controller (download for free [here](#)) is required to distribute Dante audio to your system. It's also helpful for monitoring and configuring your network, as well as troubleshooting if any problems occur. Once Dante routing has been assigned the computer is no longer required.

Workflow

Below is a chart outlining the recommended workflow when using your Radius system. Some of these steps should be performed in the shop before the gig, others onsite.

Step	Action – In the Shop
1	Power up modules, run Output Check
2	Confirm firmware is up to date using EAWmosaic
3	Give each module a ‘friendly’ name in Dante Controller (optional), assign Dante I/O at source, and make Dante subscriptions using Dante Controller*
4	Model the venue in EAWmosaic, and determine the optimal array configuration for the application.

**only required if driving system with Dante, can also be done onsite if necessary*

Step	Action – Onsite
1	Physically configure arrays as recommended by EAWmosaic
2	Cable all modules in the system and setup network hardware*
3	If not already completed, configure Dante I/O at source, and make Dante subscriptions using Dante Controller*
4	Use EAWmosaic to go online with your system, and assign components to groups.*
5	Run Optilogic, select voicing, and any other system adjustments
6	Press the ‘Show Mode’ button, do the show

**not required if network control and/or Dante audio aren't used.*

Section 2 – Unboxing Your Radius System

Inventory

When you receive your Radius loudspeakers please make sure that each of the following items is included. Each Radius loudspeaker should ship with:

- Radius loudspeaker
- Powercon to Edison power cord
- Powercon jumper cable (RSX208L and RSX12 only)
- Ethercon jumper cable (RSX208L and RSX12 only)
- Safety information sheet

Output Check

Also upon initial receipt of your loudspeakers we suggest a quick test to confirm they are functioning as expected. Connect each loudspeaker to a power source, then use the navigation screen to access the ‘Output Check’ feature. On the rear panel of your Radius unit:

- Press or rotate navigation wheel to open the rear panel main menu

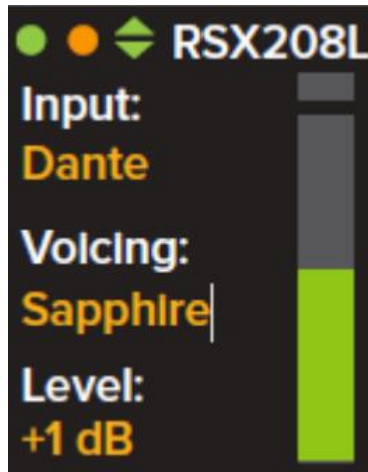


Figure 1 - Rear Panel Home Screen

- Scroll down to 'Output Check' and press the navigation wheel

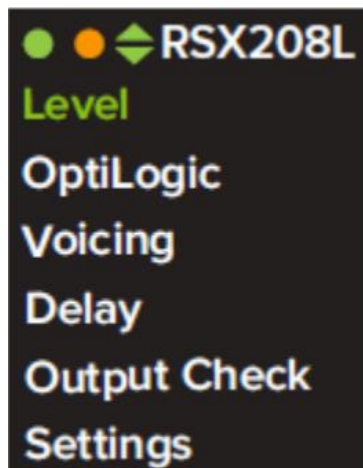


Figure 2 - Rear Panel Main Menu

- Select 'Auto', and press the navigation wheel again to select 'start'

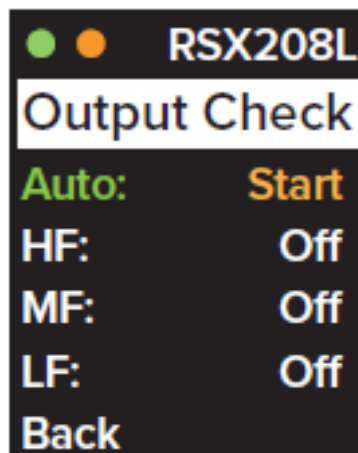


Figure 3 - Rear Panel Output Check Menu

You should hear pink noise generated from each pass-band of the loudspeaker, and confirm that the loudspeaker is functioning properly.

Operation Modes

Radius loudspeakers offer many advanced features that are designed to make it as simple as possible to deliver excellent audio performance. Dante compatibility, wireless network control, and redundant analog backups are just a few of the features that work towards that goal. While we encourage users to take advantage of these, it isn't required. There are four general operation 'modes' available to the user:

1. Analog input, no network (use rear panel for setup)
 - In this configuration a Radius system can be operated as a typical 'dumb' loudspeaker system. No network cabling is required, analog audio is delivered via XLR connections, and any changes to DSP settings, Optilogic, or voicings is accomplished via the rear panels of the loudspeakers.
2. Analog input, network for control
 - This configuration still uses an analog audio signal for input but the system is now setup on a network. Network cabling is used to connect the loudspeakers to a Wi-Fi router. This mode allows the user to configure and monitor the system using EAWmosaic software.
3. Analog backup, network for control and Dante audio
 - This is the same configuration as above, but now a Dante source is transmitting Dante audio to the system. Radius loudspeakers will default to a Dante input if detected, and automatically revert to its analog input in the event that a Dante signal is no longer detected.
4. No analog backup, Dante for control and audio
 - In this configuration no analog signal is used, and network cabling provides both control and Dante audio.

Section 3 – Setting up your Radius network

While a network is not required to operate a Radius system, it is required for network control and/or Dante audio. Some general network suggestions are outlined below, as well as diagrams of sample networks for Dante and control, and control only. CAT5e or CAT6 cabling is used to transmit Dante audio, control signals, and connect Radius loudspeakers to the network. Daisy chain, star, or a mixture of these two topologies are valid (the two networks illustrated below use a mixture).

Dante and Control Network

We'll first look at a network that supports both control and Dante, as illustrated in Figure 4.

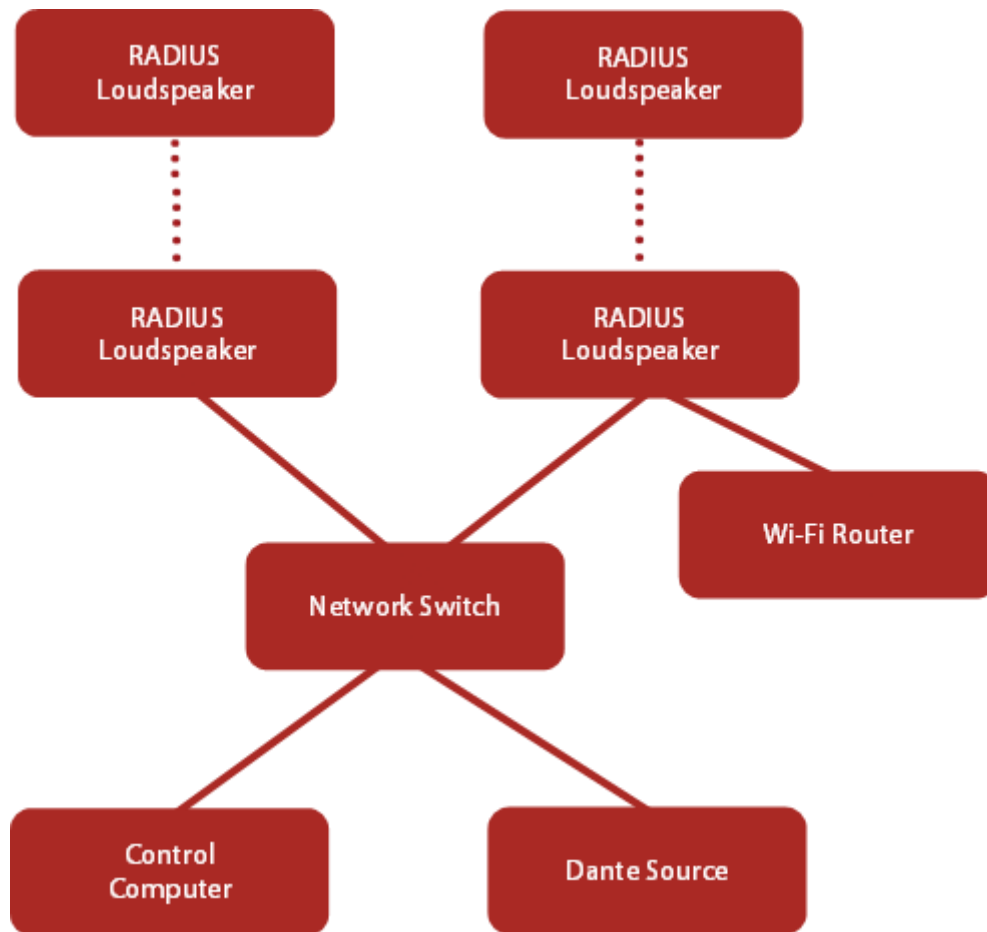


Figure 4 - Diagram of a sample Dante network

Figure 4 illustrates an example of a typical Dante network with Radius loudspeakers, though other configurations are also viable. Individual Radius modules, or groups of modules daisy-chained together via network cable, have 'home runs' back to a network switch. Additional network switches could be included for convenience (for example, a switch at FOH and another near the stage). The Wi-Fi router is connected to the COMM port on any Radius cabinet.

NOTE: If multicast Dante flows are being transmitted across the network the Wi-Fi router must be connected to the COMM port of a Radius cabinet to ensure control communication isn't disrupted. Do not connect the router to a switch or a Dante port on a Radius cabinet. However, if Dante is being transmitted via unicast flows, which is the default, the Wi-Fi router can be connected to a network switch without issue. Some switches include a feature called IGMP snooping, which allows the user to manage which devices receive multicast flows, and can be configured to allow the router to be connected to a network switch that is transmitting multicast traffic. However, this is an advanced feature beyond the scope of this guide to explain, so we simply recommend transmitting unicast flows only, or connecting the router to a cabinet's COMM port if multicast is used.

Control Network Only

Figure 5 illustrates a sample network for control only, without Dante audio. Similar to the example above of a Dante network, individual Radius modules, or groups of modules daisy-chained together, have 'home runs' to a Wi-Fi router. Care must be taken to not form a network loop, where any loudspeaker, or group of daisy chained loudspeakers, is connected twice to a switch or router. More detail on this is below in 'Network Guidelines for Radius'.

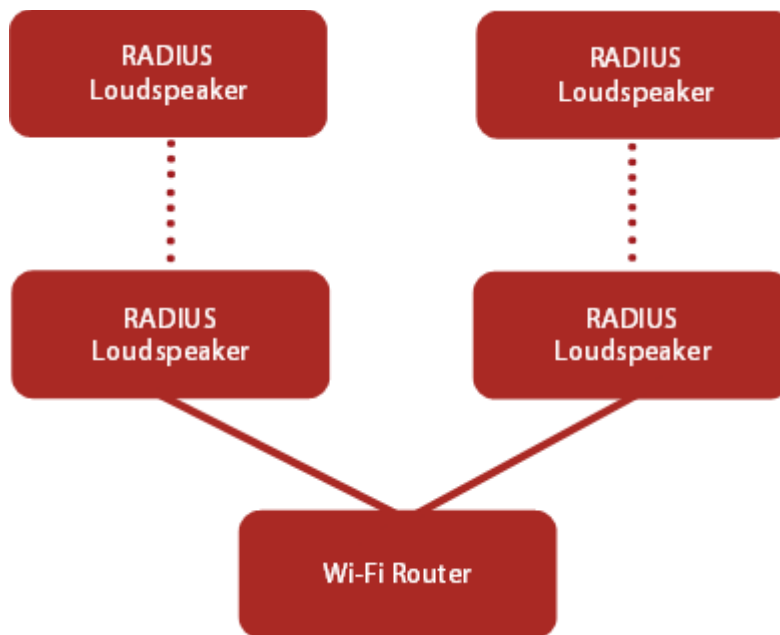


Figure 5 - Diagram of a sample control network

Network Guidelines for Radius

Below are a few general comments regarding networks and Radius systems:

- Up to 10 loudspeakers can be 'daisy-chained' together using a network cable to connect to a Dante port on each loudspeaker. This group of loudspeakers will be connected to the network via a single loudspeaker in the chain that is connected to the network switch or Wi-Fi router.
- Network loops are caused when more than one loudspeaker in a chain are connected to the network switch or router. This will cause a series of network issues that can negatively affect communication and audio quality, and should always be avoided. Figure 6 illustrates a network loop.

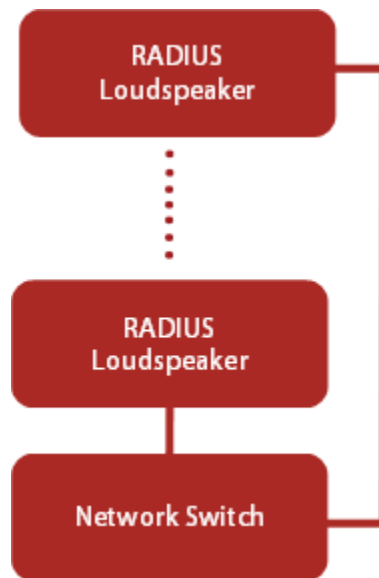


Figure 6 - Diagram of a network loop. **Don't do this.**

- The Dante ports on Radius loudspeakers are bidirectional, either can be used to connect with other devices.
- The COMM port on the rear of Radius loudspeakers is identical to the Dante ports, but multicast Dante traffic is filtered out. The Wi-Fi router can be connected to this port to allow for wireless control using EAWmosaic.
- If network troubleshooting is needed, purchasing a [Lighting to USB3 camera adapter](#) and an Apple [USB to Ethernet adapter](#) can be very helpful. These tools allow for a wired connection to the network, eliminating the wireless variable, and help to track down the source of any issues.
- Most Wi-Fi routers include a DHCP server which will automatically assign IP addresses to all the devices on the network (this feature can be disabled on most routers if desired). In the absence of a DHCP server each Radius loudspeaker will 'self-assign' itself a unique IP address. **Either way, the loudspeakers will be automatically assigned an appropriate IP address and the end result for the user will be the same; the important part is that all network nodes are on the same subnet.** If a DHCP server is introduced to the network after a loudspeaker has assigned itself an IP address it will assign new IP addresses to the loudspeakers. In the event of an IP address conflict, or if network issues arise after introducing the DHCP server to a system that has already self-assigned IP addresses, simply power cycle the loudspeakers and they will accept new IP address from the DHCP server.

Section 4 – Updating Firmware

Upon receiving your Radius loudspeakers it is important to confirm that they are running the latest firmware. To do this you will need to download the latest version of the EAWmosaic software (available from the app store), which will include the most up to date firmware for your loudspeakers. Since new updates, improvements, and features are being continually added via software and firmware it is possible that newly purchased loudspeakers will need to be updated before use. Firmware updates are delivered via EAWmosaic software so a network connection is required to update firmware for Radius loudspeakers.

NOTE: It is strongly recommended you disable automatic downloads for apps on your iPad. If EAWmosaic automatically updates it could be incompatible with the firmware loaded on your Radius loudspeakers, requiring you to update your loudspeaker's firmware before use. You don't want this to happen shortly before a gig.

Firmware Update Process

Once the network is running, to update your loudspeaker's firmware:

- Set up your Radius network as described above.
- Download the latest version of EAWmosaic from the app store to your iPad or Apple device
- Connect your iPad to the Radius wireless network

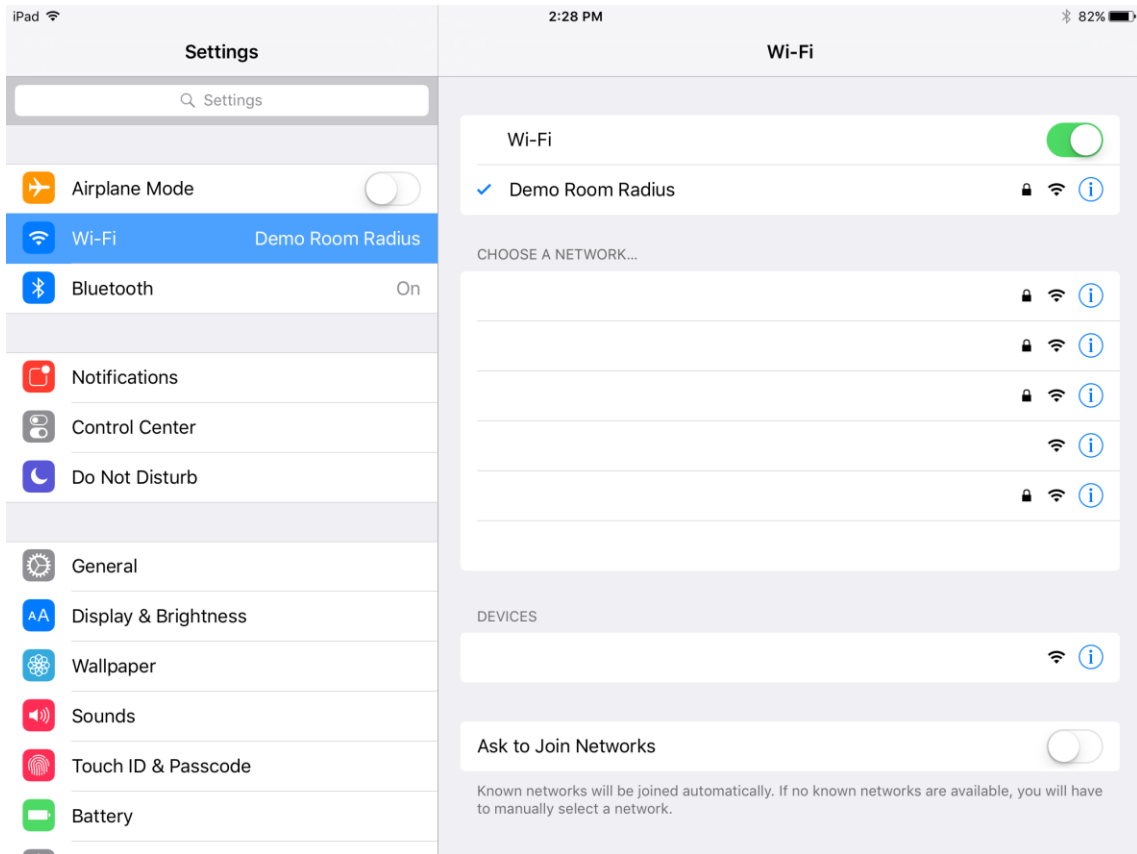


Figure 7 - iPad WiFi connection screen

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- Open EAWmosaic and create a new system, or load an existing system if you have one saved.

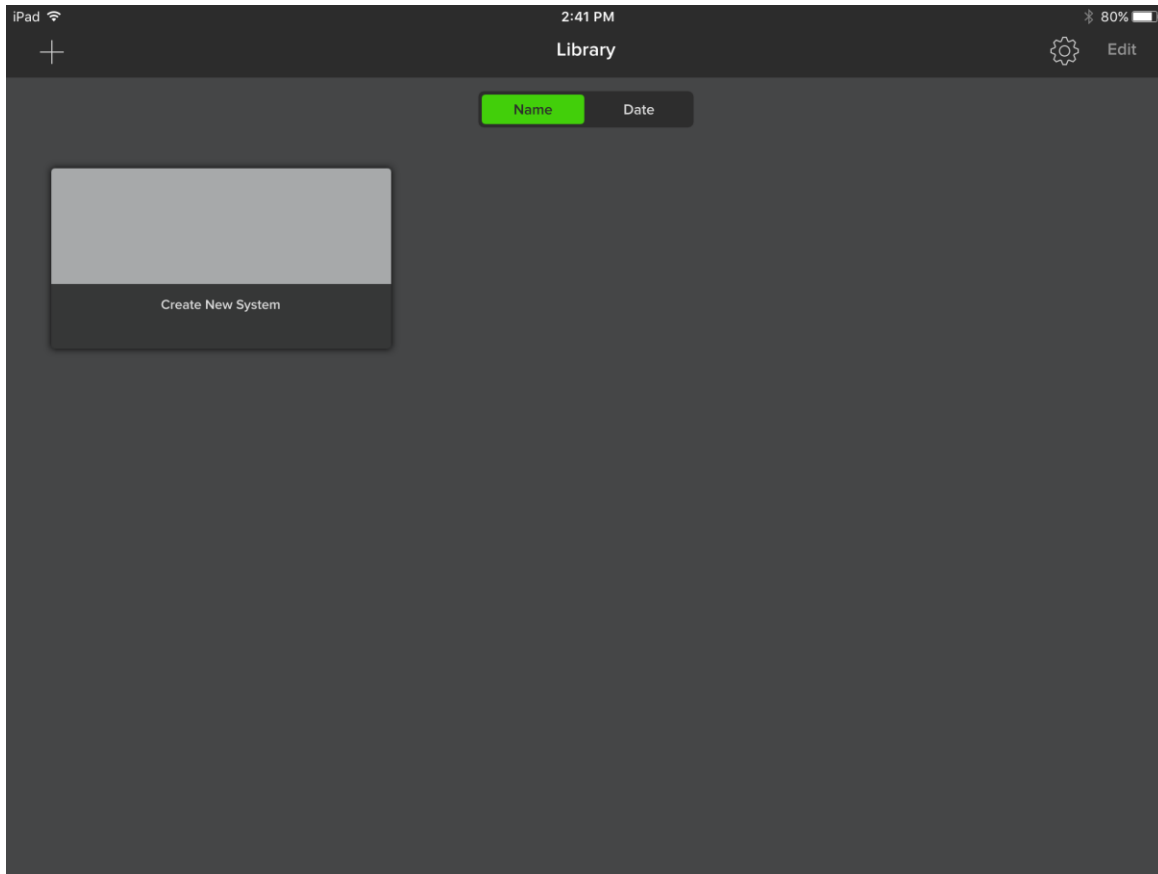


Figure 8 - Select System from Library

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- Select your template for your system and your venue. This can be a factory provided template or a system saved by the user. Since we're only concerned with a firmware update now, and won't be using the prediction aspect of the software it doesn't matter what venue template is chosen.

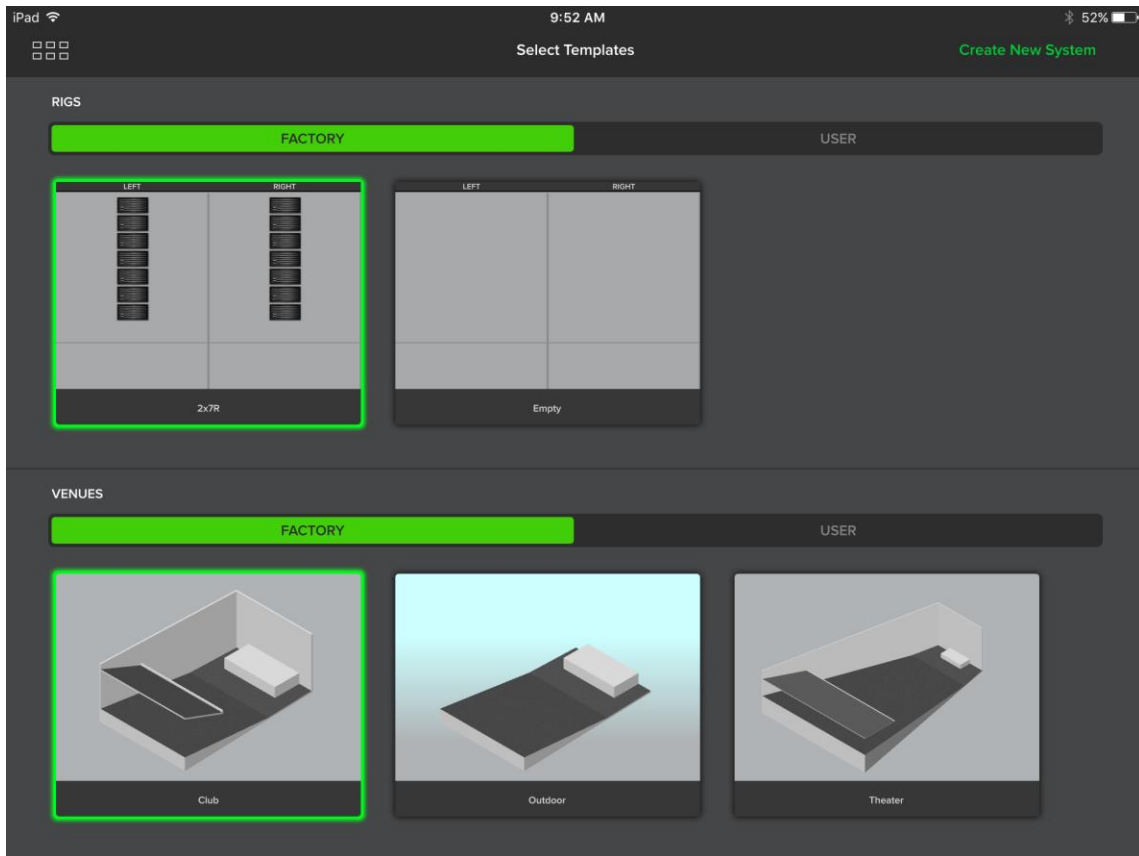


Figure 9 - Select Template

- The first screen seen is called 'Rig View', and this is where system control is managed. Tap the 'Speaker Shelf' icon in the top right (indicated by the red arrow in Fig 10). You will see your Radius loudspeakers appear on the left-hand side of the shelf and display an orange icon, and an amber LED will illuminate on the speakers themselves. Radius loudspeakers that are visible on the right-hand side of the shelf, without an orange icon, are 'virtual' units used for prediction purposes only.

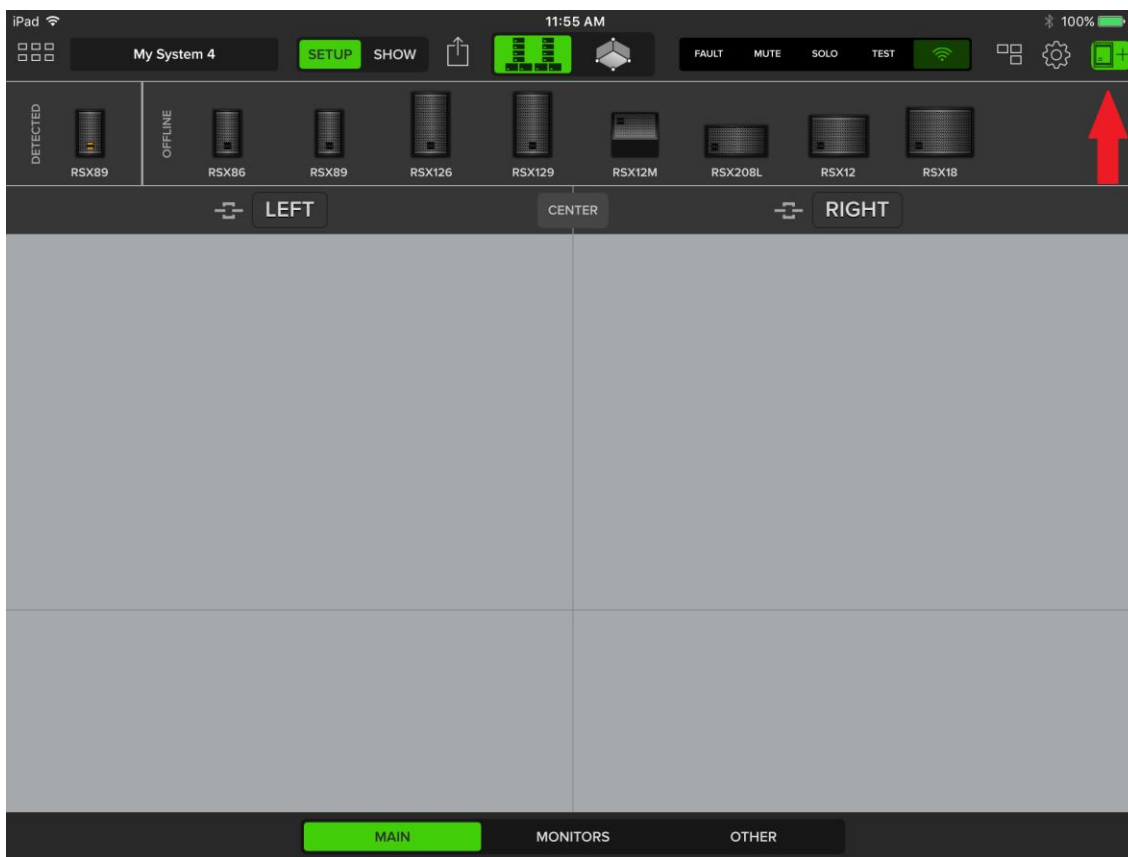


Figure 10 - The Speaker Shelf displayed in Rig View

- Tap a Radius loudspeaker with an orange icon, and you'll see the amber LED on the corresponding physical loudspeaker or array start to flash (this step isn't required for updating firmware, but will be useful when setting up your system).
- Next, tap and drag down the loudspeaker or array into a group below. When the loudspeaker is assigned into a group the amber LED on the physical loudspeaker will turn off. In EAWmosaic, the loudspeaker now in the group will display either a red, orange, or green icon. If red, that loudspeaker requires a firmware update. Tap the loudspeaker and when prompted select 'Update'. If multiple speakers require firmware updates you can check the box for 'perform for all speakers' to automatically cycle through each module that needs an update.

Do not interrupt the update process. It typically takes less than a minute per loudspeaker to update but can take longer.

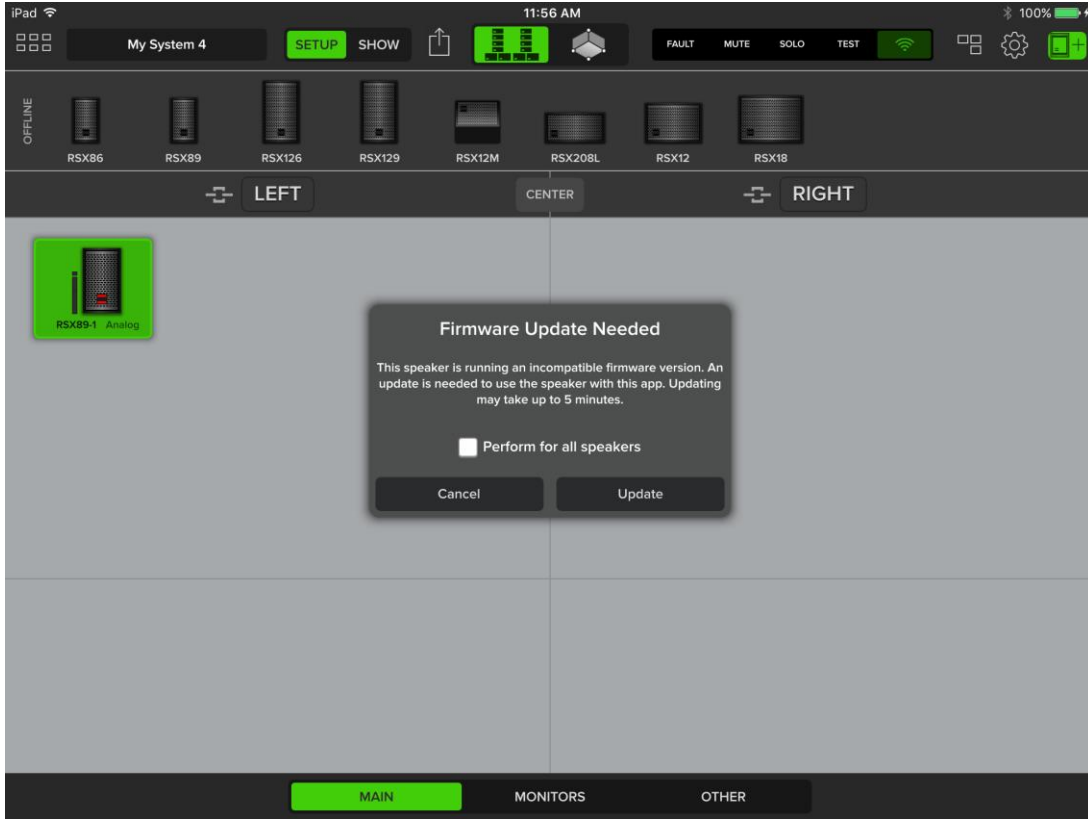


Figure 11 - Firmware Update Request

- You will be informed that the update is complete and see a green icon on the speaker in EAWmosaic.

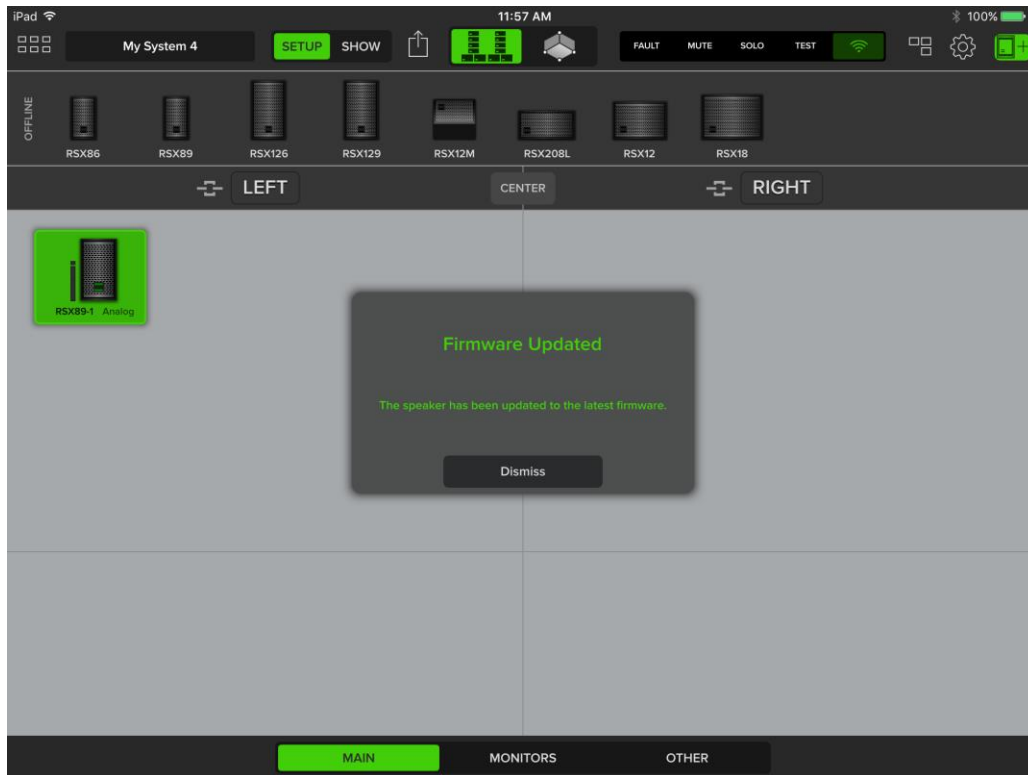


Figure 12 - Firmware Update Complete

You can view a loudspeaker's firmware version via the back-panel of the loudspeaker by selecting 'Settings' and then 'About', or in EAWmosaic by selecting a loudspeaker, selecting 'Edit', and the firmware version will be displayed in the upper-left side of the window.

Section 5 – Dante

Radius systems do not require network control or Dante audio, but they do offer advantages. It is beyond the scope of this guide to give a comprehensive overview of Dante audio and networking but we will outline the basic steps that are required to get up and running with Dante on a Radius system. Some helpful resources are available from Audinate including their [training and tutorials](#) and the [Dante Controller User Guide](#).

Giving Radius Loudspeakers a 'Friendly' Name in Dante Controller

After your network has been set up as outlined above in Section 3, the next step is to route specific Dante audio channels to your loudspeakers. [Dante Controller](#), a free software program from Audinate, is needed to route Dante audio to your loudspeakers. While not required, before routing Dante audio we recommend giving all of your Radius loudspeakers a 'friendly' name in Dante Controller upon initial setup to help identify your loudspeakers and simplify system management. To do this:

- Follow the guidelines in Section 3 to set up your Radius network and go online with your system
- Connect your computer to the network as illustrated in Figure 4.

- Open Dante Controller. The home screen should show the 'Routing' tab, and a list of devices. If you do not see your Radius loudspeakers here refer to the troubleshooting section of this guide.

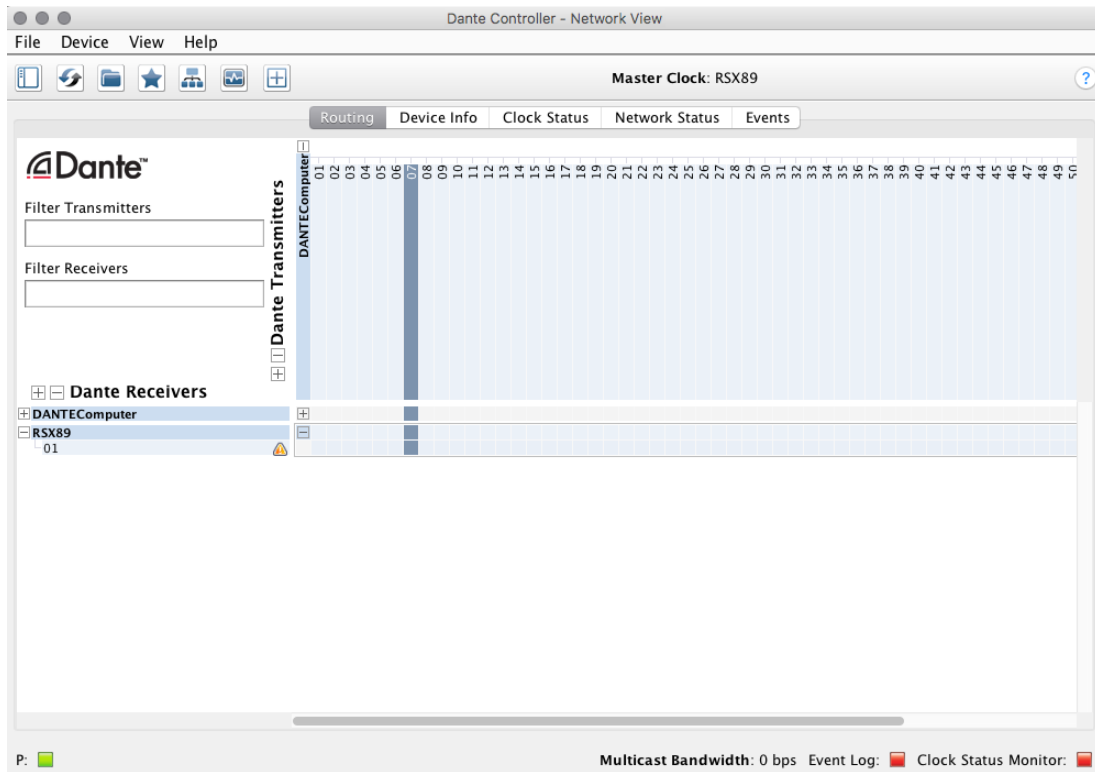


Figure 13 - Home page of Dante Controller. Dante receivers are shown on the left, and transmitters on the top.

- Select the 'Device' drop down menu, and then select 'Device View'

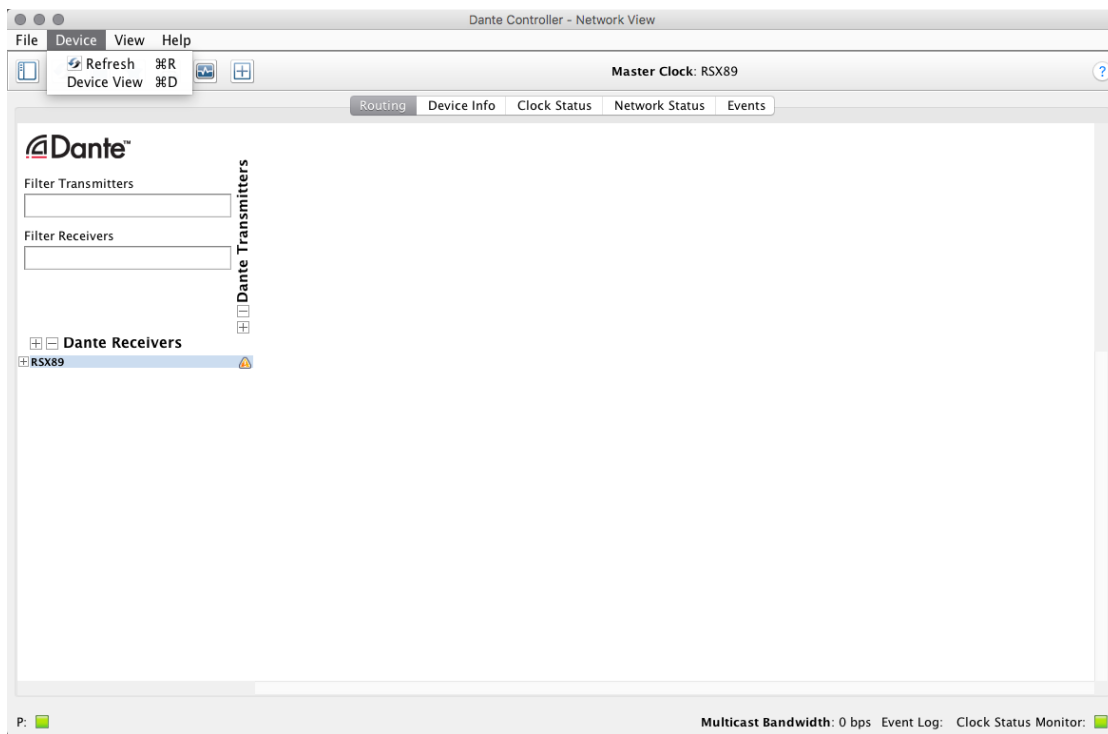


Figure 14 - Drop-down to select 'Device View'

- There will be a drop-down menu showing all the devices on the network. Select each loudspeaker and press the 'Identify' icon to illuminate its rear panel (Drop-down menu and 'Identify' button are indicated with red arrows).

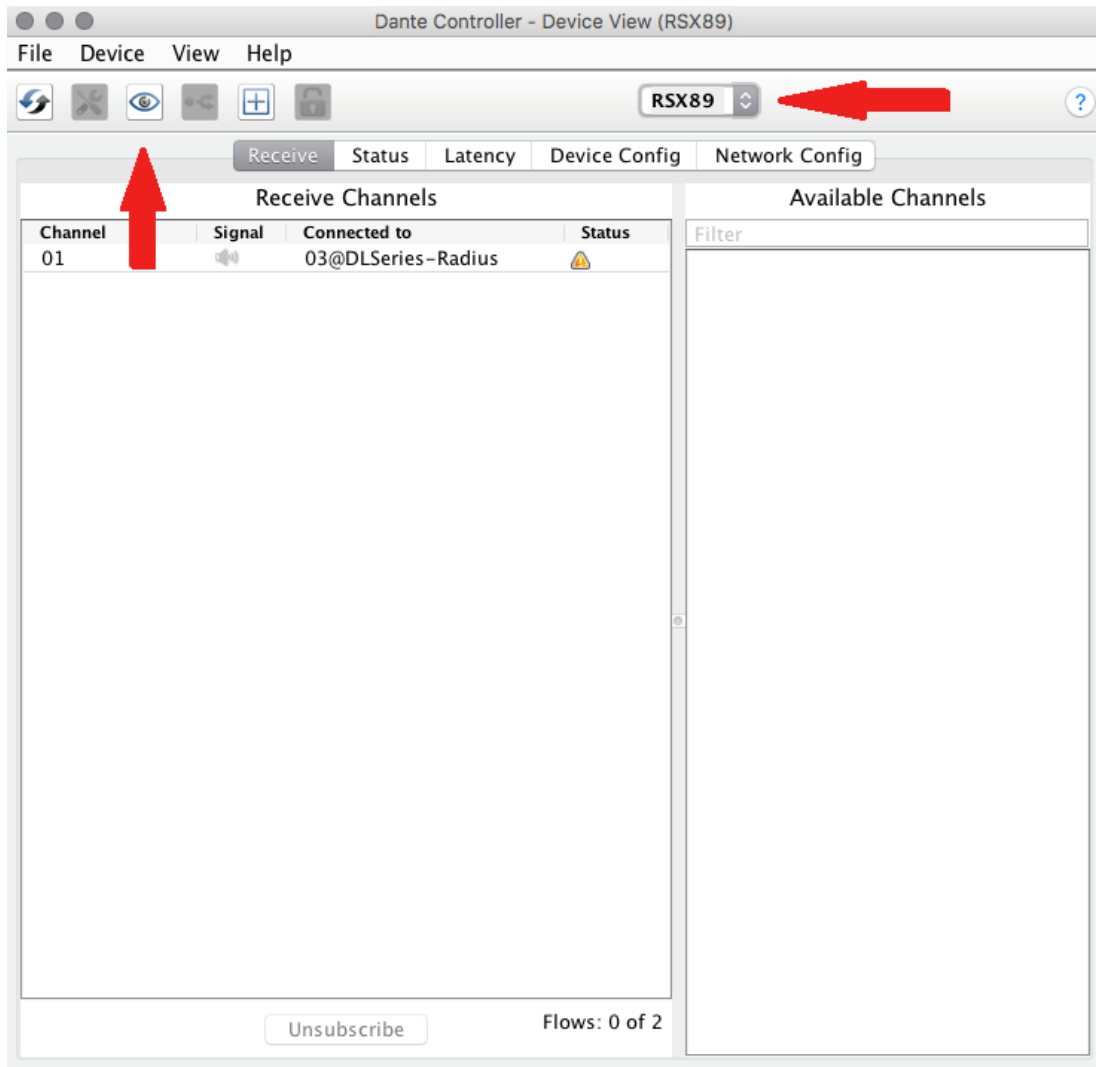


Figure 15 - Device view for an RSX89. Arrows indicate the drop-down menu, and the 'Identify' button

- When you've identified the loudspeaker, select the 'Device Config' tab, and type an easily identifiable name in the 'Rename Device' field.

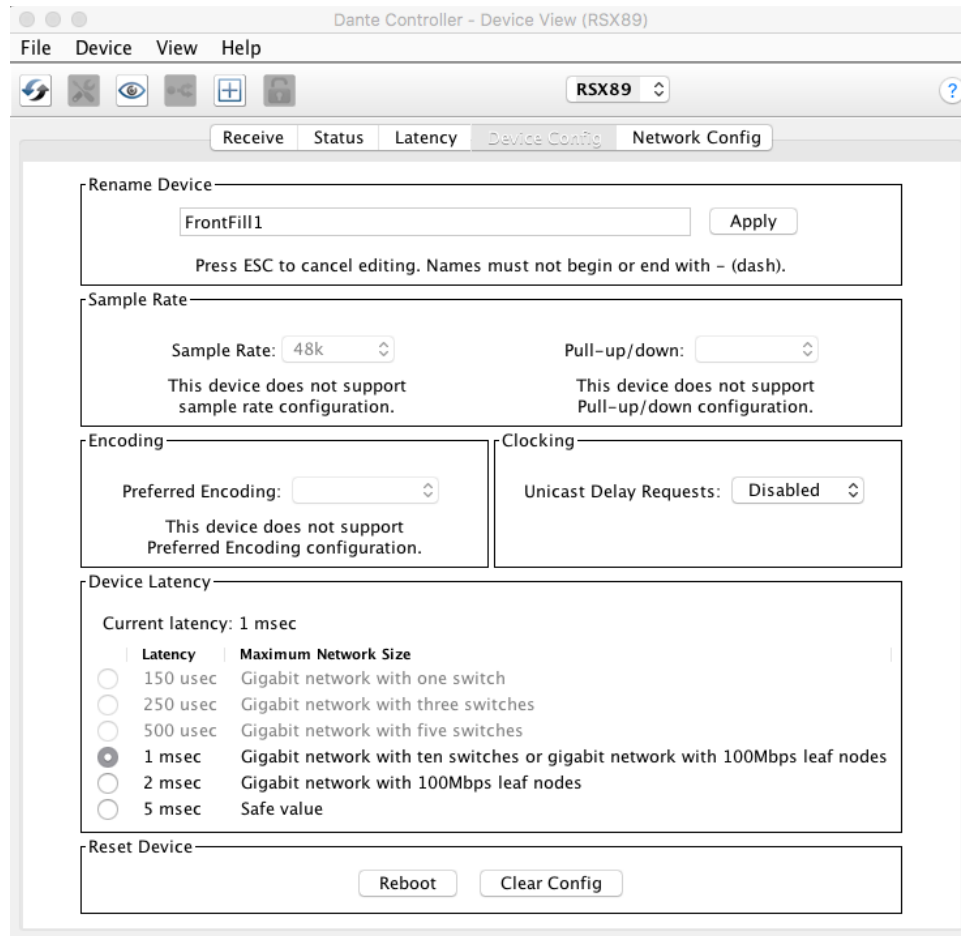


Figure 16 - Device Config tab, where the device can be renamed

- Dante subscriptions are based on names. This means that Dante subscriptions will be kept if the loudspeaker is turned off or disconnected from the network, and automatically restored once the loudspeaker is powered back on or reconnected to the network. It also means that after giving devices 'friendly' names they shouldn't be changed without good reason as Dante subscriptions will have to be re-assigned.

NOTE: The IP address displayed in Dante Controller for a loudspeaker will not match the IP address displayed on the rear panel of the loudspeaker. The IP address displayed on the rear panel of the loudspeaker corresponds to the DSP found in the loudspeaker, while the IP address displayed in Dante Controller corresponds to the IP address of a separate port of the Audinate Ultimo board. This is typical of all Radius loudspeakers and is normal.

Dante Routing and Dante Controller

While some users will only need to route their signals once if their system configuration does not change, others may need to do it more frequently. Routing a Dante signal to your Radius loudspeakers is a two-step process. First, the signal must be routed to the source's Dante outputs. The process for this will vary depending on what hardware is being used (typically a mixing console, Dante onramp, or computer) so will not be covered here. Second, Dante subscriptions must be made in Dante Controller

to assign Dante channels from a Dante transmitter (audio source) to specific Dante receivers (loudspeakers). To do this:

- Open Dante Controller. It will open on the 'Routing' Tab. Transmitting devices will be shown at the top of the screen, and receiving devices will be shown on the left. You can press the '+' to expand each devices view and see what Dante channels are available to route.

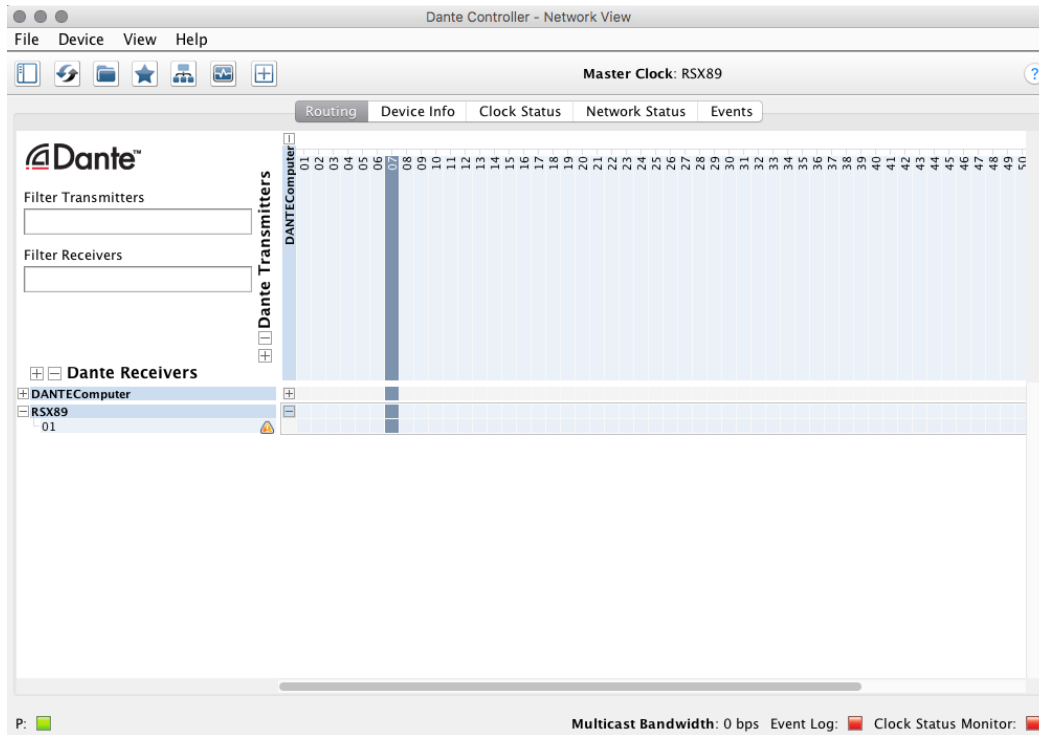


Figure 17 - Dante Controller Routing page. In this image the RSX89 has not subscribed to a Dante channel.

- Check the appropriate box to subscribe the desired channel of Dante to the loudspeaker. This will be indicated by a green check mark.

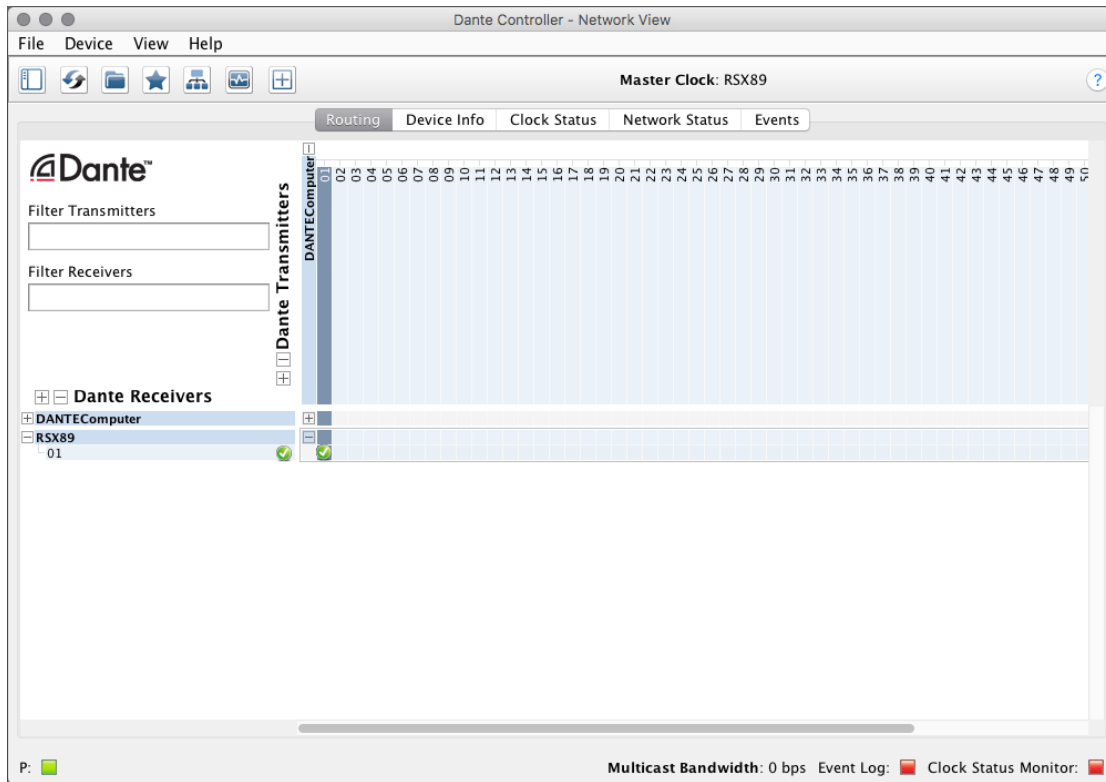


Figure 18 - The green check shows that the RSX89 has subscribed to Dante channel 1

- A Dante input should now be assigned and routed to the loudspeaker. Using EAWmosaic, or by looking at the rear-panel of the loudspeaker, you should be able to confirm a Dante signal is detected.



Figure 19 - The RSX89 in EAWmosaic now indicates it has detected a Dante input. This can also be seen on the rear panel of the cabinet itself

Radius loudspeakers will automatically detect a Dante subscription and display 'Dante' instead of 'Analog' on their rear panel and in EAWmosaic. If no Dante subscription is detected it will default to an analog input. As mentioned earlier, this also means that an analog signal can be used as a backup in the event of the loss of a Dante subscription. If a Dante subscription is no longer detected the loudspeaker will automatically switch to its analog input without any action required from the system operator. It is therefore unnecessary for the user to ever 'switch' between Dante and analog inputs for Radius loudspeakers – it is automatic.

Section 6 – Using EAWmosaic to Determine Array Configuration

One of the most useful features of the EAWmosaic software is the ability to quickly determine the optimal array configuration for a particular venue. Unlike traditional point source loudspeakers (point and shoot) a line array needs to be configured in a specific way for each space in order to perform at its best. Splay angles, pick point, and the physical location of the array all play an important role in system performance. EAWmosaic is a powerful tool that helps the user quickly determine the best configuration for a particular venue.

A physical system is not required to determine the optimal configuration for an application. Using EAWmosaic the user can create a virtual system that mirrors the physical system he/she will be using, model the venue, and the software will determine the optimal configuration for the system in that space. Once you've determined an appropriate configuration export a PDF file of the array details to reference when you are at the venue for the installation or gig. We offer a [guide](#) on operating EAWmosaic to model venues and configure your systems, as well as several short tutorial videos, available on EAW's [YouTube channel](#).

Section 7 – Setting Up at the Venue

Once you arrive at the gig you should have already:

- Run Output Check on all Radius loudspeakers and confirmed they are functioning correctly
- Updated firmware on all units
- Given your loudspeakers 'friendly' names in Dante Controller, and have your Dante outputs assigned from your source. If possible, you may have your Dante channel subscriptions already made in Dante Controller too.
- Used EAWmosaic to determine an appropriate array configuration for the gig

Optilogic

Newly developed for Radius, Optilogic utilizes hardware and software to quickly assign appropriate, unique processing to every loudspeaker in an array. Each RSX208L and RSX12 cabinet includes infrared transceivers on the top and bottom of the cabinet, allowing each loudspeaker to automatically detect its position in the array relative to its neighbors. Each cabinet also includes an inclinometer allowing each loudspeaker to automatically detect its splay angle. Through EAWmosaic, or the rear-panel of a single cabinet in an array, the user enters the height of the array, and the beginning and end of the audience plane.

Based on the array self-awareness and the user-inputted parameters, OptiLogic performs two important functions. First, it compensates for the size of the array and takes low-frequency coupling into account, ensuring that the system's tonal response is consistent no matter what size the array is. Second, it assigns unique air loss pre-emphasis filters to each loudspeaker in the array, which essentially is high-frequency shading, to each loudspeaker. The top 'long-throw' loudspeaker will have more high-frequency output relative to the bottom 'short-throw' loudspeaker. If the user desires to adjust the overall gain of an individual loudspeaker, this can be done via the back-panel of any individual cabinet.

The images below show how to enter the parameters for Optilogic using EAWmosaic:

- Assign your RSX208L array to a group as shown in Section 3's 'Update Firmware'

- Tap any RSX208L in the array, then select 'Edit'

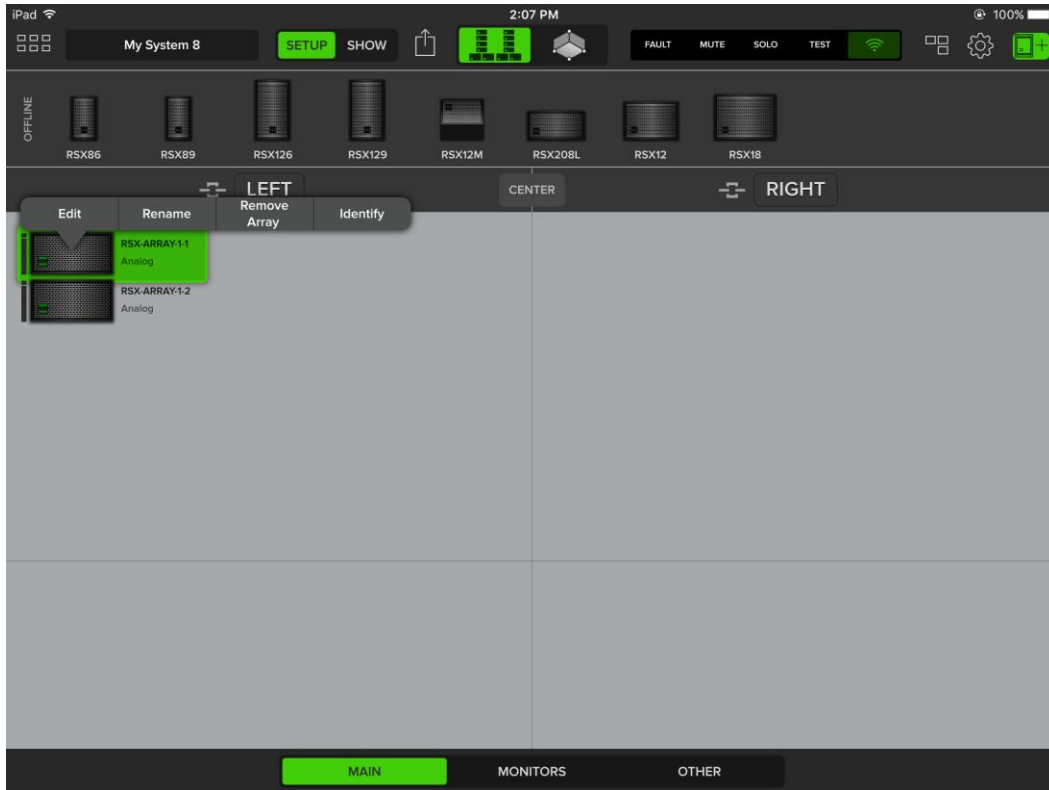


Figure 20 - Tap an RSX208L in the array, then select 'Edit'

- Underneath 'Optilogic', select 'Clear' to erase the Optilogic processing that is already assigned to the array. If no Optilogic processing has been assigned, press 'Optimize'



Figure 21 - An array without Optilogic processing assigned

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- Enter values for the three parameters. Array height refers to the pick point on the flybar. Audience start/stop values refer to the distance of the nearest and furthest listeners relative to the array.

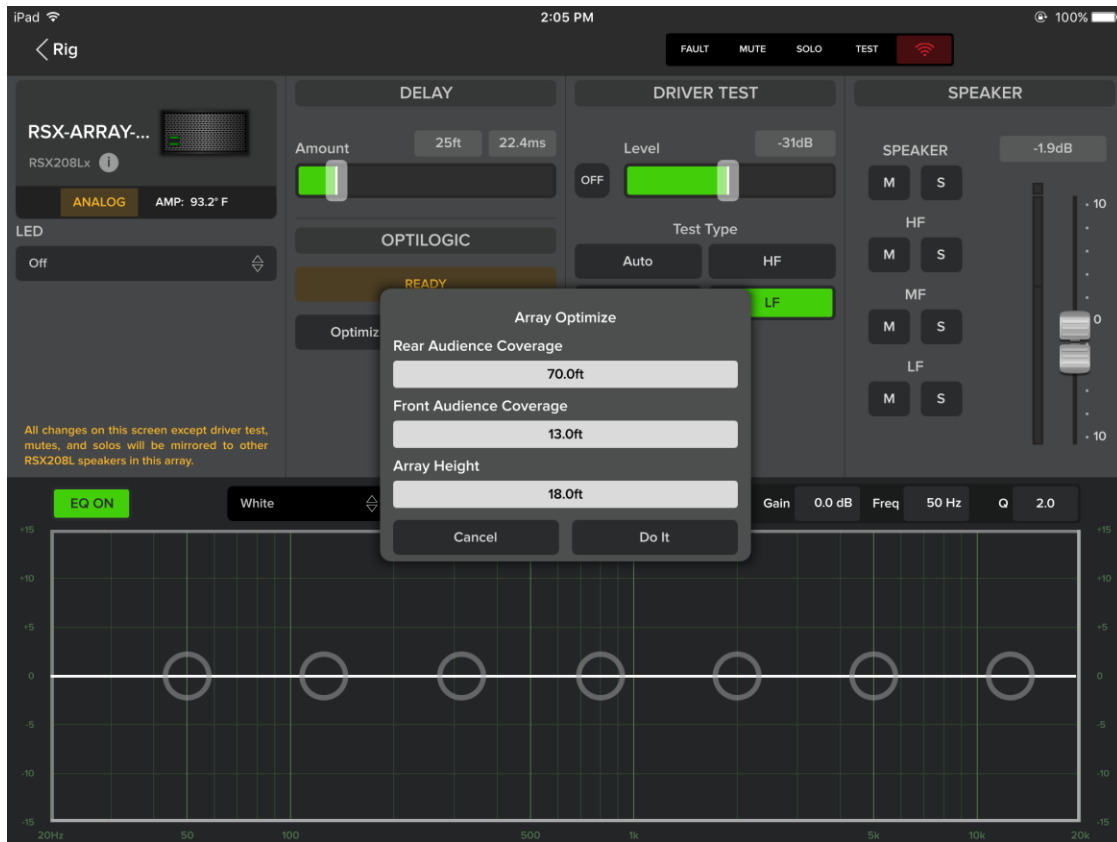


Figure 22 - Entering Optilogic parameters

- When the parameters are entered, select 'Do it'. You'll see a window confirming Optilogic processing has been assigned, and the status will show 'In Sync'

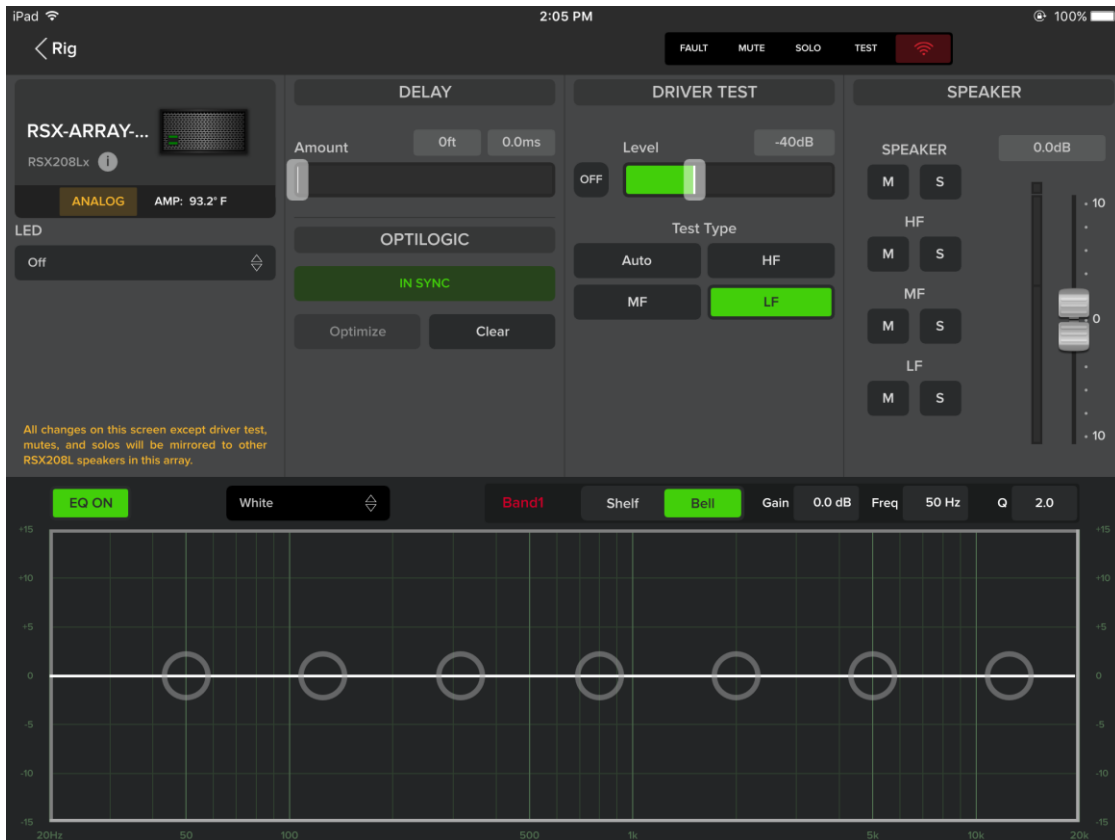


Figure 23 - An array with Optilogic processing assigned

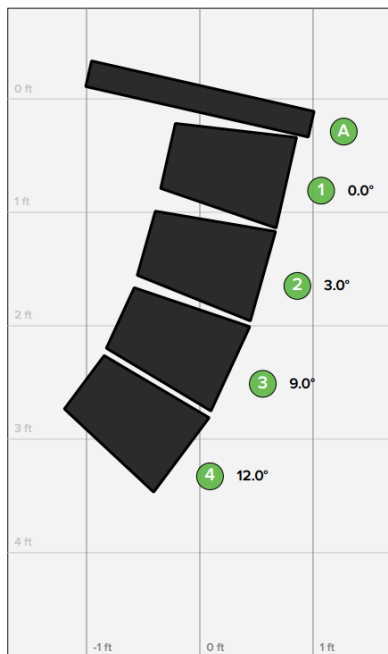
System Setup and Configuration

Now all that's left to do is cable up the system, fly the arrays, and make any desired changes to the system via DSP:

- Configure the arrays as recommended by EAWmosaic (pick point, splay angles, etc).

My System 3

Prepared June 23, 2017 3:09 pm



Safety Factor 10:1

ARRAY		FLYBAR	
Height	3.5 ft	Hang Style	Center
Depth	2.1 ft	Pick Point	6
Weight	198.0 lbs	Pick Height	18.0 ft
Clearance	9.5 ft	X Position	-13.5 ft
Bottom Angle	36.8°	Y Position	13.0 ft

COMPONENT	SPLAY	PROFILE	CARDIOID	POLARITY	LEVEL
A. FBX100	-	-	-	-	-
1. RSX208L	0°	Sapphire	-	-	0.0 dB
2. RSX208L	3°	Sapphire	-	-	0.0 dB
3. RSX208L	9°	Sapphire	-	-	0.0 dB
4. RSX208L	12°	Sapphire	-	-	0.0 dB

Figure 24 - Array configuration as exported from EAWmosaic

- Setup your network hardware as described in Section 3: Wi-Fi router, switches (if used), Dante source (if used), and control computer (if used). Connect all hardware and power them on.
- Cable the system: power, network, and/or analog.
- Connect your iPad to the Radius wireless network.
- Open EAWmosaic. If you have your system configuration saved, open it. Otherwise, create a new system.
- Tap the 'Speaker Shelf' button, and assign your system components to appropriate groups.
- Tap on a RSX208L loudspeaker in each array and select 'Edit'. Enter appropriate parameters for Optilogic, then repeat for each array in the system.

- Make DSP adjustments as desired: voicings, EQ, etc.



Figure 25 - RADIUS array DSP control window

- When the system is configured the way you want it, hit 'Show Mode'. Show mode is a feature designed to protect system operators from themselves. It allows the operator to control parameters that are useful during a show: EQ, voicing, etc. It locks certain features from being accessible during a show, like soloing a single pass-band of one loudspeaker and muting the rest of the system.

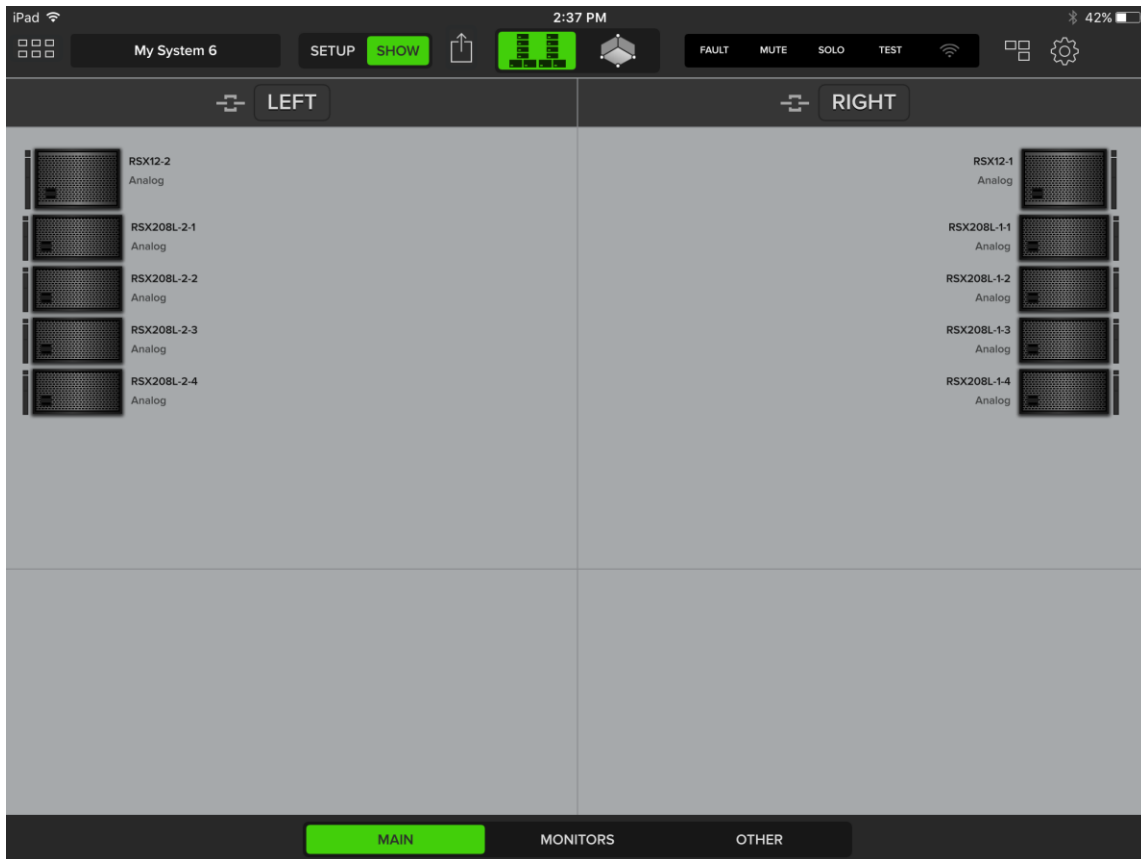


Figure 26 - Rig View with Show Mode engaged

- Do the show.

Section 8 -Troubleshooting

1- Problem

After updating firmware from EAWmosaic, cannot connect to loudspeakers on network and/or rear panel display does not return to normal operating mode

Possible Causes

Firmware update incomplete (interrupted)

Potential Resolutions

1. Reboot loudspeaker (via AC power cycle)
2. If speaker indicator is red in EAWmosaic, tap once on speaker in shelf
3. A prompt will appear asking to **Reboot or Update Firmware.**
4. Select Reboot

5. This should unlock the rear panel display of the Radius module.
6. The indicator should now illuminate orange.
7. Tap and Drag the speaker into the system and update firmware once prompted.

2- Problem

The control PC does not see any Dante devices in Dante Controller

Possible Causes

Control computer is not communicating with the network

Potential Resolutions

1. In Dante Controller, confirm the correct network interface is selected.
2. On the control computer, confirm the network interface has correct IP address, and is set to acquire addresses automatically.
3. If there are two different wired network interfaces on the computer, confirm that they are assigned to different subnets. Or, disable the unused network interface.
4. Disable any antivirus software and firewalls on control computer.
5. Swap cable between control computer and network switch.

3- Problem

One or more loudspeakers don't appear in Dante Controller

Possible Causes

Radius loudspeaker(s) is not communicating with the network

Potential Resolutions

1. Confirm the network cable is securely connected to the loudspeaker and the switch or router, and activity lights are flashing to indicate a connection.
2. Check for a possible network loop as described in Section 3.
3. Power cycle the loudspeaker. If a DHCP server was introduced to the network after a loudspeaker automatically self-assigned an IP address, there could be a conflict.

4- Problem

One or more loudspeakers appear in Dante Controller, but not in EAWmosaic

Possible Causes

iPad not connected to Radius Wi-Fi network, or RF interference from multiple Wi-Fi routers is disrupting wireless communication, or multicast traffic is interfering with Wi-Fi control.

Potential Resolutions

1. Confirm iPad is connected to correct Wi-Fi Network.
2. Swap cabling for unit(s) that don't appear in EAWmosaic.
3. Use Ethernet hard-wire, described in Section 3, to determine if the issue is related to the wireless connection.
4. Determine if nearby wireless traffic is causing interference, and change wireless channel.
5. If multicast traffic is being transmitted across the network plug the Wi-Fi router into the COMM port of a Radius module.

5- Problem

Audio artifacts or muting during Dante playback

Possible Causes

Network clock issue or network switch with EEE enabled

Potential Resolutions

1. Confirm any network switches being used have EEE disabled.
2. Confirm clock status is correct by consulting Dante Controller.
3. Check device's latency monitor in Dante Controller to confirm data is arriving below the selected device latency.
4. Confirm network cable runs are no greater than 300'.
5. Verify no more than 10 units are looped together in a single network chain.
6. Check for a possible network loop as described in Section 3.

6- Problem

RSX208L/RSX12 arrays appear in speaker shelf as array fragments instead of a complete array.

Possible Causes

One or more loudspeakers in an array are not communicating with the network.

Potential Resolutions

Isolate the issue to specific loudspeaker(s). Troubleshoot the individual unit(s) using the network troubleshooting steps above in Problem 3.

7- Problem

Loudspeaker shows an analog input but user expects to see Dante

Possible Causes

Dante routing/subscriptions not correctly configured, or a bad cable, or the loudspeaker in question is not communicating with the network.

Potential Resolutions

1. Confirm Dante subscriptions have been made and are visible in Dante Controller.
2. Confirm loudspeaker is visible in Dante Controller. If not, follow troubleshooting steps from #3
3. Swap cable

8- Problem

Loudspeakers shows Dante subscription, but no audio

Possible Causes

Audio routing not correctly configured on transmitting device

Potential Resolutions

1. Confirm Dante input cables are connected to Radius loudspeaker Dante ports, not COMM port.
2. Confirm correct audio routing at transmitting device, such as console or onramp.

3. If possible, route audio from a known good Dante source (DVS is a good example) to confirm the issue is originating from the Dante source.

9- Problem

Network loudspeaker discovery is sluggish or slow.

Possible Causes

Wireless router is saturated with network audio traffic, or Network is handling significant unrelated traffic.

Potential Resolutions

1. Ensure that wireless router is connected to a filtered port (labeled 'COMM') on one of the loudspeaker enclosures. This will reduce the amount of additional traffic sent to the router, improving EAWmosaic performance.
2. Ensure that the Radius network is isolated from corporate or office networks, or those handling internet traffic

10- Problem

Radius loudspeaker does not sound 'correct'

Possible Causes

User-defined processing parameters from last use remain in system degrading performance from factory standards, or possible component damage

Potential Resolutions

1. Perform 'Factory Reset' via loudspeaker rear panel. NOTE: This will not affect Dante audio assignments or names.
2. Use Output Check to confirm components are functioning correctly
3. Confirm input signal sounds correct by playing it through a known working loudspeaker.

Section 9 – Rigging

Before flying or ground-stacking any Radius array we suggest consulting either EAWmosaic or Resolution software to confirm the array configuration is safe. The number of cabinets, safety factor, pick point, splay angle, etc. all influence the mechanical forces on the cabinet and flybar hardware and should be evaluated on a case by case basis.

Flying an Array

- If RSX12 subwoofers are part of the array they must be flown above RSX208L. First, insert the tabs on the front of the FBX100 flybar into the front rigging tubes of the RSX12. Insert the front pins on either side. Next, slide the rigging shaft on the rear of the RSX12 up and into the rigging tube of the flybar and pin both sides.

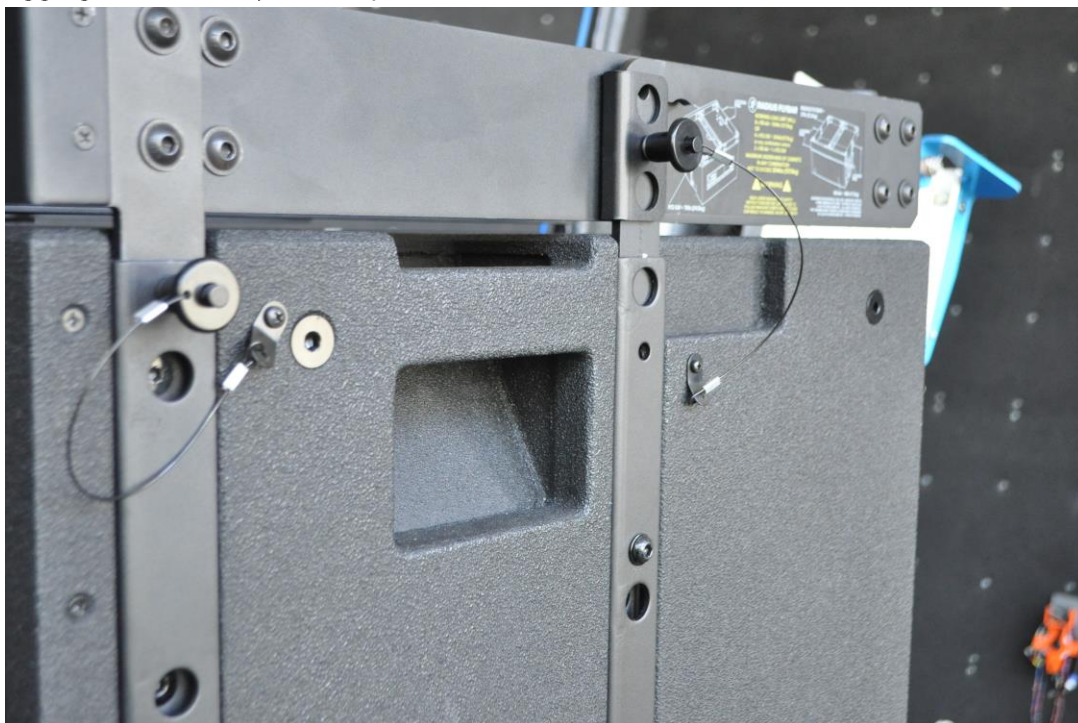


Figure 27 - FBX100 connected to RSX12

If no subwoofers are used in the array RSX208L will attach directly to the flybar. Just like with RSX12, first insert the front tabs of the flybar into the front tubes of the RSX208L and pin both sides. To attach the rear of the RSX208L, swing the rear rigging arm up and insert into the rear rigging tubes of the flybar. Use the labels on the rigging arm to determine the correct pin hole to achieve the desired splay angle.



Figure 28 - RSX208L connecting to FBX100 flybar

- Different splay angles are achieved by using the same pin hole depending on if the RSX208L is being attached to a flybar or another loudspeaker. The holes marked $F0^\circ$, $F3^\circ$, or $F6^\circ$ correspond to the angles that will be realized if using those holes to pin to the flybar. The other markings refer to splay angles achieved if attaching to another loudspeaker.

For example, the same hole will create a 0° splay angle if attaching to the flybar, but a 6° splay angle if attaching to another loudspeaker.



Figure 29 - Splay Angles Displayed on Rear Rigging Arm

- To attach additional loudspeaker below a RSX12 or RSX208L, always 'pin out' the tabs of the front two rigging shafts of the upper loudspeaker first. This will allow you to insert the front tabs of the upper loudspeaker into the rigging tubes of the lower loudspeaker in the same fashion that the flybar connected to the top cabinet in the array.



Figure 30 - Rigging tabs pinned into place to allow them to be inserted into the front rigging tube of the lower loudspeaker

- After the tabs are inserted into the rigging tubes of the lower loudspeaker, pin them. Then, swing the rear rigging arm up and into place at the desired splay angle and pin.



Figure 271 - RSX208L pinned together



Figure 282 - Flown array

Ground-Stacking Using RSX12

Up to 4x RSX208L can be safely stacked on top of a single RSX12, or 3x RSX208L on top of 2x RSX12.

- Position the RSX12 where desired, then pin out the front tabs of an RSX208L and insert them into the front rigging tubes of the RSX12.
- Slide up the rear rigging shaft of the RSX12, and pin it at the top and bottom of the shaft.



Figure 293 - RSX208L stacked on a RSX12

- To stack additional RSX208L, pin out their front tabs, insert into the front rigging tubes of the lower RSX208L, and pin. Swing up the rear rigging arm of the lower RSX208L into the rear rigging tube of the upper RSX208L, and pin at the desired splay angle.



Figure 304 - A RSX208L and RSX12 ground-stacked array

Ground-Stacking Using RSX208L Only

- Invert the FBX100 flybar and place its feet on a level surface. Invert an RSX208L cabinet and insert the tabs of the flybar into the front rigging tubes of the RSX208L and pin. Swing rear rigging arm of the RSX208L into rear rigging tubes of the flybar and pin at the desired angle using the Fx° splay angle markings.



Figure 315 - Inverted RSX208L pinned into an inverted FBX100 flybar

- Pin out the front rigging tabs of the bottom RSX208L. Invert the next RSX208L cabinet and insert the tabs of the lower cabinet into the upper cabinet's front rigging tubes and pin. Swing rear rigging arm into upper cabinet's rear rigging tube and pin at the desired angle. Repeat for subsequent RSX208L cabinets.

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