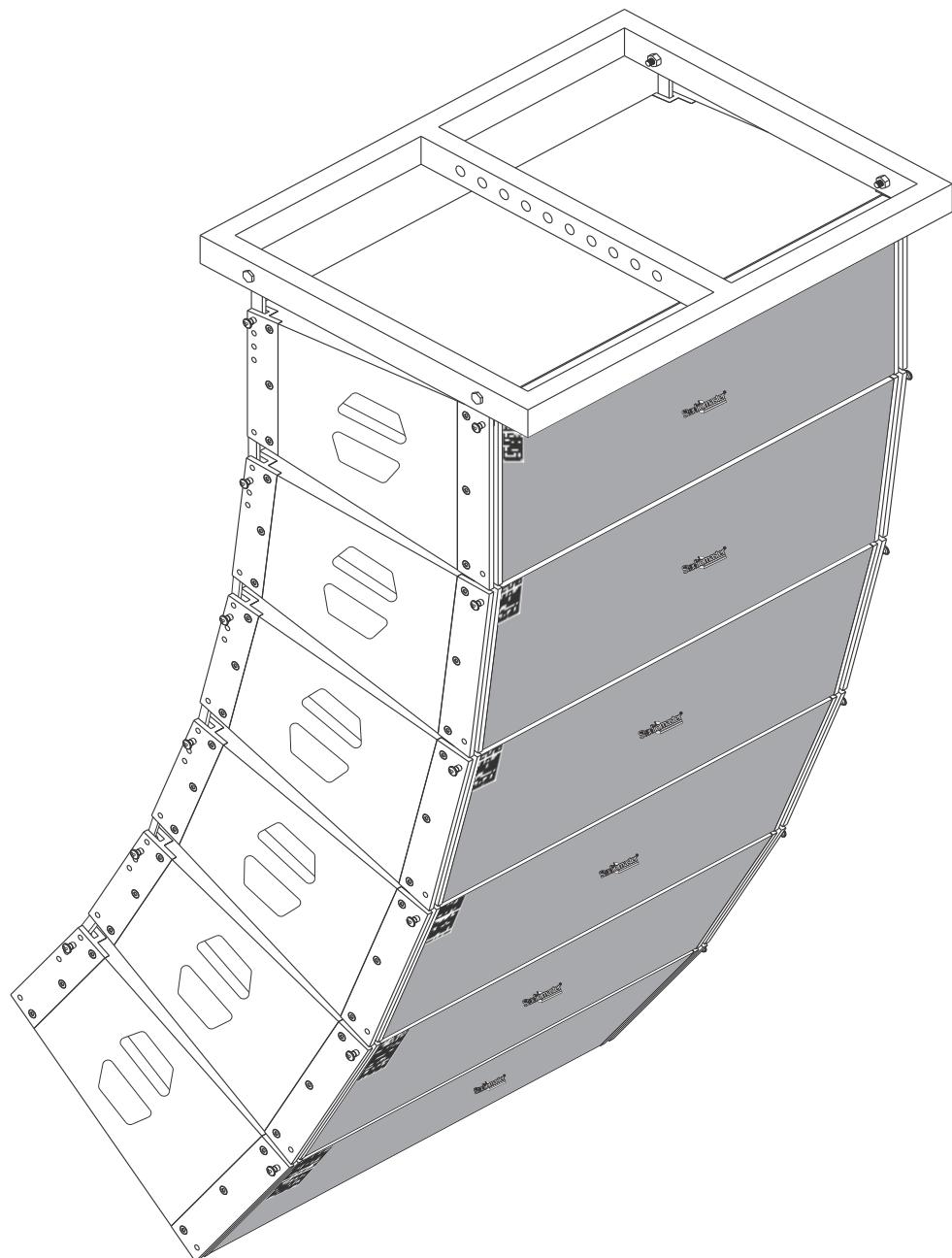




**Step into the amazing world of Active Line Array Systems
with Studiomaster Professional**



FIRE 90A - ACTIVE LINE ARRAY

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1. IMPORTANT NOTES

- Before connecting and using this product, please read this instruction manual carefully.
- Be sure to follow all the precautionary instructions in this section, which contain important warnings and/or cautions regarding safety.
- The manual is to be considered as integral part of this product and must accompany it when it changes ownership as a reference for correct installation and use as well as for the safety precautions.
- **Install in accordance with Studiomaster Professional's instructions and under the supervision of a licensed professional engineer only.**
- **Studiomaster Professional shall not assume any responsibility for the incorrect installation and/or use of this product.**

SAFETY SYMBOL AND MESSAGE CONVENTIONS

Safety symbols and messages described below are used in this manual to prevent bodily injury and property damage which could result from mishandling. Before operating your product, read this manual first and understand the safety symbols and messages so you are thoroughly aware of the potential safety hazards.

WARNING

Indicates a potentially hazardous situation which, if mishandled, could result in serious personal injury.

CAUTION

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

2. IMPORTANT SAFETY PRECAUTIONS

WARNING

1. Loudspeaker lines (amplifier outputs) can have sufficient high voltage to involve a risk of electrocution: never install or connect speakers when the line is alive.
2. Make sure all connections have been made correctly & speaker impedances are suitable for amplifier.
3. Protect speaker lines from damage; make sure they are positioned in a such way that they can not be stepped on or crushed by any object.
4. Make sure that no object or liquids can get in to the product as this may cause short circuit.
5. Never attempt to carry out any operations, modifications or repairs that are not expressly mentioned in this manual. Contact your authorized dealer or qualified personnel if any of the following occur:
 - The system does not function or works in anomalous way.
 - The cable has been damaged.
 - Objects or liquid have got in to unit.
 - The system has been damaged due to heavy impact or fire.
6. Before placing, installing, rigging, or suspending any speaker product, inspect all hardware, suspension, cabinets, transducers, brackets and associated equipment for damage.
7. Any missing, corroded, deformed, or non-load rated component could significantly reduce the strength of the installation, placement or array. Any such condition severely reduces the safety of the installation and should be immediately corrected.
8. **Use only recommended hardware, brackets, joining plates, locking pins etc which are supplied with the unit for the installation.** Never exceed the rating of the hardware or equipment.
9. Avoid installing or mounting the unit in unstable locations, such as on a rickety table or a slanted surface. Doing so may result in the unit falling down and causing personal injury and/or property damage.
10. Refer all installation work to the dealer from whom the speaker was purchased. Installation for flying requires extensive technical knowledge and experience. The speaker may fall off if incorrectly installed, resulting in possible personal injury.

11. For Flying be sure to follow the instructions below. Otherwise, the suspension wires or belts may be off or snap & the speaker may fall off, causing personal injury.
 - Check to confirm that the suspension wires and belts are strong enough to withstand the speaker load.
 - The connectors of the suspension wires and belts must be securely linked with those of the speaker.
12. Install the unit only in a location that can structurally support the weight of the unit and the mounting bracket. Doing otherwise may result in the unit falling down and causing personal injury and/or property damage.
13. Owing to the unit's size and weight, be sure that two or more persons are available to install the unit. Failure to do so could result in personal injury.
14. Do not use other methods than specified to mount the bracket. Extreme force is applied to the unit and the unit could fall off, possibly resulting in personal injuries.
15. Tighten each nut and bolt securely. Ensure that the bracket has no loose joints after installation to prevent accidents that could result in personal injury.
16. Do not mount the unit in locations exposed to constant vibration. The mounting bracket can be damaged by excessive vibration, potentially causing the unit to fall, which could result in personal injury.

CAUTION

1. Do not operate the unit for an extended period of time with the sound distorting. This is an indication of a malfunction, which in turn can cause heat to generate and result in a fire.
2. Do not stand or sit on, nor hang down from the unit as this may cause it to fall down or drop, resulting in personal injury and/or property damage.
3. Should the unit emit any strange odours or smoke, remove it from line after having the amplifier switched off.
4. Exposure to high sound levels can cause permanent hearing loss. The acoustic pressure level that leads to hearing loss is different from person to person and depends on the duration of exposure. To prevent it wear ear plugs or protective earphones.

3. INTRODUCTION

Studiomaster Professional enters the professional line-array domain with a system engineered to set new benchmarks in handling, flexibility, and operational efficiency, utilizing advanced technologies and high-grade materials. The FIRE 90A has been designed for ease of understanding, straightforward operation, and rapid rigging.

The FIRE 90A is a dedicated loudspeaker module intended for use in vertical array configurations of variable quantities. These arrays are typically flown to achieve optimal sound coverage across designated listening areas. When multiple FIRE 90A modules are deployed together, they operate as a cohesive line array, providing constructive summation.

4. FEATURES

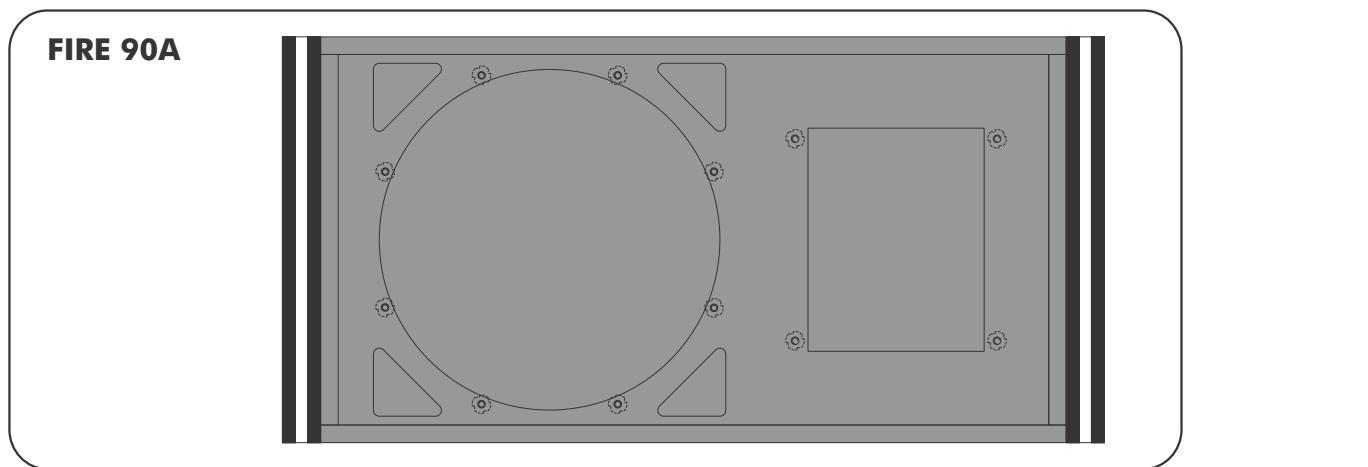
- High performance single 12"LF & one High quality 2" HF transducers.
- Exceptional sound quality, powerful response & long throw.
- Easy DSP sound presets (Standard / Long Throw / Short Throw / Monitor).
- Remote control through RS485 network cable (CAT5e or above) using PC in daisy chain. This enables in-depth editing of EQ, dynamics and crossover filters for each amplifier on each line array cabinet.
- Balanced XLR Line Input.
- Balanced XLR Link Out for daisy chain connection for program input.
- Mains supply through Power-con in/out connectors for daisy chain connection.
- High grade & durable cabinet design.
- Easy carry handles & heavy duty protective grille.
- Fast, integral rigging system with variable splay angles.
- Constant Curvature waveguide for unprecedented array coherence.
- Coverage Pattern: 120 degree x 9 degree nominal (Horizontal x Vertical), single unit.
- Extra textured anti-scratch paint finish.
- High-quality passive crossover network for maximum reliability.

FIRE 90A System Consists of:

- 600 watts line array speaker.
- Fly bar & rigging hardware kit.

Enclosure Features:

The FIRE 90A incorporates 1 x 12" Mid-Bass transducers & 1 x 2" High Quality HF transducers with state of the art Waveguide horn, all comprised into a sleek enclosure. This Array module has a horizontal coverage angle of 120° & vertical Coverage angle of 9°.

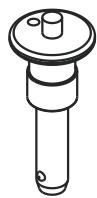


About Waveguides:

Sound Waves in open space propagate in all directions, this way they lose their power significantly. In order to counter this problem the FIRE 90A incorporates waveguide driver to ensure maximum control on power & dispersion. This ensures pure performance and negates the possibilities of phase cancellations.



Enclosure hardware:

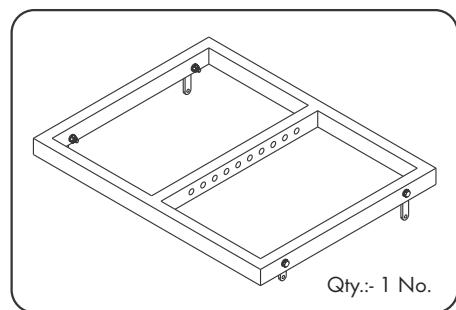


Qty.: 4 Nos. (Speaker Cabinet Packing)

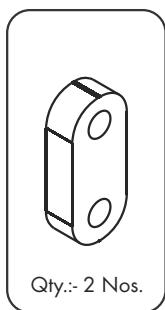
LOCKING PIN 21MM



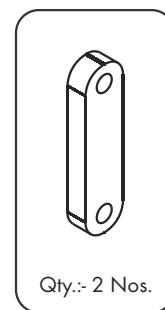
FIRE 90A Kit: The FIRE 90A Kit is set of essential hardware required for rigging flying this line array system. It consists of ultra durable Flybars / Array Frames & Quick Release Pins (Push-Pull Bullets). This kit makes flying the FIRE 90A easy.



FLY BAR / RIGGING FRAME
(MSSBML18)



INNER JOINING
PLATE (SMALL)



INNER JOINING
PLATE (BIG)

Note: Flybar & rigging hardware is not part of enclosure hence it need to be ordered separately as per requirement.

Advantages of using the FIRE 90A line array:

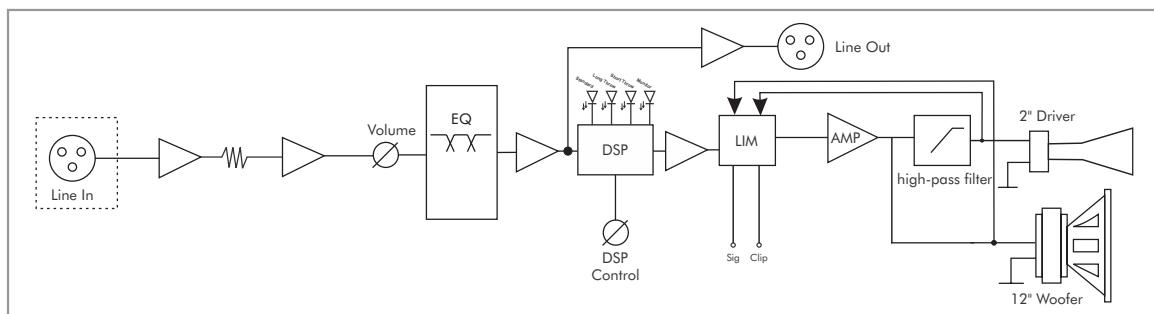
Studiomaster Professional FIRE 90A has several advantages over the horizontally stacked speaker systems normally used for covering large events. These are:

- Higher direct to reverberant ratio due to directional nature of the system and therefore better intelligibility.
- Increased feedback rejection due to increased directionality in vertical plane and therefore more acoustic gain available.
- Frequency response is uniform over the coverage area.
- Because of increased HF throw of the system, need for delay stacks is eliminated or reduced.
- Even sound pressure level can be achieved over the entire listening area by proper articulation of the vertical array formed by FIRE 90A.
- More stage space available as FIRE 90A arrays are flown.

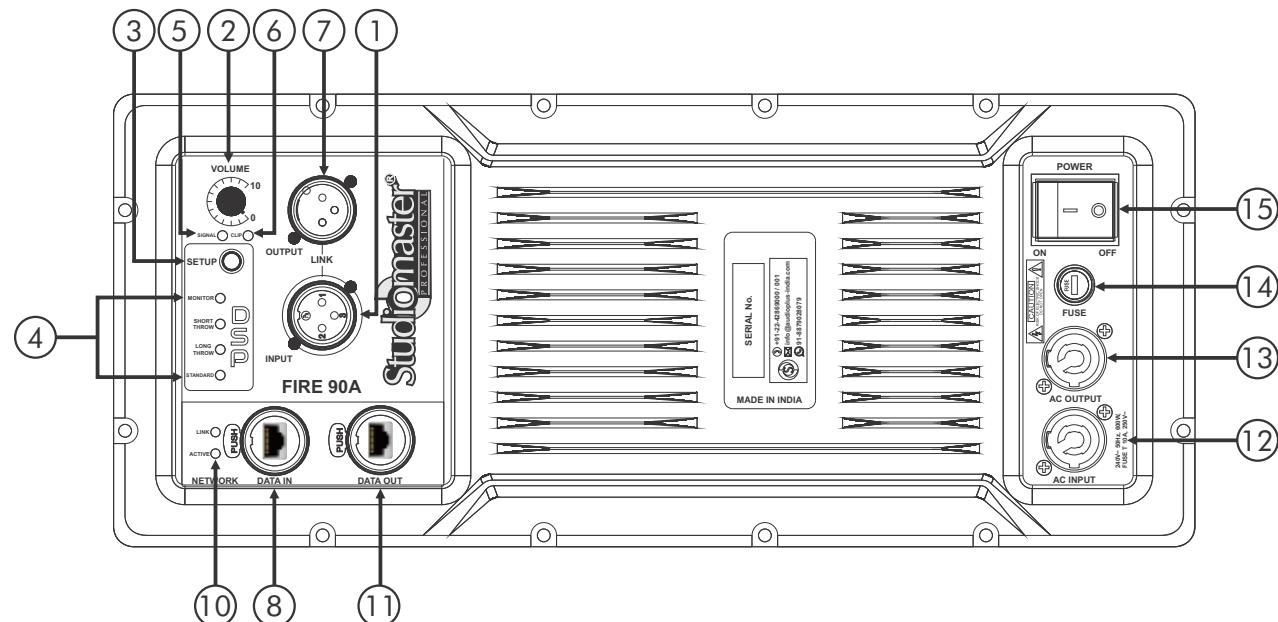
The FIRE 90A system can be configured in any of the following vertical formations:

- Straight Array - all modules are without tilt.
- Curved Array - upper modules are curved up towards ceiling and lower ones are curved down.
- J Array - upper modules are without any tilt and lower ones are curved down.
- Spiral Array - The topmost module/ modules is/ are without tilt and the subsequent modules have increasing tilt with the lowest having maximum tilt with varying splay angles 3°, 6°, 9°.

5. BLOCK DIAGRAM



6. REAR PANEL & CONNECTION



1. Line In: This is an XLR input which supports line-level signals from various sources.

2. Level control: Use this rotary knob to control the volume level of the line input.

3. DSP Preset Switch: This switch helps to toggle between four different DSP modes which are Standard, Long Throw, Short Throw, Monitor.

4. DSP Preset LEDs: These LED switches indicate the selected DSP preset mode from the three DSP preset modes.

5. Signal LED: The Signal LED indicates the presence of audio signals at any of the connected inputs.

6. Clip LED: The Clip LED indicates clipping or distortion at any of the connected inputs.

7. Line Out: Use this balanced XLR output to connect/link to an additional speaker.

8. Data In: Use this port to connect the line array to a PC or Laptop, through an RJ45 cable. Please note that you will require an RJ45 to USB connector.

9. Link LED: This LED blinks when the line array is linked with a PC or Laptop.

10. Active LED: This LED glows when there are changes being made in the DSP through software app.

11. Data Out: Use this port to connect the line array to another line array when two or more speakers are cascaded.

12. AC Input: Connect the power cord only to a mains Input socket with a protective earthing connection. Kindly check and match the voltage requirement indicated on the rating plate of the unit.

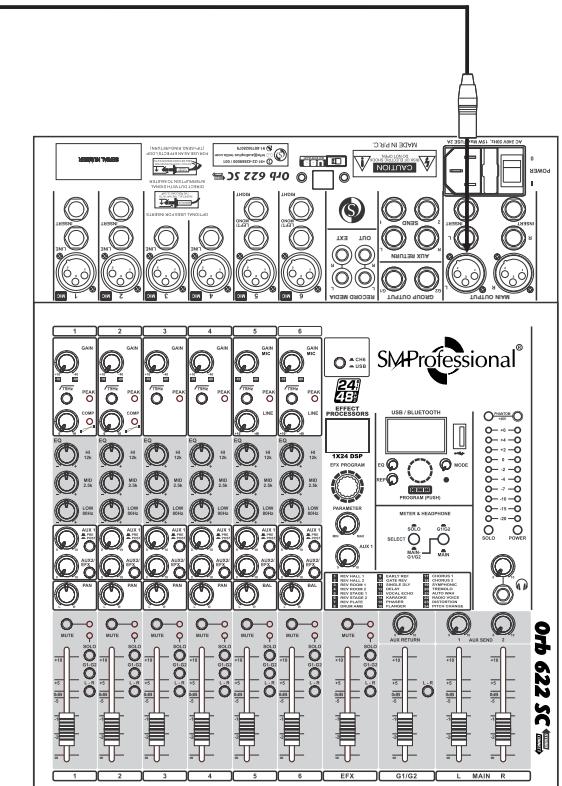
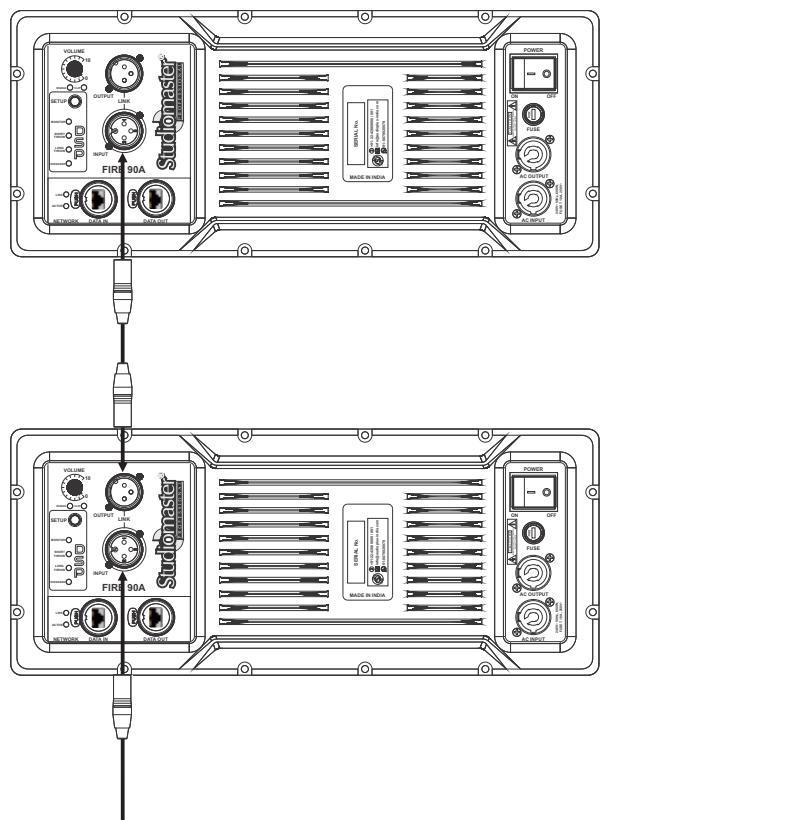
13. AC Output: When two or more speakers are to be cascaded, please connect the powercord to AC Output Socket and then to the input of the consecutive speaker.

14. Fuse: Contains the fuse that protects the speaker from power surges and electrical faults.

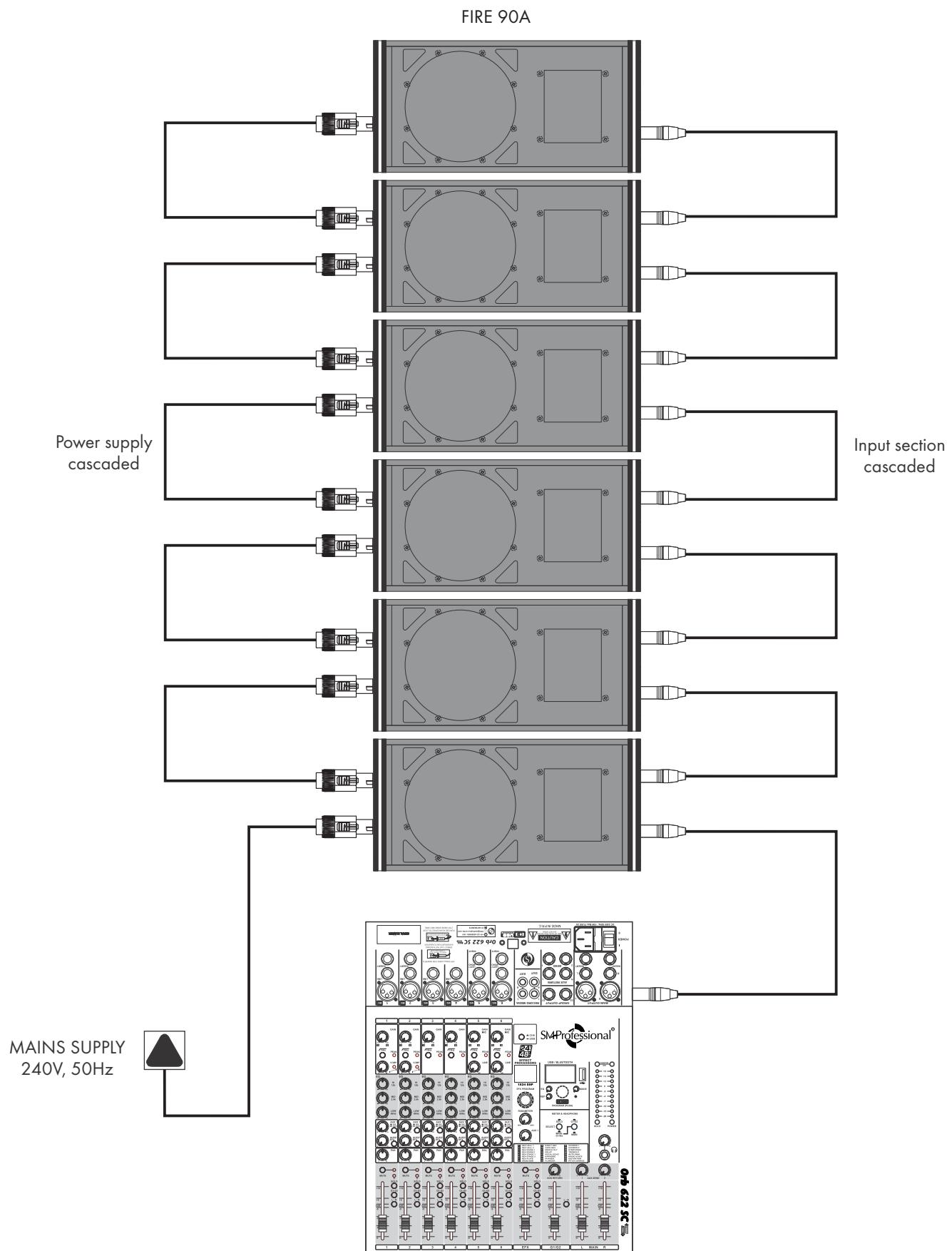
15. Switch: Use this switch to power the speaker ON or OFF.

7. SYSTEM SETUP & CONFIGURATION

Setup.



Configuration.



8. SOFTWARE CONTROL INSTRUCTIONS

Steps :

A-Series Line Array Remote Control Manual

1. Overview

Fire 90A line array loudspeakers are equipped with remote-access capability via daisy-chained RS485 data connections using RJ45 network cables (CAT5e or higher). This allows comprehensive configuration of each amplifier module, including:

- Equalisation (EQ)
- Dynamics processing
- Crossover filter adjustments

Remote control is managed through the FIRE 90A Control Editor software application.

2. Software Installation

2.1 Downloading the Software

- Navigate to the Studiomaster website, Go to Loudspeakers and then select Fire 90A from the drop down menu.
- Once the Fire90A product page opens up. Scroll down to the page navigation menu and select Downloads and then within the Downloads section, choose Software to access the available files.
- Download the file "FIRE 90A Control Editor.RAR" from the product page.

2.2 Extracting the Package

- Extract (unpack) the downloaded RAR file to your PC.
- Save the extracted folder containing **FIRE 90A Control Editor.exe** to a convenient directory.

2.3 Launching the Application

- Locate and double-click **FIRE 90A Control Editor.exe**.
- When prompted, select "YES" to allow the application to make changes to the PC.

This permission is required only for the software to operate correctly.

3. Initial Setup

3.1 Home Screen

Upon launching, the application will open to a blank Home screen.

- Select the "Quick Scan" tab to proceed to the device discovery interface.

4. Hardware Connections

4.1 Connecting the System

- Using a **USB-to-RS485 adaptor**, connect the PC to the first speaker in the line array.
- Daisy-chain additional speakers by connecting the **RS485 OUT** of one cabinet to the **RS485 IN** of the next. Use RJ45 network cables (CAT5e or higher) for all connections.

5. Establishing Communication

5.1 Detecting COM Ports

- Click **Refresh**.
- If the speaker system is properly connected, the corresponding interface will appear as *"USB Serial Port (COM)"**, where * represents the COM port number.

Note: Other COM ports may be listed for unrelated devices. Determining the correct COM port may require unplugging and reconnecting the line array to observe which port appears or disappears.

5.2 Device Discovery

- Select the correct COM port from the drop-down list.
- Click **DEVICE DISCOVERY** to initiate scanning for connected A-Series speakers.

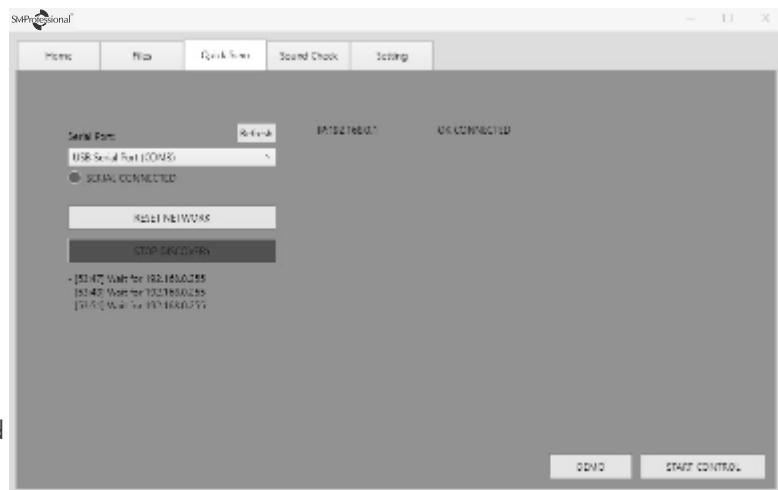
5.3 Start Control

When the discovery process is complete:

- Click **START CONTROL** located at the bottom-right of the window to begin remote operation of the speaker system.

6. Demonstration Mode

The software includes a **DEMO** mode, allowing users to explore the interface and available features without connecting any hardware.



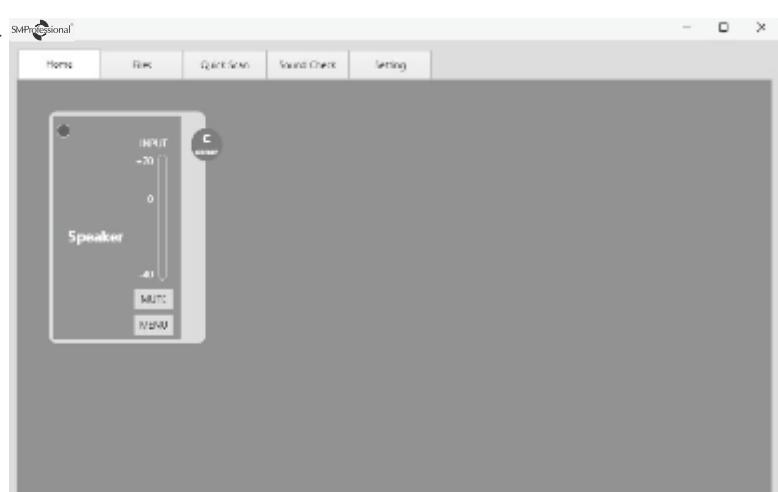
7. Control Interface Overview

7.1 Home Tab Layout

After selecting START CONTROL or DEMO, the application will return to the Home tab.

Any detected A-Series line array speakers will be displayed as floating device objects within the workspace.

- These objects may be clicked, dragged, and repositioned freely anywhere in the workspace to help organise or visualise the system layout.
- Each object represents an individual line array cabinet or subwoofer connected to the system.

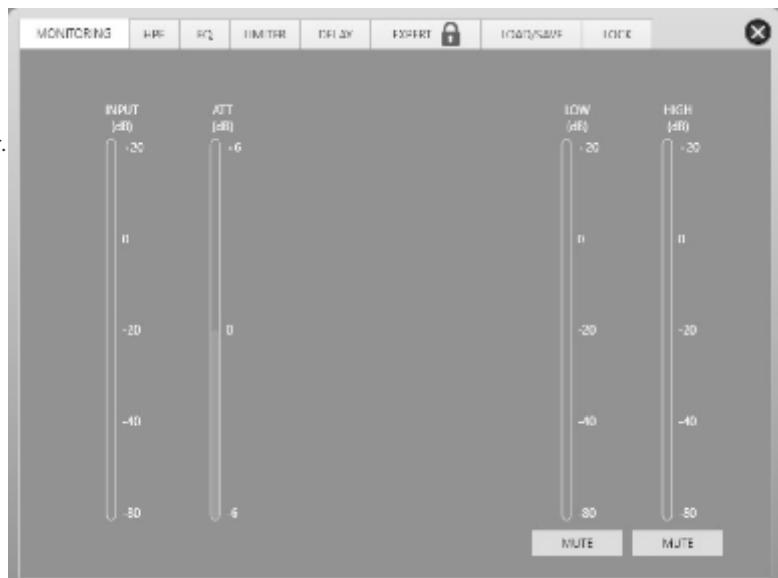


7.3. Group Assignment

- Each speaker can be assigned to a **Group (A–F)**.
- Grouping enables simplified control of multiple devices simultaneously and assists with system organisation during configuration.

7.3.2 Mute Function

- A MUTE button is available on each device object. This function is useful for identifying individual speakers during testing or troubleshooting by allowing selective silencing of cabinets within the array.



8. Monitoring Functions

8.1 Monitoring Tab Overview

The **MONITORING** tab provides a real-time status display for the selected speaker. This interface includes:

- High Frequency MUTE button
- Low Frequency MUTE button

These controls allow independent muting of the HF and LF amplifier sections for diagnostic or tuning purposes.

9. High Pass Filter (HPF) Settings

9.1 Overview

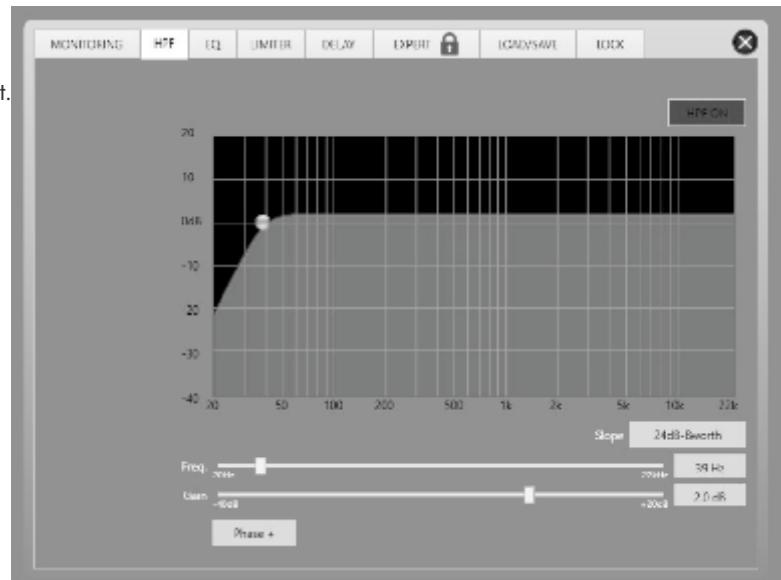
The **High Pass Filter (HPF)** tab provides control over the low-frequency cutoff applied to the selected array component. This filter prevents extremely low sub-bass content—beyond the physical capability of the cabinet—from being reproduced, ensuring cleaner output and protecting the driver.

9.2 Adjustable Parameters

The HPF tab includes the following user-configurable settings:

- **Filter Type:** Selectable filter algorithms (e.g., Butterworth, Linkwitz-Riley) to suit the system design requirements.

- **Cutoff Frequency:** Sets the frequency below which audio content is attenuated. This value should be matched appropriately to system design and crossover management.
- **Gain:** Allows fine-tuning of the output level at the filter stage to balance tonal characteristics.
- **Phase Switch:** Provides a selectable phase inversion control:
 - “+” = in-phase
 - “-” = inverted phase
 Phase adjustment may assist with alignment between array elements or between tops and Subwoofers.



10. Parametric Equalizer (EQ)

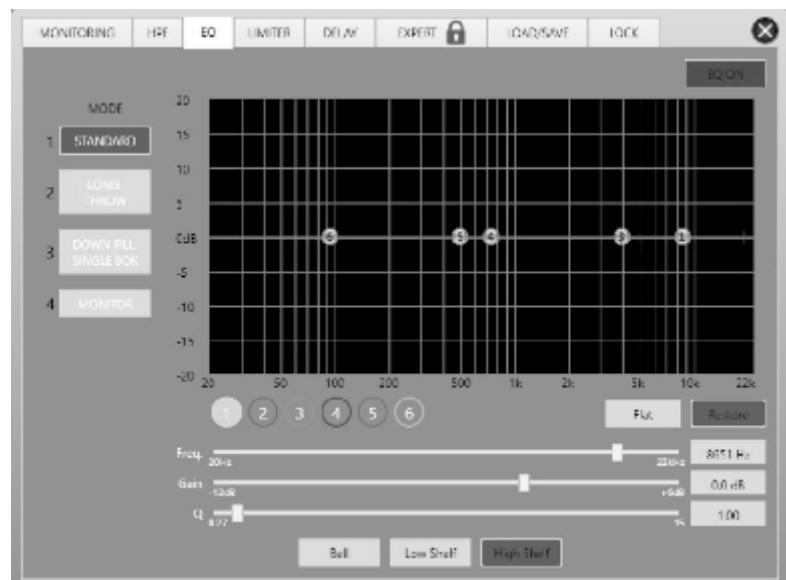
10.1 Overview

The next tab provides access to the 6-band Parametric Equalizer (EQ). This section allows precise tonal shaping of each speaker through fully adjustable filter parameters.

10.2 EQ Band Controls

Each of the six EQ bands can be individually edited by selecting the corresponding filter number. The following parameters are available for adjustment:

- **Frequency:** Sets the centre frequency of the selected band.
- **Gain:** Controls the level boost or attenuation at the selected frequency.
- **Q (Bandwidth/Resonance):** Adjusts the width of the filter curve, affecting how narrow or broad the frequency adjustment is.



10.3 Editing Methods: Filter settings may be adjusted using any of the following methods:

- Manipulating the **virtual sliders**
- Typing numerical values directly into the text fields
- Clicking and dragging the **EQ nodes** on the graphical display for intuitive control

10.4 Filter Type Options

Each EQ band can be configured as one of the following filter types:

- **Band-Pass (Bell)**
- **Low Shelf**
- **High Shelf**

These options are selectable from a row of buttons located beneath the parameter sliders.

10.5 Mode-Specific Settings

The EQ allows independent configurations for each **MODE (DSP profile)** stored within the speaker. Users can:

- Load and edit settings for any available DSP mode
- Restore default values
- Set all bands to flat response using the quick-action buttons beneath the EQ graphic display

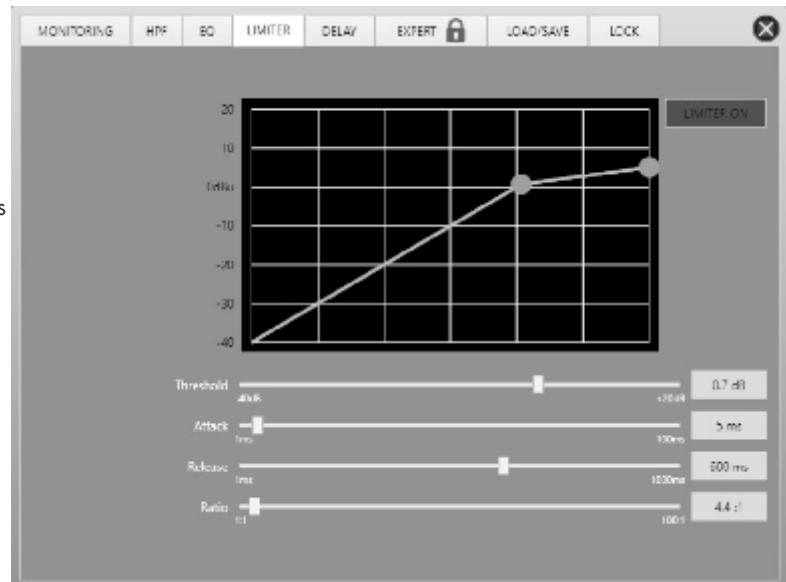
11. Limiter Settings

11.1 Overview

The next tab provides access to the **inbuilt Limiter**, which is designed to protect the speaker from overload by restricting the maximum audio signal level. Enabling the limiter ensures safe operation during high-level performance conditions.

11.2 Enabling the Limiter

- At the top of the limiter tab, a status button will indicate **"LIMITER OFF"** when the limiter is disabled.
- Click the same button to **enable** the limiter.
- Once enabled, the limiter becomes active and its parameters can be edited.



11.3 Adjustable Parameters

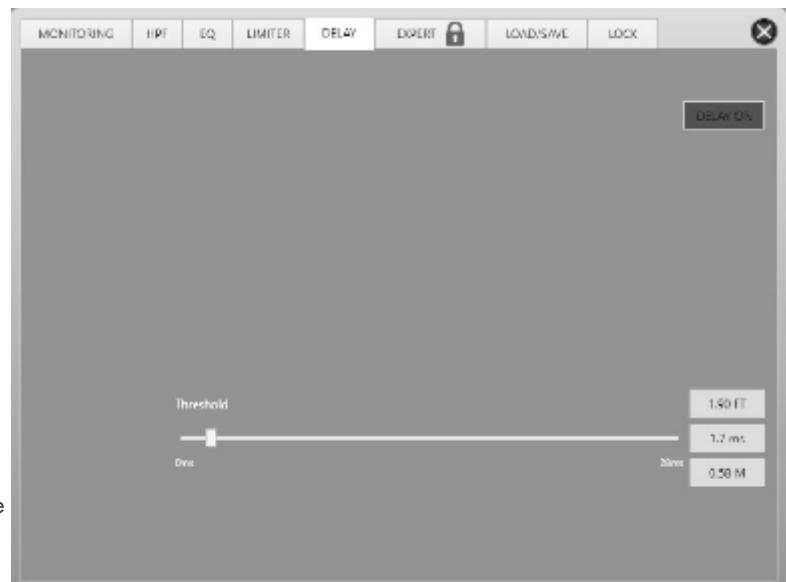
Limiter settings can be configured through several methods:

- Using the **virtual sliders**.
- Entering values **directly into the text input boxes**.
- Dragging the Threshold and Ratio control points on the graphical display.

The following parameters are available:

Threshold: Determines the maximum signal level before limiting occurs.

Ratio: Sets how aggressively the limiter reduces the level once the threshold is exceeded.



11.4 Attack and Release Adjustments

The limiter's **Attack** and **Release** times are also user-adjustable:

Adjust via **virtual sliders**, or Enter values manually into the corresponding text boxes. These settings allow precise control of how quickly the limiter responds to peaks and how smoothly it returns to normal gain levels.

12. Delay Settings

12.1 Overview

The **DELAY** tab provides control over time-alignment settings for the selected speaker. Delay is typically applied when multiple speaker stacks or arrays are positioned at different physical distances from the audience or from one another. Correct delay alignment ensures coherent sound arrival and optimal system performance.

12.2 Adjustable Delay Controls

Delay can be set using any of the following input methods:

- **Virtual Slider:** Adjust delay time smoothly using a single on-screen slider.
- **Direct Value Entry:** Type values manually into the text boxes provided.

12.3 Measurement Units

Delay values may be entered using any of the following units:

- **Feet (FT):** Distance-based delay entry
- **Milliseconds (ms):** Time-based delay entry
- **Metres (M):** Distance-based delay entry

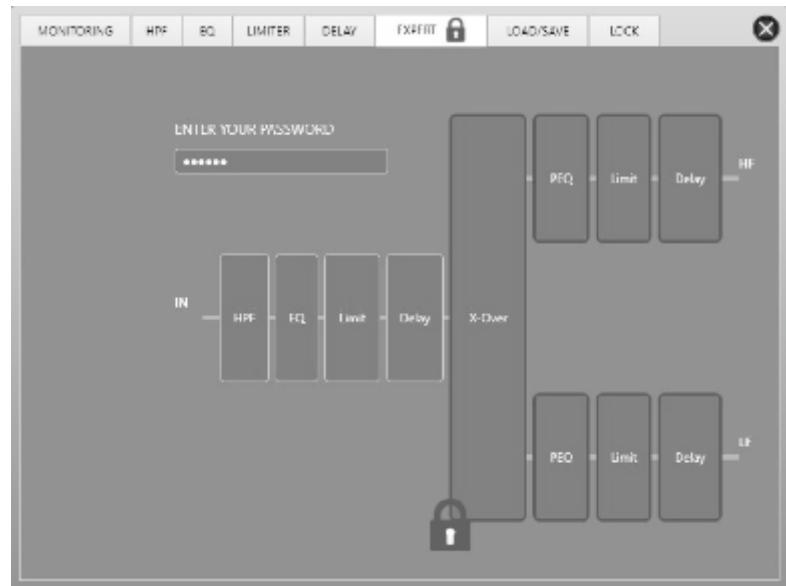
The software automatically calculates and synchronises equivalent values across units.

13. Expert Mode

13.1 Overview

The EXPERT tab provides an advanced, graphical block diagram representing the complete signal flow within the speaker. This view

enables direct access to various processing stages and allows experienced users or installers to review and adjust system architecture.



13.2 Signal Flow Blocks

The block diagram displays all major processing stages, including the four previously described sections for signal input:

- High Pass Filter
- Equalizer
- Limiter
- Delay

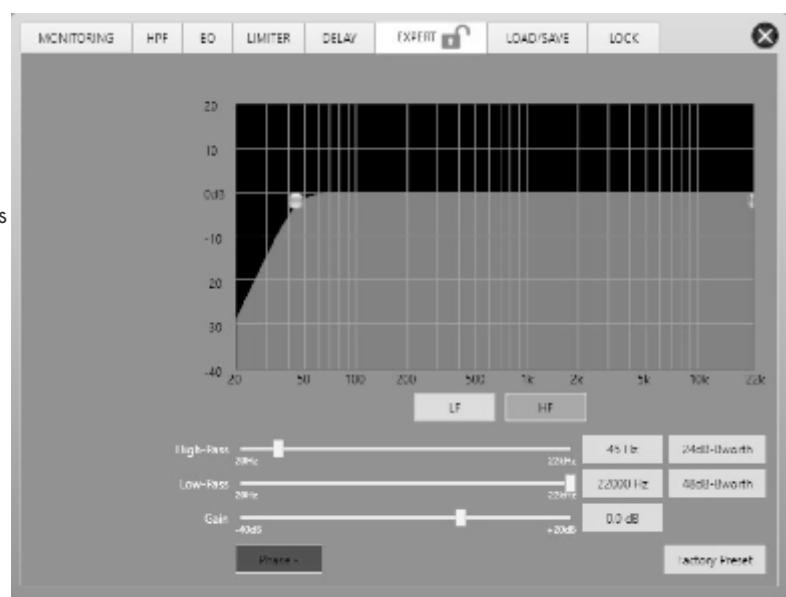
Any of these sections can be re-opened for editing by clicking the corresponding block on the diagram.

13.3 Crossover and System Processor Access

Also displayed within the Expert tab are:

- System Crossover (Sub Filter)
- Subsequent processing modules

These can also be accessed by clicking directly on their respective blocks. To ensure system integrity, certain sections may be **installer-locked**, preventing unauthorized adjustments to critical system parameters. When locked, the system will prompt for a password.



14. Driver Filter Configuration

14.1 Overview

Within the Expert tab, a switchable graphic display allows viewing and editing of the signal paths for both the **High-Frequency (HF)** and **Low-Frequency (LF)** drivers (tweeter/woofer) in the speaker. This interface provides detailed control over the individual filtering applied to each driver.

14.2 Filter Types

Depending on the driver selected (HF or LF), the display shows the relevant filter sections, which may include:

- High-Pass Filters
- Low-Pass Filters
- Band-Pass or Shelving Modes (as applicable to the driver's role)

Each filter section displays the following adjustable parameters:

- Filter Type
- Cutoff Frequency
- Gain Level

14.3 Editing Methods

All displayed parameters can be adjusted using any of the following methods:

- Manipulating the **virtual sliders**
- Entering numerical values directly into the **text fields**
- Clicking and dragging the **control points** on the graphic display for intuitive real-time editing

This interface provides advanced tuning capability for precise driver alignment and optimal performance of the array element.

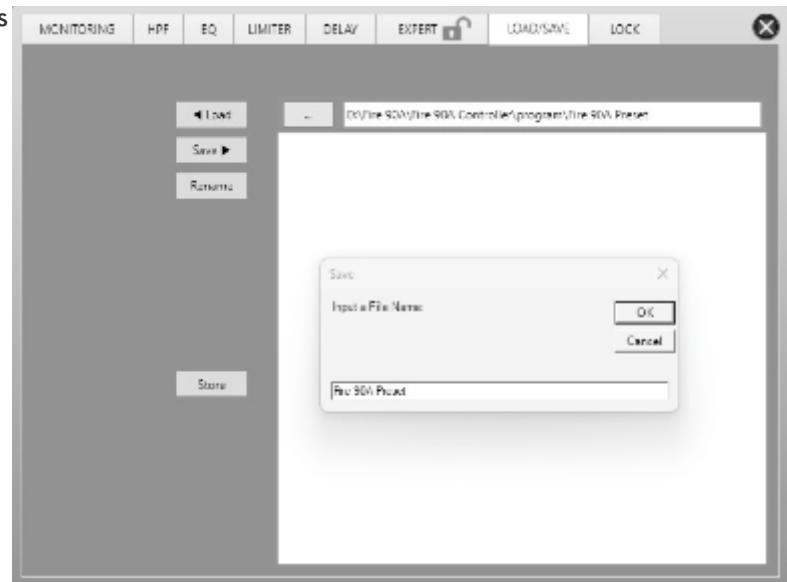
15. Output Path Configuration and Saving Settings

15.1 Output Path Overview

After configuring the crossover settings for the **Low-Frequency (LF)** and **High-Frequency (HF)** components in the EXPERT tab, each output path is displayed with individual blocks for:

- **Parametric EQ (PEQ)**
- **Limiter (LIMIT)**
- **Delay (DELAY)**

These blocks represent the processing applied to each driver output within the speaker.



15.2 Adjusting Output Path Parameters

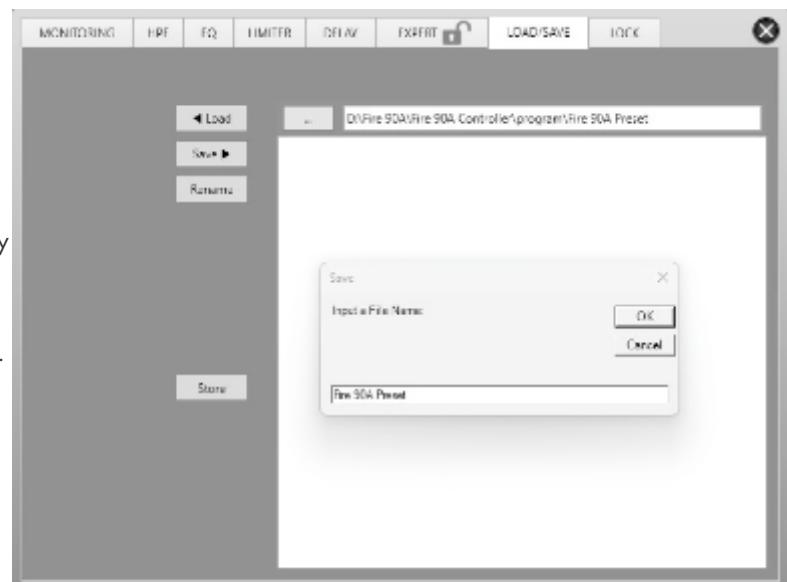
Output path parameters can be adjusted in the same way as the input signal sections:

- Using **virtual sliders**
- Entering values directly into text boxes
- Dragging points on the **graphical interface**

All adjustments allow precise tuning of the LF and HF outputs to achieve optimal performance.

15.3 Monitoring Speaker Performance

- After completing adjustments, it is recommended to return to the **MONITORING** tab.
- Verify that the speaker drivers and amplifier are operating within safe limits and not overloading.
- Check for settings that may be overly restrictive, potentially causing the output to be quieter than intended.
- Using the inbuilt **Pink Noise Generator** (described in a later section) can assist in evaluating system performance.

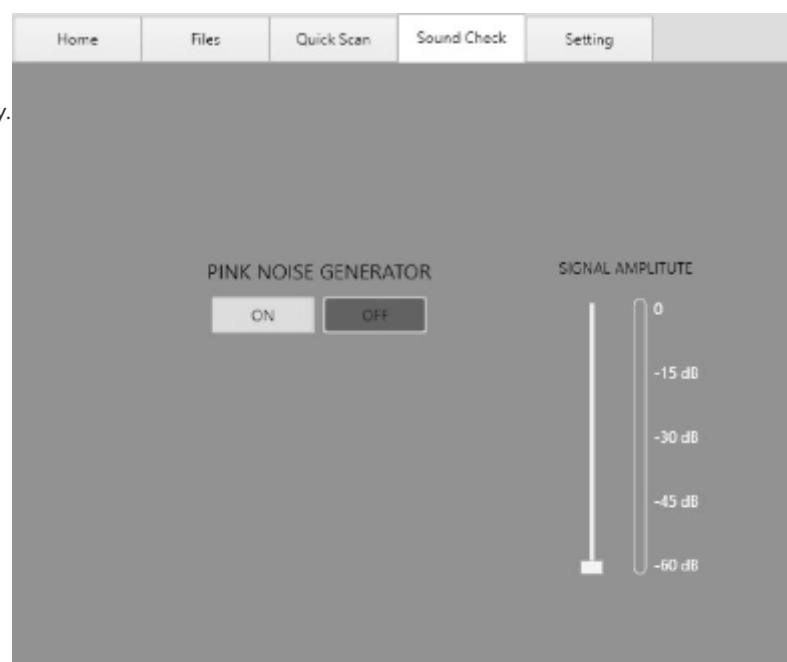


15.4 Saving and Loading Speaker Settings

Once all settings are finalized, the configuration can be saved to and loaded from the PC via the LOAD/SAVE tab:

- Click the **three dots (...)** to browse and select a save location on the PC.
- Click **Save**.
- Enter a descriptive **file name** for the speaker configuration.
- Click **OK** to confirm.

The configuration file is now saved in the chosen directory.



16. Returning to Home and Sound Check

16.1 Returning to the Home Tab

- Closing the menu window for a speaker returns the application to the **HOME** tab of the main menu.
- The Home tab provides an overview of all connected speakers and quick access to their floating objects for editing.

16.2 Sound Check Tab

The **SOUND CHECK** tab provides a **pink noise generator** for testing speaker output and system performance.

Purpose of Pink Noise:

Pink noise is a random mix of all audible frequencies, creating a consistent "hiss" and "rumble" that is ideal for speaker testing and system calibration.

Controls Available:

- SIGNAL AMPLITUDE Slider: Adjusts the output level of the pink noise.
- ON/OFF Switches: Enable or disable the pink noise generator.

Maximum Output:

The pink noise generator's maximum output is **0 dB (unity gain)**.

17. Settings Tab

17.1 Overview

The **SETTINGS** tab provides general software information, including:

- **Software Version:** Displays the currently installed version of the PC485 application.
- **Serial Port Connection Status:** Confirms whether a speaker is successfully connected to the PC and which COM port is in use.

18. Project Management

18.1 Saving a Full Project

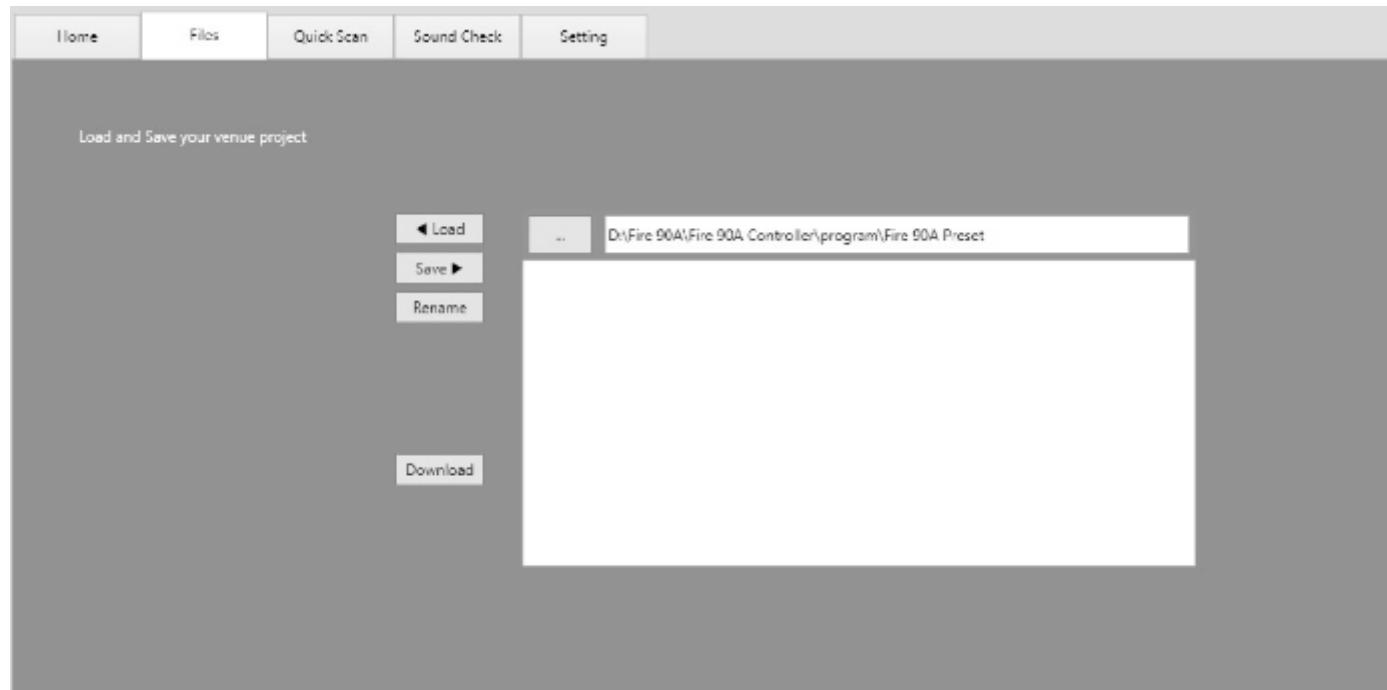
Once all individual speaker files have been finalized and saved, the complete set of configurations can be stored as a project for a specific venue or application.

- Navigate to the **FILES** tab in the main menu.
- The **project** can be **named** and saved to a preferred location on the PC.
- This allows the full system configuration to be **retrieved and loaded later** for the same venue, event, or application.

18.2 Loading a Project

Previously saved projects can be recalled from the **FILES** tab.

Select the desired project from the list and load it to restore all speaker and system settings simultaneously, ensuring quick and consistent setup.



9. INSTALLATION (FLYING)

9.1 General

Use Flybar for flying the Line Array speakers. With the use of the Fly bar, up to 6 Line Array speakers can be arranged in flying configuration. When joining two or more speakers, or joining the Fly bar and the speaker, use the Joining Plates supplied with the system.

The vertical directivity angle of the Line Array speaker is 9 degrees. The horizontal directivity angle is fixed at 120 degrees.

To transmit sound over long distances, you can adjust splay angles as 0, 3, 6 & 9 degrees. The splay angle can be adjusted by means of the Inter Joining Plates used to join the speakers. It is very easy to do by just quick release locking pins.

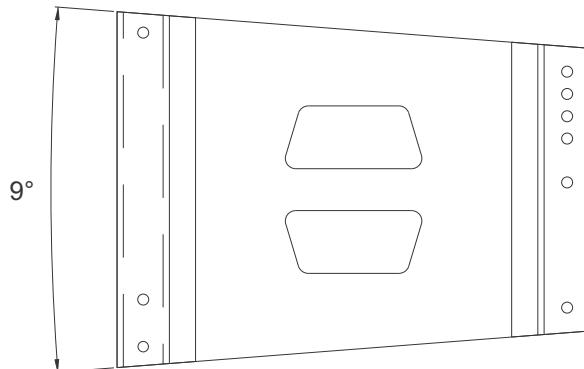
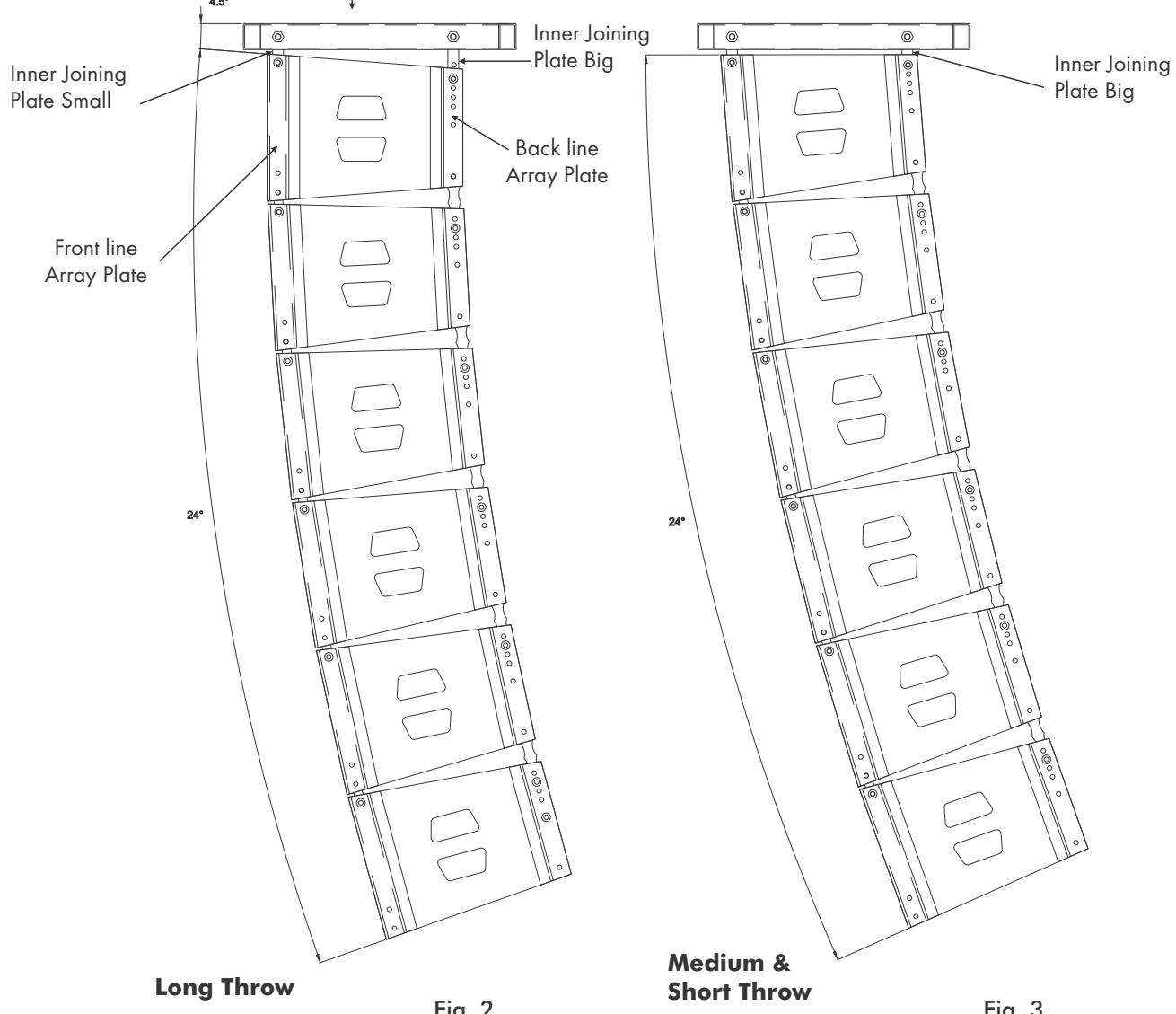


Fig. 1



Long Throw

Fig. 2

Medium & Short Throw

Fig. 3

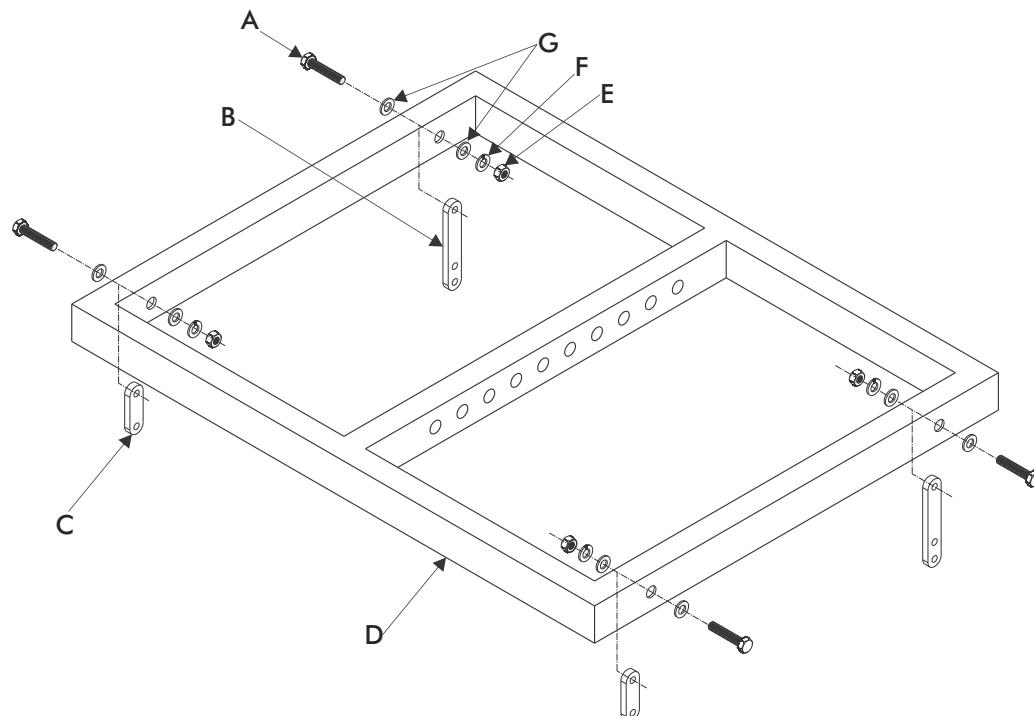
9.2 Fly bar Assembly



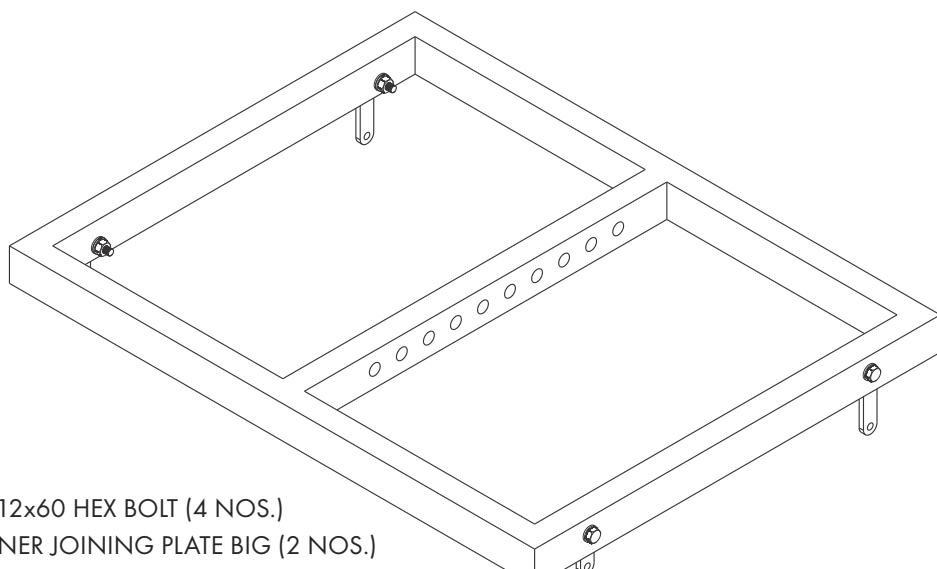
Use only shackle holes for suspension of array!

For assembling, refer to the figure & procedure below.

- Tighten 4 supplied M12X60 bolts with plain washers, spring washers and nut securely to fix inner joining plates (Big & Small) to the Fly bar.
- Fix Inner Joining Plate Small on front side & Inner Joining Plate Big on back side of fly bar. It gives 4.5° vertical inclination (downward).



MSSBML18 - FLYBAR / RIGGING FRAME OF LINE ARRAY (Including joining plates & hardware)



A :- M12x60 HEX BOLT (4 NOS.)

B :- INNER JOINING PLATE BIG (2 NOS.)

C :- INNER JOINING PLATE SMALL (2 NOS.)

D :- FLY BAR / RIGGING FRAME (1 NO.)

E :- M12x10 HEX NUT (4 NOS.)

F :- M12 SPRING WASHER (4 NOS.)

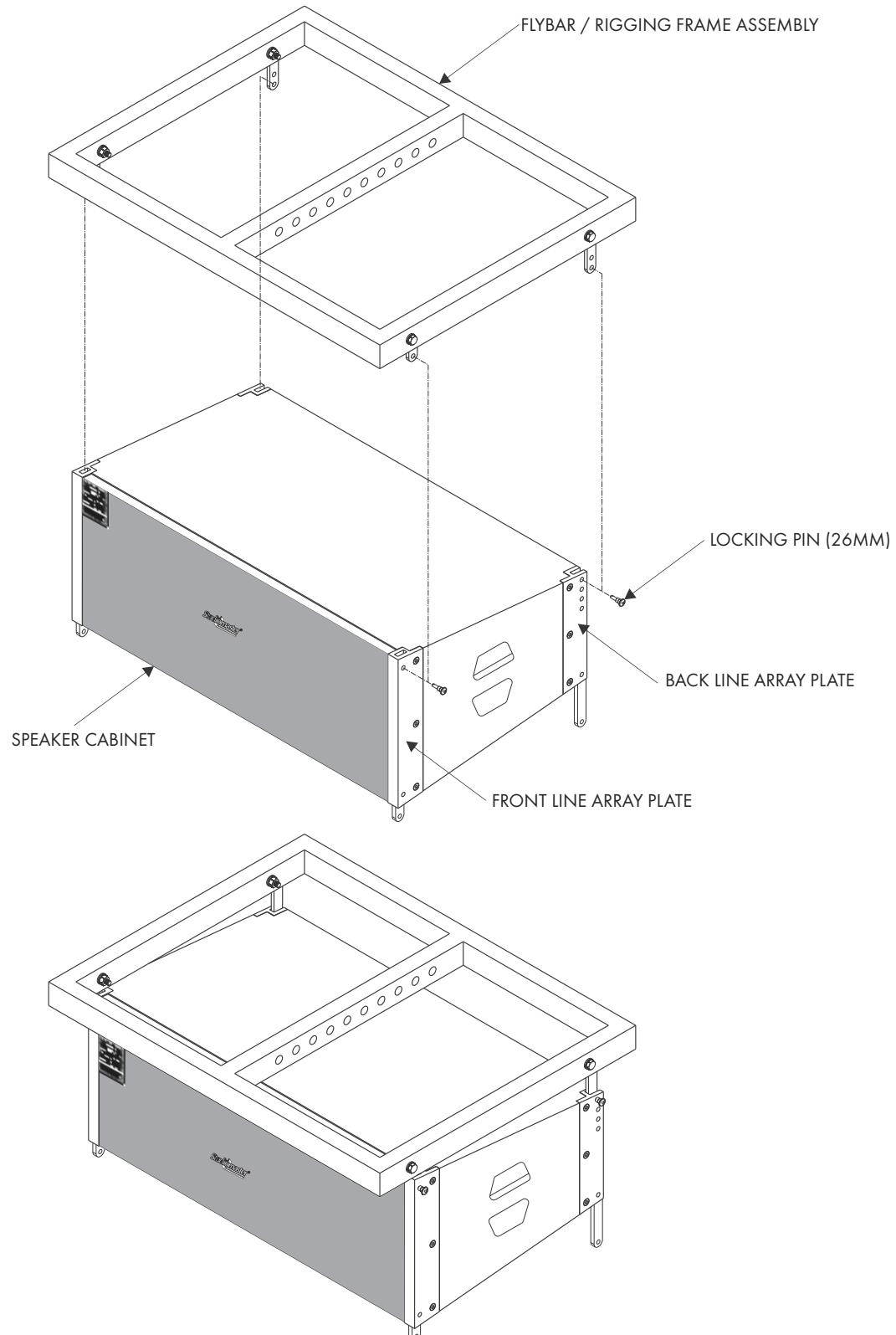
G :- M12 PLAIN WASHER (8 NOS.)

Note: We will get flybar assembled with all rigging hardware from supplier.

9.3 Joining the Enclosure to the Fly bar / Rigging Frame

Follow the procedure below to mount the enclosure to the Flybar, as shown in the assembly diagrams below.

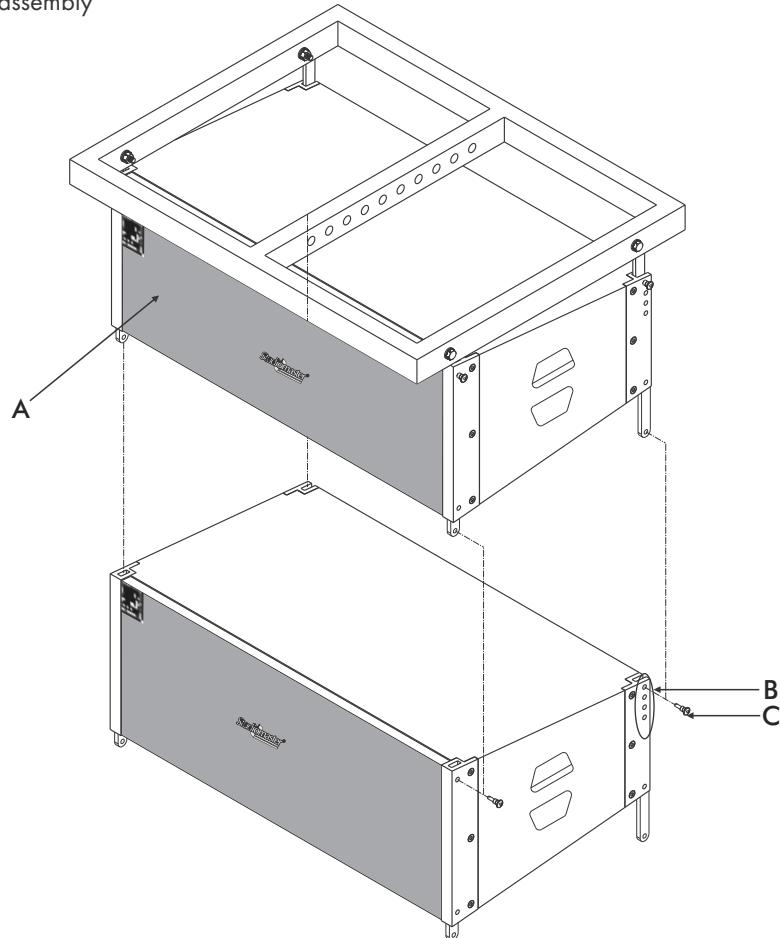
- Use Flybar / rigging frame assembly as mentioned in 8.2.
- Place speaker box in line with Flybar / rigging frame assembly
- Please ensure that speaker direction is correct ("Studiomaster Professional" Logo on bottom side).
- Insert Inner Joining Plates to line array plates (front & back) of speaker box as shown in figure below.
- Fix quick release 21mm Locking Pin .



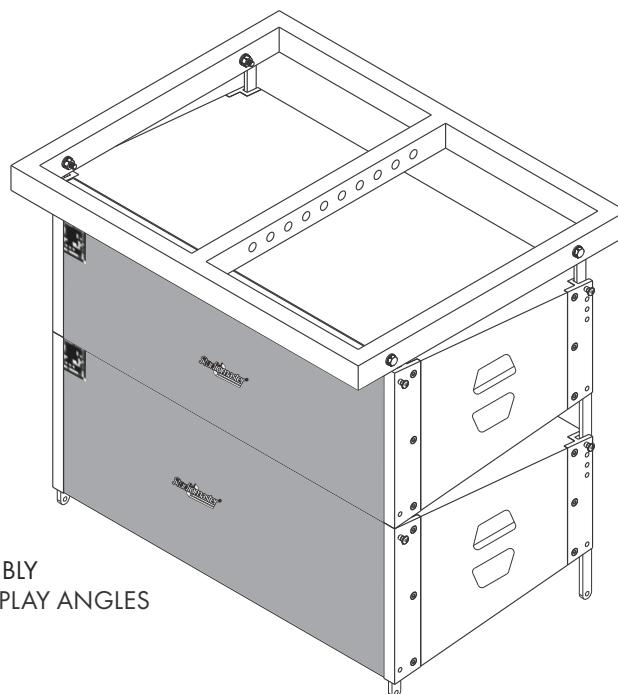
9.4 Joining Enclosures

Follow the procedure below to mount the enclosure to the Flybar as shown in the assembly diagrams below.

- Use Finished speaker cabinet assembly as mentioned in 8.3
- Align lower speaker as shown in drawing below.
- Please ensure that lower speaker direction is correct ("Studiomaster Professional" Logo on bottom side).
- Now fix quick release 21mm Locking Pin to joining plates of lower speaker box . You can adjust Splay Angles 0 , 3 , 6 & 9 as shown in the below assembly



FINISHED JOINING ENCLOSURES ASSEMBLY DIAGRAM



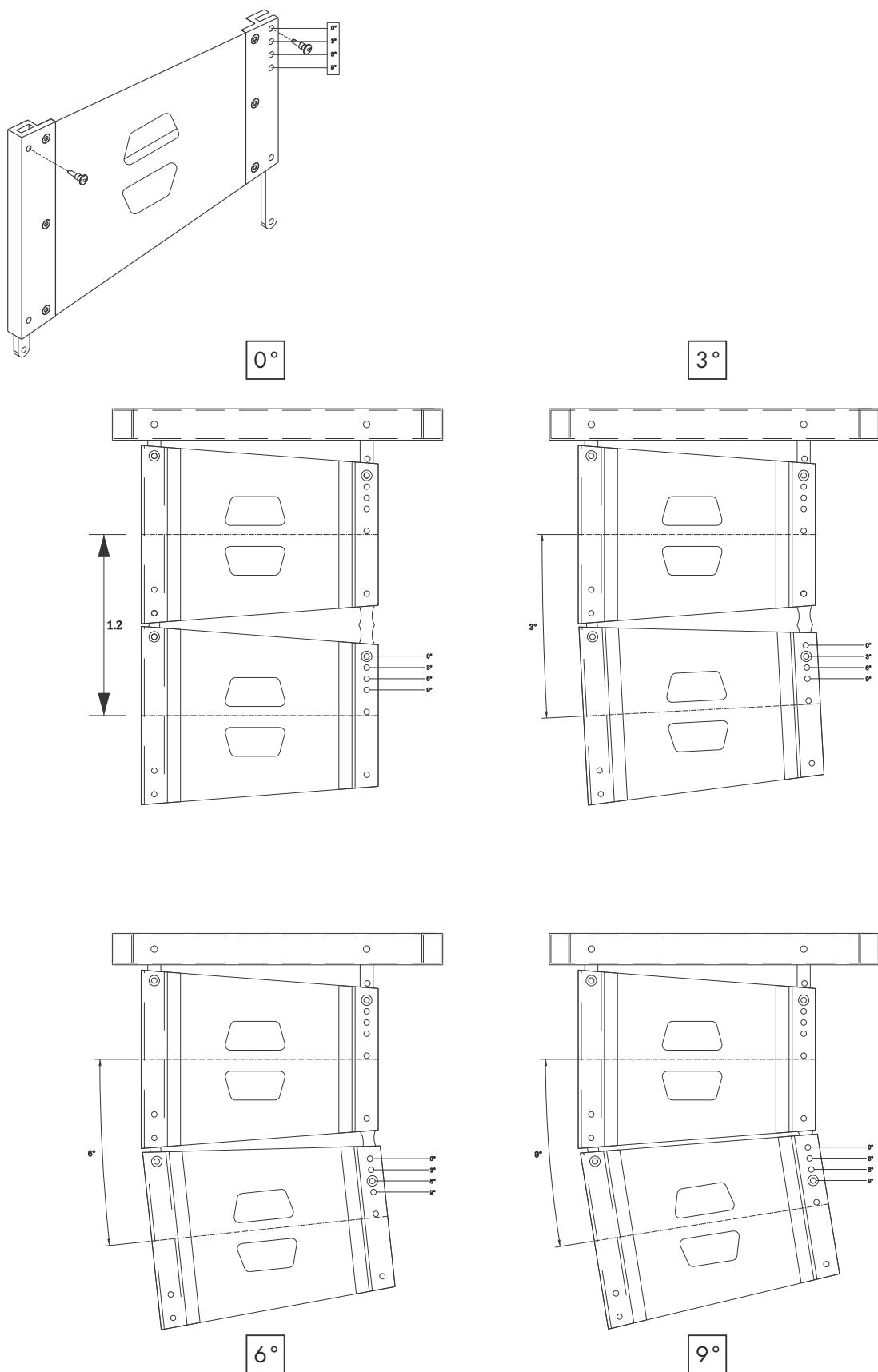
A:- SPEAKER CABINET ASSEMBLY

B:- ADJUSTABLE HOLES FOR SPLAY ANGLES

C:- LOCKING PIN (4 NOS.)

9.5 Variable Splay Angle adjustment

Splay angle can be adjusted using Joining plate holes as shown below.



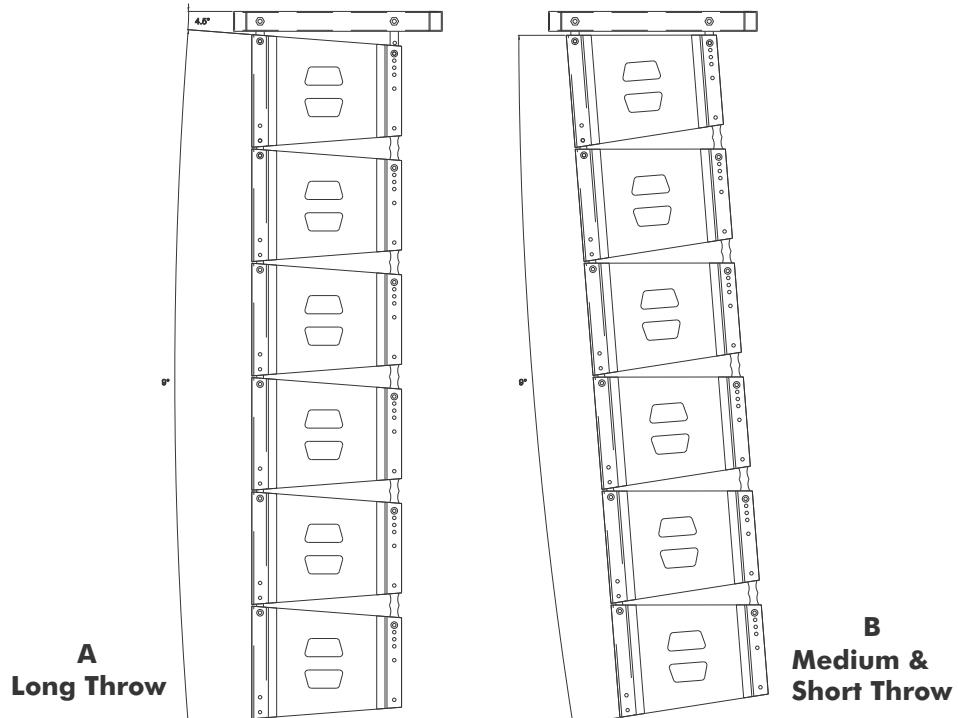
10. VERTICAL DIRECTIVITY (COVERAGE AREA)

With different Splay angles we can cover required area. The overlapping angle can be adjusted by means of the combination of different splay angles using holes on line array as explained in point 8.5. The horizontal directivity angle is fixed at 120 degrees. Please see below different coverage areas.

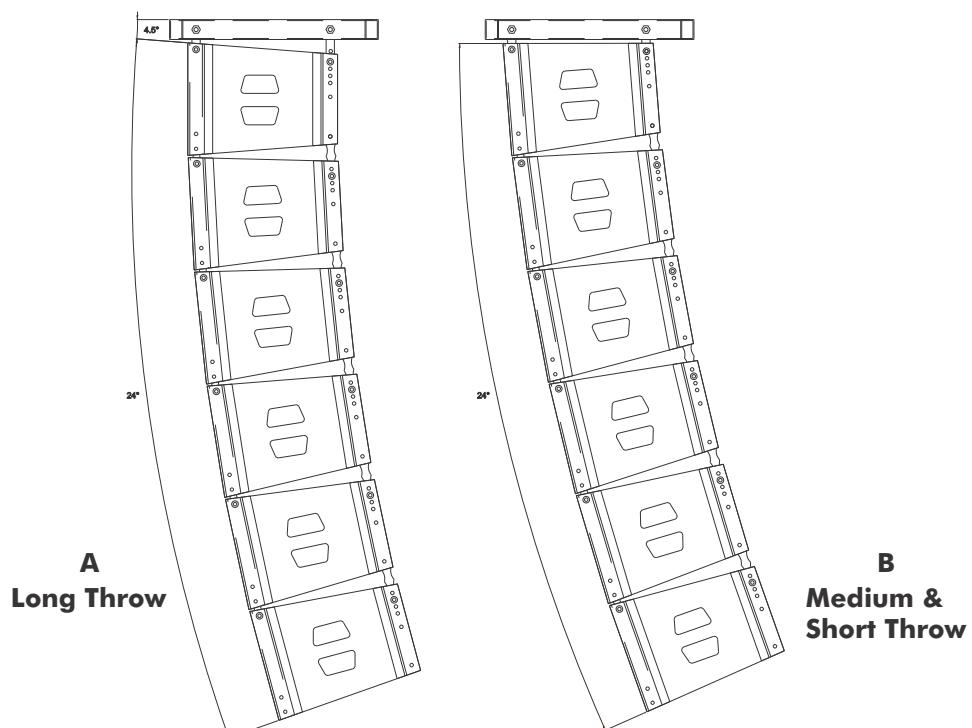
In below configuration of each splay angle,

1. **Configuration A** - First speaker is at 4.5° inclination w.r.t. fly bar which is to be used for long throw. On front, small joining plate are used & on rear big joining plate are used.
2. **Configuration B** - Front speaker is parallel to fly bar. This configuration can be used for medium & short throw. On front, small & on rear big joining plate are used

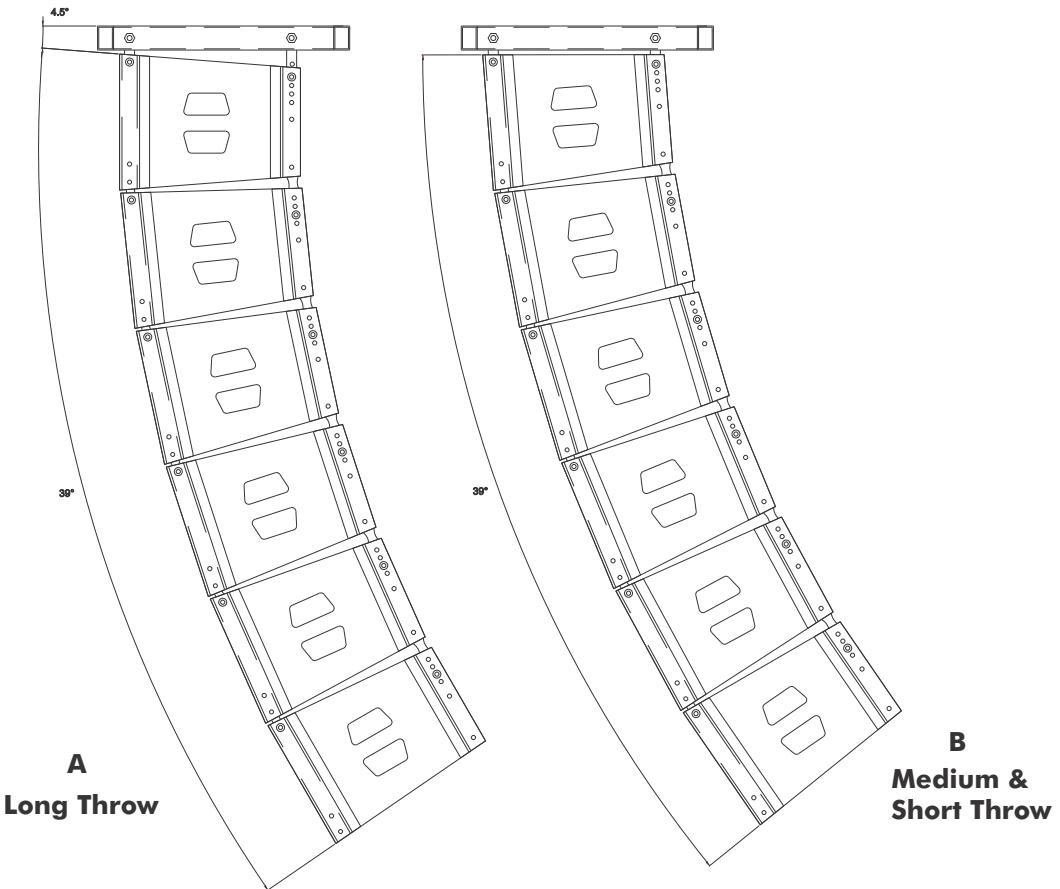
1. All enclosures fitted with 0 deg splay angle – total vertical directivity 9° .



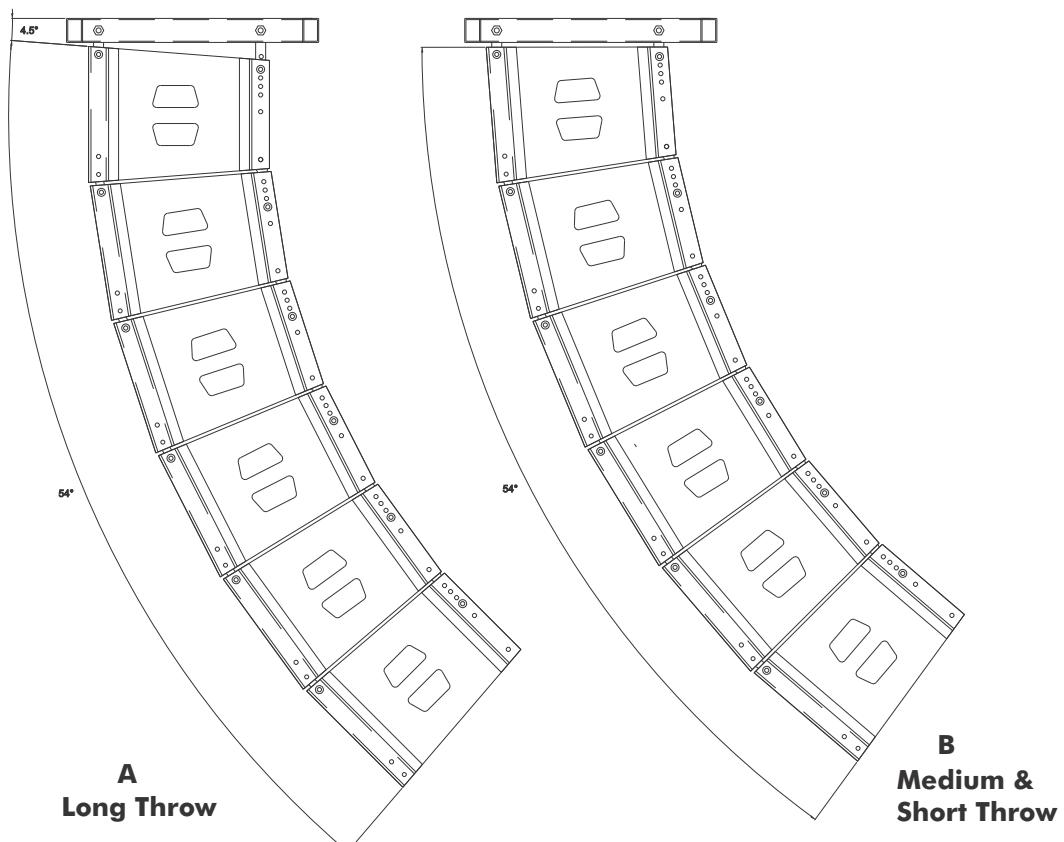
2. All enclosures fitted with 3 deg splay angle – total vertical directivity 24° .



3. All enclosures fitted with 6 deg splay angle – total vertical directivity 39°.



4. All enclosures fitted with 9 deg splay angle – total vertical directivity 54°.



11. NOTES ON FLYING

WARNING

- Check to confirm that the suspension wires, belts, construction of the ceiling, etc are strong enough to withstand the speaker load.
- Tighten each joint bolt to 300-350 kg-cm of torque securely. Be sure to use the joint bolts supplied with the speaker and the Flybar / Rigging frame.
- Up to 6 Line Array speakers can be arranged in flying configuration per one Flybar / Rigging frame. No more than 6 speakers can be arranged in flying configuration.
- Use a suspension point that provides the desired downward angle. The downward angle increases as the suspension point is moved backward.
- Use safety belts for further safety.

12. Technical Specifications:

Electrical Parameters	
System Type	2-Way Active
Frequency Range (-10 dB)	40-20 KHz
RMS Power	600W (LF=500 W + HF=100W)
Peak Power	1200W (LF=1000 W + HF=200W)
System Maximum SPL	128 dB
Sensitivity (1w @ 1m) dB	98dB LF / 100dB HF
Crossover Frequency	2000 Hz
Nominal Impedance	8 Ohm
Coverage Angles	
Horizontal Coverage Angle	120°
Vertical Coverage Angle	9°
Variable splay angles	0, 3, 6 & 9 deg C
Components	
LF Component (Powered by RCF)	1 x 12" Woofer
HF Component	1 x 2" Driver
Power supply	
Main Voltage	240V, 50Hz
Mechanical	
Enclosure	15 mm Plywood
Dimensions (L x W x H) mm	665 x 452 x 340
Net Weight (Kg)	36Kg

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