EAW
EASTERN ACOUSTIC WORKS
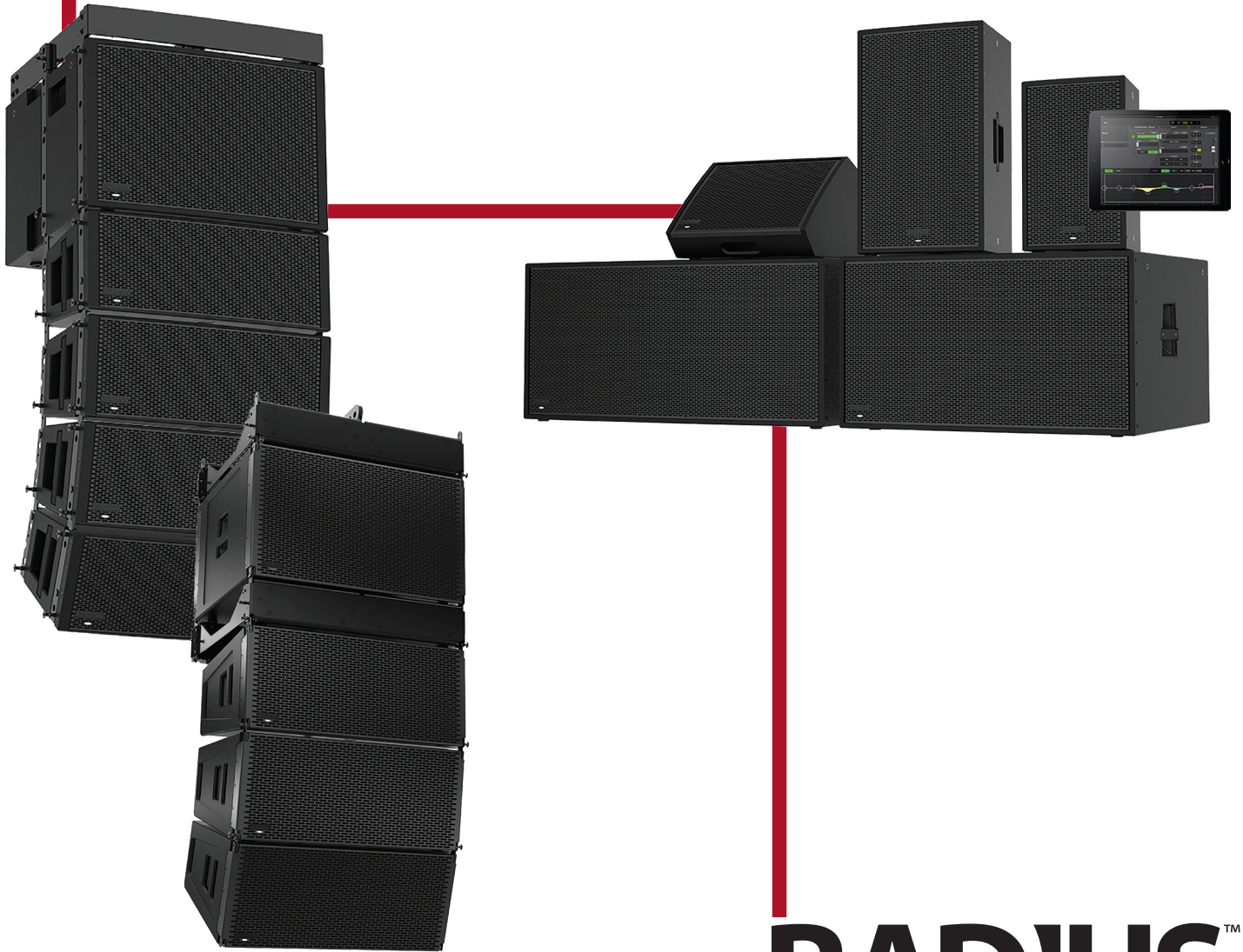
RADIUS™
RSX Rigging Guide

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Help and training videos are also available on the EAWVideo YouTube Channel.

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 venue. Unlike traditional point source loudspeakers (point and shoot) a line array needs to be configured in a specific way for each space 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 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.
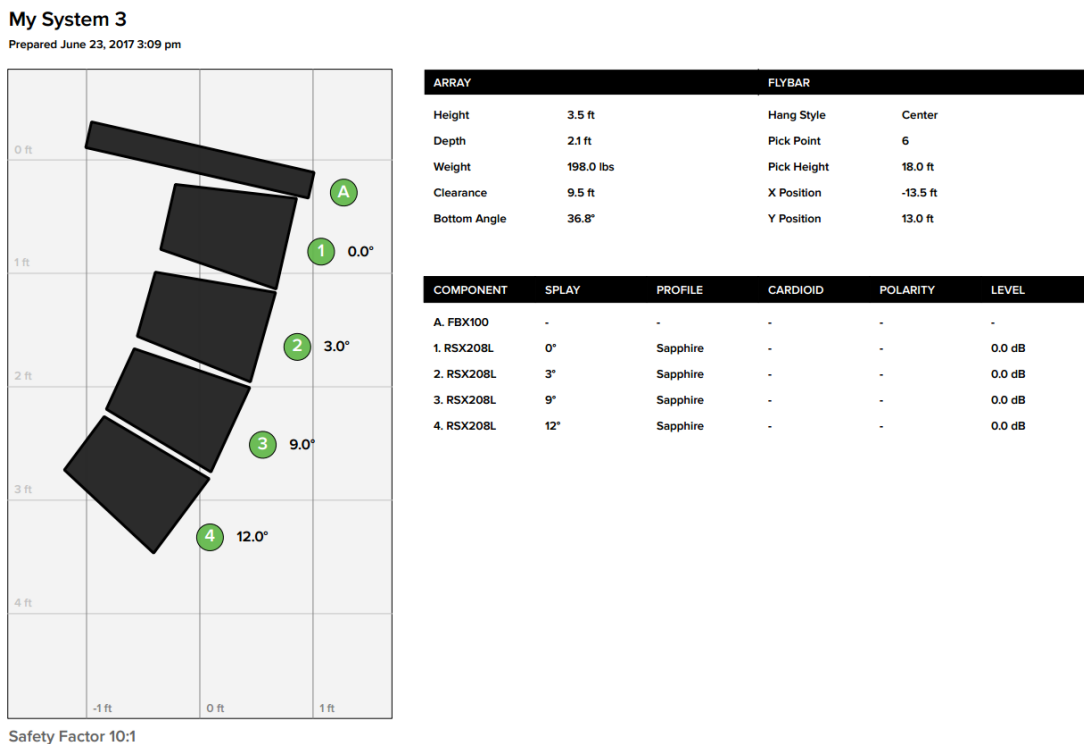
Figure 1 - Array configuration as exported from EAWmosaic

Rigging RADIUS

Rigging: Mounting / Suspension

DANGER: *Mounting or overhead suspension of any heavy load can result in serious injury and equipment damage. This work should be done by qualified persons following safe rigging practices in accordance with all applicable safety and construction standards. Such persons must determine the required load ratings and design factors. They must determine the mounting or suspension method that meets static, dynamic, shock, and any other load requirements. All such work must be done in accordance with and in compliance with all federal, state, and local regulations governing such work.*

CAUTION: *The user assumes all responsibility and liability for the proper design, installation, and use of any rigging and mounting systems for EAW loudspeakers.*

CAUTION: *Accessory items are available from EAW and from aftermarket suppliers to facilitate suspension, wall, ceiling, or other rigging. When using these items, review all enclosed documentation and carefully follow all instructions and safety precautions.*

Rigging Design Practices

Rigging a loudspeaker requires determining:
1. The rigging methods and hardware that meet static, shock, dynamic, and any other load requirements for supporting the loudspeaker.
2. The design factor for and the required WLL (Working Load Limit) for this support.

EAW strongly recommends the following rigging practices:
1. Documentation: Thoroughly document the design with detailed drawings and parts lists.
2. Analysis: Have a qualified professional, such as a licensed Professional Engineer, review and approve the design before its implementation.
3. Installation: Have a qualified professional rigger do the installation and inspection.
4. Safety: Use adequate safety precautions and back-up systems.

Rigging Hardware and Accessories

Rigging EAW loudspeakers will invariably require hardware not supplied by us. Various types of load-rated hardware are available from a variety of third-party sources. There are a number of companies specializing in manufacturing hardware for, designing, and installing rigging systems. Because of the hazardous nature of rigging work and the potential liability, engage companies that specialize in these disciplines to do the work required.

Rigging Assemblies / Rigging Pins [RSX Line Array / Flyable Subwoofer]

Every flyable RSX model comes with Rigging Assemblies with connected Rigging Pins on each side.

> The RSX Rigging Pins come equipped with lanyards. Additionally, the flyable RSX models ship with two extra Rigging Pins and lanyards to be used as replacements/spares.

*NOTE: The integral mounting points on the RSX enclosures are designed to support only a single enclosure. ALWAYS SUSPEND ENCLOSURES VIA EYEBOLTS DIRECTLY FROM THE STRUCTURE. **NEVER SUSPEND ENCLOSURES FROM OTHER ENCLOSURES VIA EYEBOLTS**. The only exception to this is utilizing a flybar and the integral array rigging on the RSX208L, RSX212L, RSX12, and RSX18F.*

Always use EAWmosaic or EAW Resolution to verify the structural integrity of the array you intend to suspend. The ONLY exception to this is with the pre-defined, pre-approved array configurations provided later in this manual.

Mounting Points (aka Fly Points and/or Rigging Points)

RADIUS RSX12 and RSX18 subwoofers come equipped with eight (8) integrated mounting points. Four are in each corner on the top of the cabinet and two are on the top corner of each side. The RADIUS RSX218 subwoofer comes equipped with four (4) integrated mounting points located in each corner on the top of the cabinet. The RADIUS RSX86 and RSX89 full-range loudspeakers come equipped with nine (9) integrated mounting points. Two are located on either side of the top handle, two are on each side and three are on the bottom of the unit. The RADIUS RSX126 and RSX129 full-range loudspeakers come equipped with nine (12) integrated mounting points. Three are located on the top of the cabinet, two are on each side, three are on the bottom and two are on the rear panel of the unit.

For RSX12x and RSX8x, always utilize at least two mounting points for suspension. For the RSX18 and RSX218, always utilize at least four mounting points.

NOTE: The integral mounting points on the enclosure are designed to support only a single enclosure. ALWAYS SUSPEND ENCLOSURES VIA EYEBOLTS DIRECTLY FROM THE STRUCTURE. **NEVER SUSPEND ENCLOSURES FROM OTHER ENCLOSURES VIA EYEBOLTS**.

> RSX Line Array modules have no mounting points but can be flown using the attached rigging hardware and compatible flybar assemblies.

Handles
The built-in handles on all RADIUS cabinets – except the RSX86, RSX89, and RSX12M – indicate that they should always be lifted, carried and moved by at least two people.

> NEVER attempt to suspend ANY RADIUS unit by the handles. Failure to follow these precautions may result in damage to the equipment, personal injury, or death.

Pole Cup
All RADIUS Series models – except the RSX208L, RSX212L, RSX218, and RSX12M – have a built-in pole cup. The pole cups on the RSX12 and RSX18 subwoofers are threaded for extra security. Be sure to tighten the pole to the subwoofer before placing a full-range loudspeaker on top of the pole.

Check to make sure that the support surface (e.g. floor, etc.) has the necessary mechanical characteristics to support the weight of the subwoofer(s) and loudspeaker(s). Failure to follow these precautions may result in damage to the equipment, personal injury, or death.

RSX208L/RSX12

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.
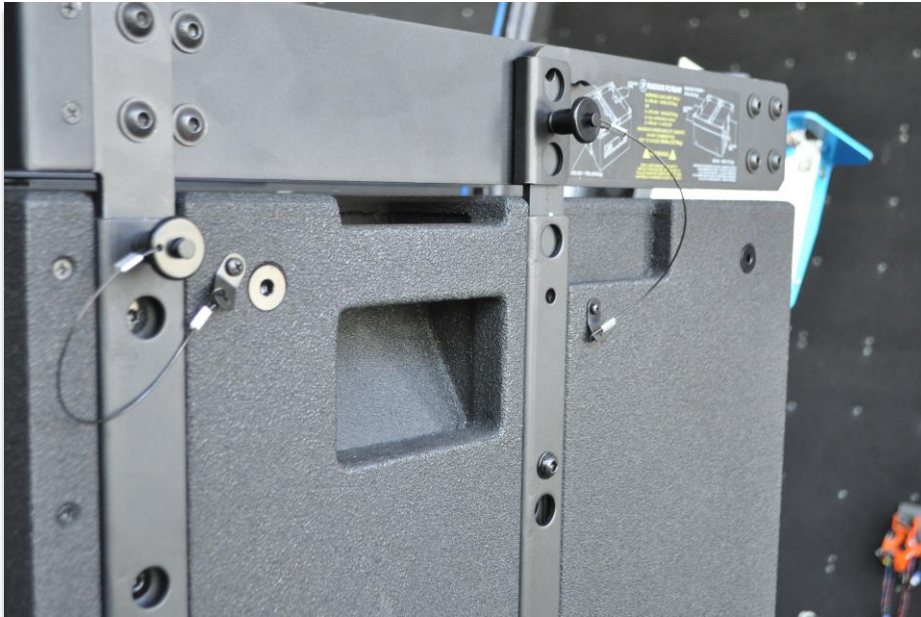

Figure 27 - FBX100 connected to RSX12

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°, F3°, or F6 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 for insertion 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 31 - RSX208L pinned together

Figure 32 - 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. When deploying the system in this manner, it's important to note **all modules must be flipped upside down.** Upon doing so, each module in the array will automatically recognize being flipped and adjust the LCD screen orientation accordingly.

Figure 33 – LCD screen with flipped module.

- Position the RSX12 where desired, then pin out the front tabs.
- Add the first RSX208L on top of the sub, and pin to the front tab of RSX12.
- Select splay angle and pin to the rear of RSX12.

Figure 34 - RSX208L stacked on a RSX12

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

Figure 35 - 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 25 - 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.

RSX212L/RSX18F

Flying an Array

- Attach the stinger to the frame. Line up the holes on the stinger with the corresponding holes on the frame.
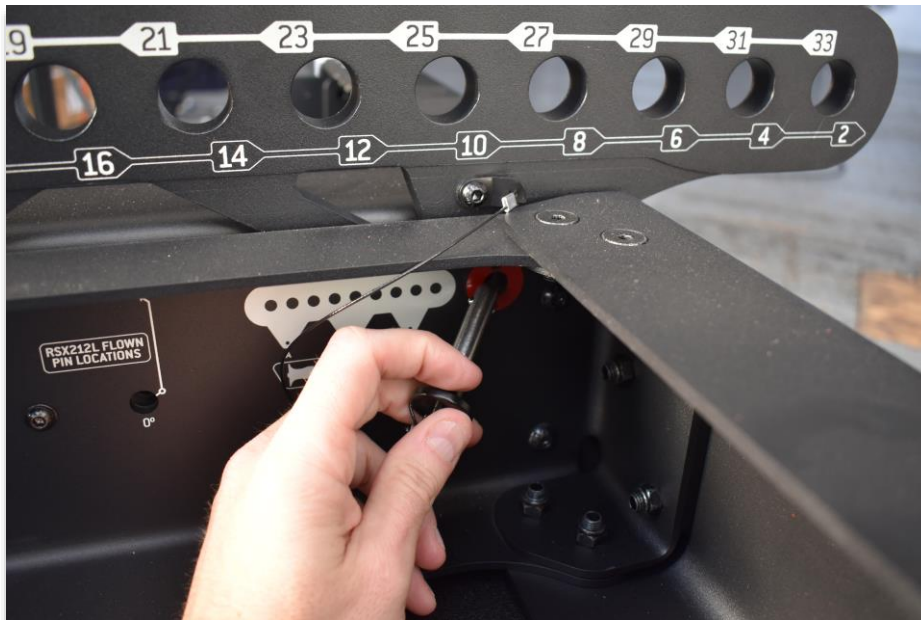- Once lined up, pin all three holes (Indicated by red and labeled "A").

Figure 36-38 – Attaching the stinger

- To attach RSX18F to the frame, insert tabs from frame and pin.
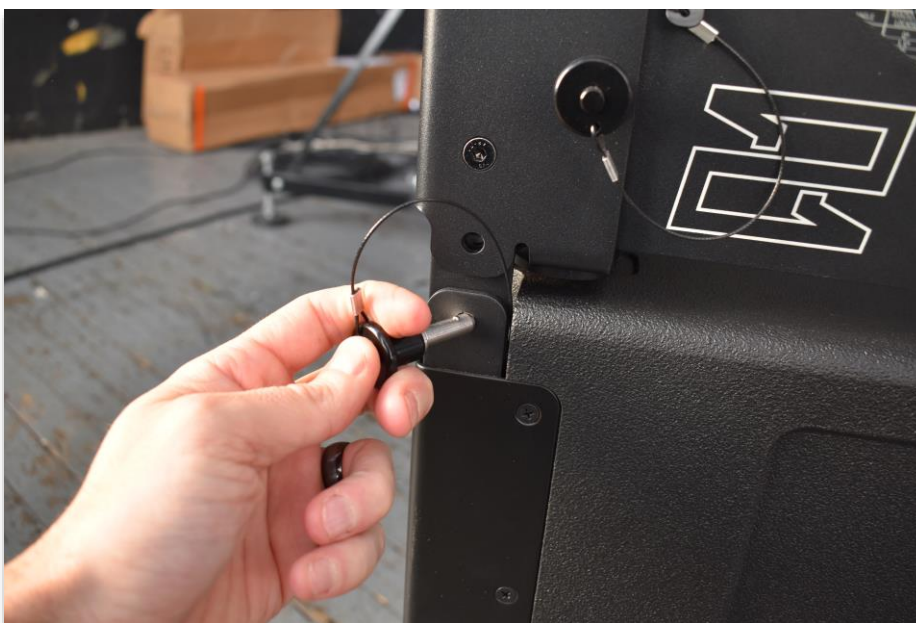- The sub will be attached from both the tabs in the front and back.

Figure 39–40 - Attaching RSX18F to the frame.

- To attach RSX212L to the frame, insert tabs from frame and pin.
- Flip the rear rigging arm and pin splay angle and locking position using attached pins from the module below.
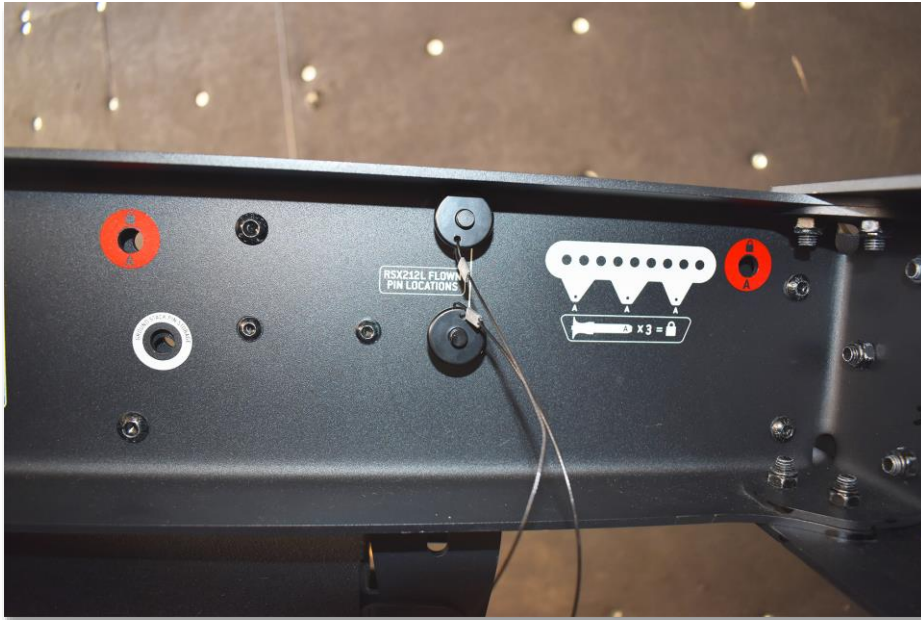
Figure 41–44 - Attaching RSX212L rear rigging to frame

- To attach additional RSX212L, pin in the tabs from the above module with attached pins from the below module.
- Select rear splay angle then locking position (2 holes up from splay angle).

Figure 45-46 – Attaching RSX212L front rigging

Figure 47-49 – Attaching RSX212L rear rigging

- Insert the tabs of the below RSX212L frame to the top RSX18F (using the pins attached to the frame) to complete constructing the array.

Figure 50 – Attaching RSX18F array to RSX212L array.

Using the caster pallet (cart)

- EAW provides a caster pallet for easy transport of RSX212L arrays.
- Each pallet can move four (4x) modules with the splay angles set to "0".
- Lower the array slowly and pin in the bottom box with the pins attached to the cart.

Figure 51 – Front rigging for RSX212L caster pallet

- Using the rear arm and pin on the caster pallet, pin splay angle "0" on the bottom array module.

Figure 52 – Rear rigging for RSX212L caster pallet

- The stinger may be stored in the caster pallet for transport as well.

Figure 53 – Storing the stinger for transport.

Ground-stacking

- The adaptor frame is designed to support ground-stacking.
- This can be done with or without subs in the array.
- If subs are used, place frame on top and pin all four (4) locations as seen in *Figure 39-40*.
- Insert the tabs from the top array item using the frame pins.

Figure 54 – Pinning RSX212L to frame in a ground-stack array

- Select desired splay angle and locked position using rear rigging arm of the frame.

Figure 55-57 – Rear rigging of RSX212L to frame in a ground-stack array

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- To attach additional RSX212L, pin in the tabs from the above module with attached pins from the below module.
- Select rear splay angle then locking position (2 holes up from splay angle).

Figure 58-59 – Adding additional RSX212L modules to a ground-stack array