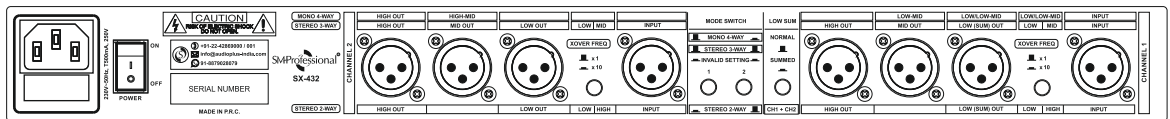
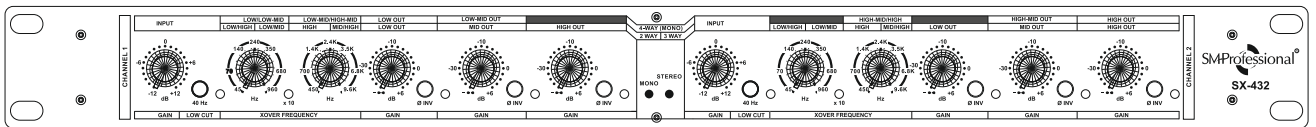


# SMProfessional®

## SX-432

2 Way / 3 Way / 4 Way Crossover



**Index:**

- 1.....Installation
- 2.....Introduction
- 3.....Feature at Glance
- 4.....Panel Description
- 5.....Operating Modes
- 6.....Set up Diagram
- 7.....Wiring Information
- 8.....Technical Specifications

## **Factory Repair Service maybe required in the following circumstances:**

- The Power supply cord or the plug has been damaged.
- If the product has been exposed to liquid spillage, rain or heavy moisture.
- If the product exhibits a change in performance & doesn't not operate properly.
- If the product is damaged due to it being dropped.

## **Beginner's Guide to Crossovers:**

- A Crossover is an electronic filter used to separate audio signals into frequency bands, thereby allowing greater control over the different frequency range.
- With an active crossover, you can separate the output signal of your mixer into different frequency ranges. Which enables you to control which signal portion will go to which amplifier/speakers. The SMProfessional SX-432 active crossover can either be run in 2- way Stereo mode, in 3-way Stereo mode or in 4 way Mono mode.

## **1. Installation**

### **Rack Mounting**

The crossover is built for 19" rack mounting. You can fix the crossover with four screws in the rack. While mounting the crossover into a rack, please make sure that there is a proper air circulation. Please make sure there is enough space around the device to ensure proper ventilation. Additionally the rack should be provided with a cooling fan.

### **Inputs**

Before connecting anything to the crossover, make sure it is not connected to any power source.

- Be sure that the source device (equalizer, compressor, mixing console, etc.) for the SX-432 Crossover is turned off. Connect the output(s) of the source device to the inputs of the crossover, following the rear panel markings carefully.
- Make sure that the amplifiers which will be used to drive your speaker system are turned off. Using the back panel markings as a guide, use high quality cables to connect the amplifiers to the appropriate outputs of the SX-432.
- After you have safely plugged in the crossover, turn on the source device(s). Turn the amplifiers outputs all the way down ( $-\infty$ ) and turn on the amplifiers. All of the elements of your sound system should now be on, and the amplifiers should be turned all the way down.
- Turn the source device to its nominal operating level, sending a nominal (average) level to the Crossover. Slowly turn up the amplifiers' outputs until you can hear signal at a comfortable volume. Make adjustments as you desire.

## **2. Introduction**

Thank you for purchasing the SMProfessional SX-432 Crossover.

To ensure maximum performance and safety, please follow this instruction manual carefully.

Please retain this manual for future reference.

For any complaint, feedback or testimonials please contact our Distributor / dealer.

## **3. Feature at Glance**

- Premium quality stereo 2-way/3-way/mono 4-way crossover.
- "Low Sum" function provides mono output & select normal (Stereo) or mono-summed for Low Frequency operation.
- Individual output Gain controls for all bands.
- Individual Phase reverse switches for instant phase Correction at the output, one switch per channel.
- Switchable 40 Hz Low cut filter that activates 40 Hz Butter worth, 12 dB/octave high-pass filter, one switch per channel.
- Balanced XLR connectors for all inputs and outputs.
- "X10" switch that multiplies crossover frequency range by 10, one switch per channel.
- Linkwitz - Riley, 24 dB / Octave, state-variable filter.
- Mode switch to select stereo / mono and 2/3/4-way operation.
- In-built AC inlet with on/off switch.



7. **MID OUTPUT** Control: In 3 Way stereo mode, Channel 1 control controls the output level of the Mid band from  $-\infty$  to +6 dB.

**LOW-MID OUTPUT** Control: In 4 Way Mono mode, Channel 1 control controls the output level of the Low-Mid band from  $-\infty$  to +6 dB.

**HIGH-MID OUTPUT** Control: In 4 Way Mono mode, Channel 2 control controls the output level of the Low-Mid band from  $-\infty$  to +6 dB.

8. **MID PHASE INVERT** Button: In 3 Way stereo mode, channel 1 button reverses the polarity of the Mid output.

**LOW-MID PHASE INVERT** Button: In 4 Way stereo mode, channel 2 button reverses the polarity of the Low-Mid output.

**HIGH-MID PHASE INVERT** Button: In 4 Way stereo mode, this button reverses the polarity of the High-Mid output.

⚠ **Note:** In 2 Way Stereo Mode, this button will not be in use.

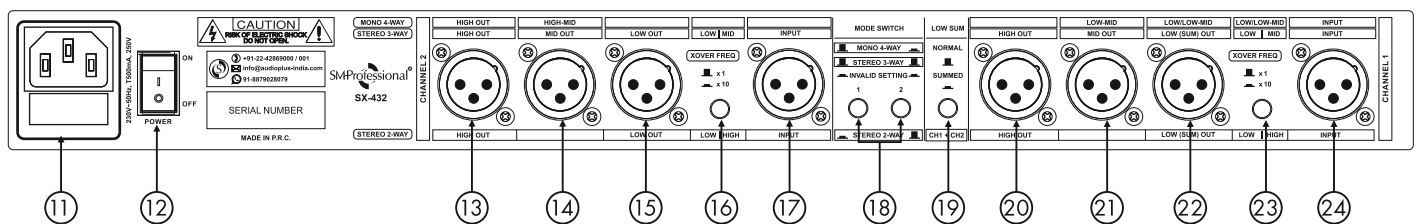
9. **HIGH OUTPUT** Control: In 2Way & 3 Way stereo mode, Controls the output level of the High band from  $-\infty$  to +6 dB.

**HIGH OUTPUT** Control: In 4 Way Mono mode, Channel 2 control Controls the output level of the High band from  $-\infty$  to +6 dB. and Channel 1 control will be unused.

10. **HIGH PHASE INVERT** Button: In 2Way & 3 Way stereo mode, this button reverses the polarity of the High output.

**HIGH PHASE INVERT** Button: In 4Way Mono mode, Channel 2 button reverses the polarity of the High output, Channel 1 button will be unused.

## Rear Panel Description



11. **MAINS INLET:** Use the supplied AC cord to connect the unit to AC mains. The fuse can be accessed by the small drawer at the AC inlet.

⚠ **To change the fuse, unplug the AC cord first, pull out the fuse drawer and replace the fuse ONLY with a fuse of same voltage and rating. If the fuse blows again after replacement, hand over the unit to qualified service personnel.**

12. **POWER ON SWITCH:** To switch ON/OFF the Crossover.

13. **HIGH OUTPUT** Connector: Channel 2 connector can be used to provide Output for the High band signal

14. **MID OUTPUT** Connector: In 3 Way Stereo Mode, Mid output is available from this connector.

**HIGH-MID OUTPUT** Connector: In 4 Way Mono Mode, High Mid Output is available from this connector

⚠ **Note:** In 2 Way Stereo Mode, this connector will not be in use.

15. **LOW (LF SUM) OUTPUT** Connector: Output for the Low band signal.

⚠ *Note: In 3 Way Stereo Mode & 4 Way Mono Mode, this connector will not be in use.*

16. **XOVER FREQ.** Button: This button serves to switch over the control range of the front-panel LOW/HIGH XOVER FREQ. control from 45 to 960 Hz or 450 Hz to 9.6 kHz.

⚠ *Note: In 3 Way Stereo Mode & 4 Way Mono Mode, this connector will not be in use.*

17. **INPUT** Connector: channel 2 Input signal connector.

⚠ *Note: In 4 Way Mono Mode, this connector will not be in use.*

18. **MODE Switch.** This two buttons are provided to select the different operating modes, please check complete details in Operating Modes section

19. **LOW SUM** button. In stereo mode, the two Low paths can be summed with the LOW SUM button and routed to the Low output of channel 1, which is particularly useful in systems using additional subwoofers.

⚠ *Note: In 4 Way Mono Mode, this Button will not be in use.*

20. **HIGH OUTPUT** Connector: In 2 Way & 3 Way Stereo Mode it is used to provide Output for the High band signal.

*Note: In 4 Way Mono Mode, this connector will not be in use.*

21. **MID OUTPUT** Connector: In 3 Way Stereo Mode, Mid output is available from this connector.

**LOW-MID OUTPUT** Connector: In 4 Way Mono Mode, Low Mid Output is available from this connector.

⚠ *Note: In 2 Way Stereo Mode, this connector will not be in use.*

22. **LOW (LF SUM) OUTPUT** Connector: Output for the Low band signal.

23. **XOVER FREQ.** Button: In 2 Way Stereo Mode, this button serves to switch over the control range of the front-panel LOW/HIGH XOVER FREQ. control from 45 to 960 Hz or 450 Hz to 9.6 kHz

**XOVER FREQ.** Button: In 3 Way Stereo Mode, this button serves to switch over the control range of the front-panel LOW/MID XOVER FREQ. control from 45 to 960 Hz or 450 Hz to 9.6 kHz









**XOVER FREQ.** Button: In 4 Way Stereo Mode, this button serves to switch over the control range of the front-panel LOW/LOW-MID XOVER FREQ. control from 45 to 960 Hz or 450 Hz to 9.6 kHz

24. **INPUT** Connector: Channel 1 Input Connector.

## 5. Operating Modes

SX-432 Crossover has three operating modes:

1. Stereo 2 Way Mode
2. Stereo 3 Way Mode
3. Mono 4 Way Mode

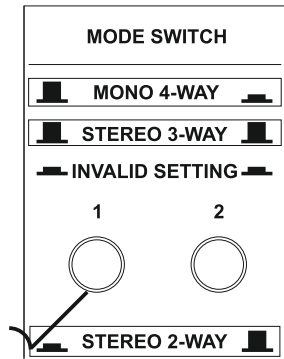
Mode	Mode Switch 1	Mode Switch 2
<b>Stereo 2 Way Mode</b>	Pressed 	Released 
<b>Stereo 3 Way Mode</b>	Released 	Released 
<b>Mono 4 Way Mode</b>	Released 	Pressed 
<b>Invalid Setting</b>	Pressed 	Pressed 

### 1. Stereo 2-way Mode

Select “**Stereo 2 Way Mode**” from rear panel as shown in figure with Tick Mark (✓).

The STEREO-LED on the front panel lights up showing which controls are active in Stereo 2 Way Mode.

The functions of these controls can be seen from the last strip label. In stereo mode, both channels perform the same functions.

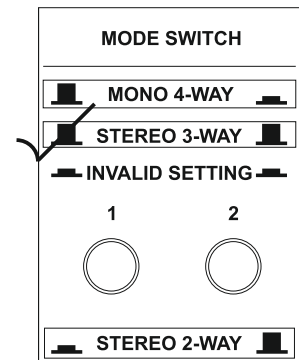


### 2. Stereo 3-way operation

Select “**Stereo 3 Way Mode**” from rear panel as shown in figure with Tick Mark (✓).

The STEREO-LED on the front panel, lights up indicating which controls are active in Stereo 3 Way Mode.

The functions of these controls can be seen from the second strip label. In stereo mode, both channels perform the same functions.

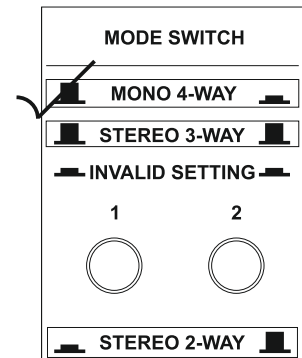


### 3. Mono 4-way operation

Select “**Mono 4 Way Mode**” from rear panel as shown in figure with Tick Mark (✓).

The MONO-LED on the front panel lights up indicating which controls are active in Mono 4 Way Mode.

The functions of these controls can be seen from the first strip label.



**⚠ Note: Do not press both Mode Button, it is invalid setting.**

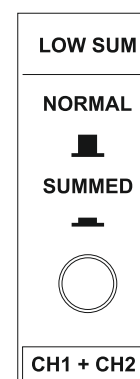
### LOW SUM Function:

To produce a very loud and deep bass response, the lowest band should be summed in a mono signal, while the remaining bands remain in stereo (the human ear cannot locate the source of low frequencies).

By combining all woofer cabinets in one single cluster (the closer, the better) you can optimize their efficiency. Two woofer cabinets positioned next to each other produce an SPL that is 3 dB higher than that of two cabinets placed at a certain distance. Four cabinet give you as much as 6 dB, because low-frequency sound waves feature a spherical dispersion pattern. When the cabinets are positioned separately, the sound waves they radiate interfere with each other, while cabinets placed next to each other create one common wave front (compare two stones that are thrown into the water, either separate lyor together).

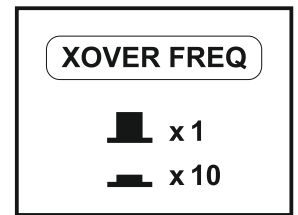
In stereo mode, the SX-432 can be switched to mono bass mode using the LOW SUM button.

When the LOW SUM button is pressed, the low-frequency signal portions in the left and right channels are summed up. The output signal is routed to the Low output of channel 1, from where it can be used to drive, for instance, a subwoofer cabinet.



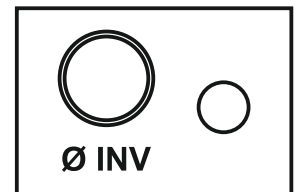
## X10 OPERATION:

If you are using your system in stereo 2-way or 3-way mode, the needed crossover frequency may be higher than 960 Hz, making it necessary to set the x10 switch to the active position. This changes the range of operation of the frequency selector from 45-960 Hz to 450 Hz to 9.6 kHz. All other frequency selectors remain the same. When using the x10 switch, always ensure that the amplifiers feeding all speaker systems are turned off or that the input gain controls on the power amplifiers are turned down before changing the setting of the x10 switch. Not doing so may send a spurious signal to the outputs of the crossover when the x10 switch is engaged, and may damage speaker systems which are powered at the time of the spurious signal.



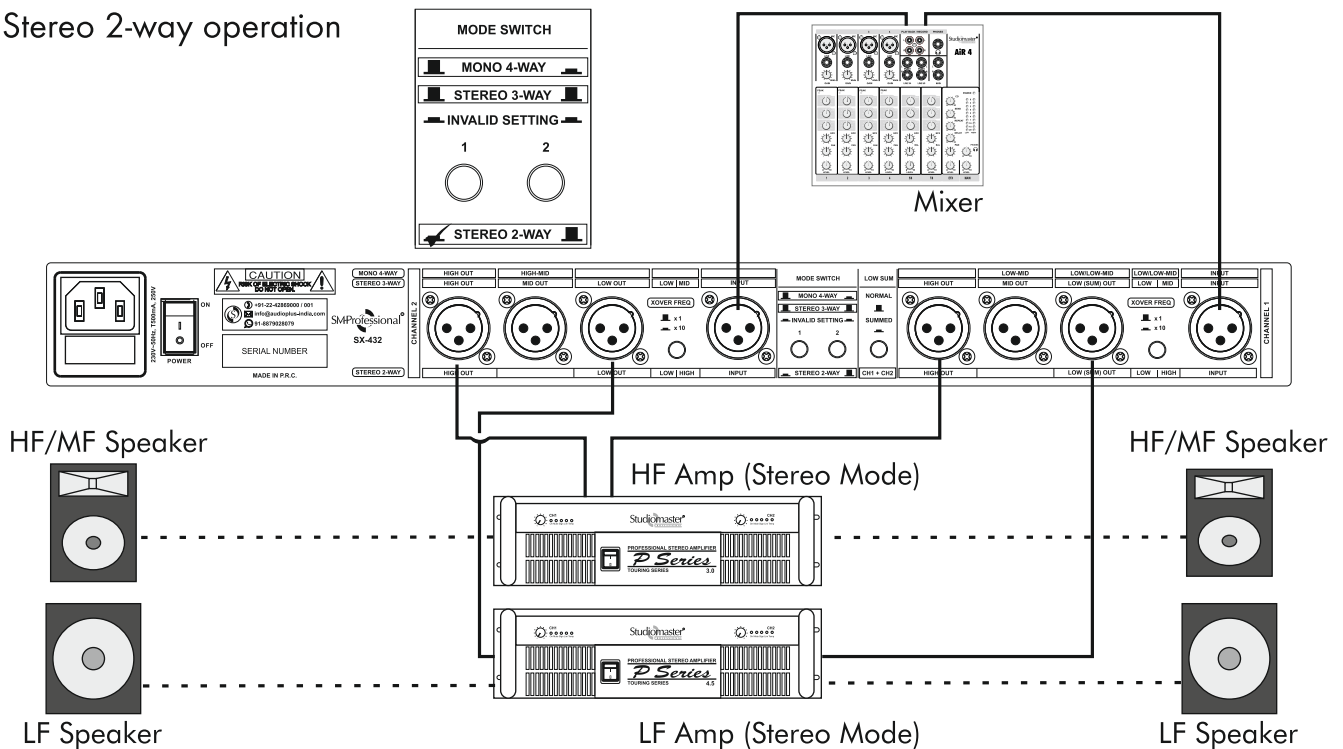
## POLARITY SWITCH:

Every output is equipped with a polarity (Ø) reverse switch on the front panel. When speakers are not "in phase", the frequency response of the system is compromised, particularly in the low frequencies. Out of phase signals can also cause "comb-filtering" in the high frequencies. The polarity switch is extremely useful for fine tuning your sound system for peak performance. An LED is activated when the output polarity is reversed.



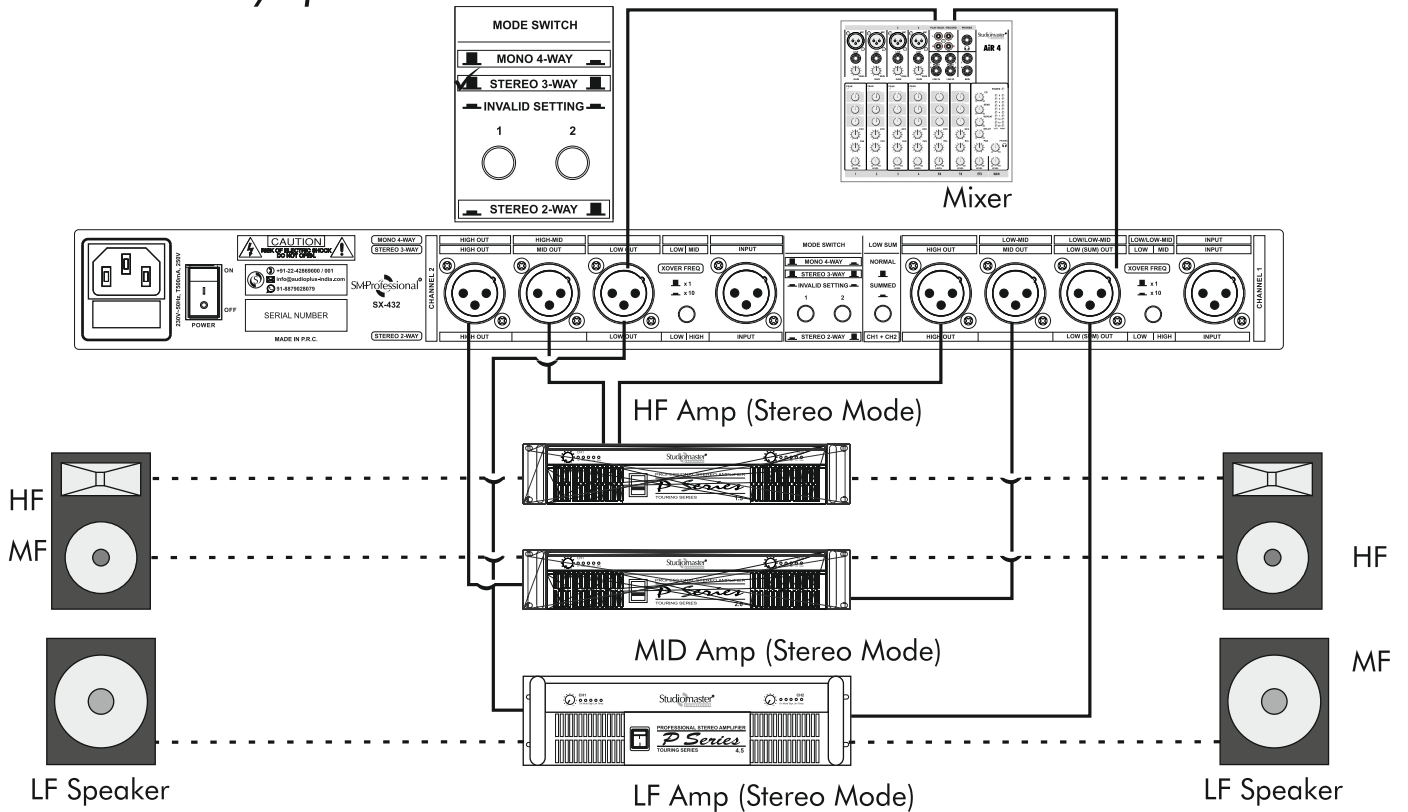
## 6. Set up Diagram

### 1. Stereo 2-way operation



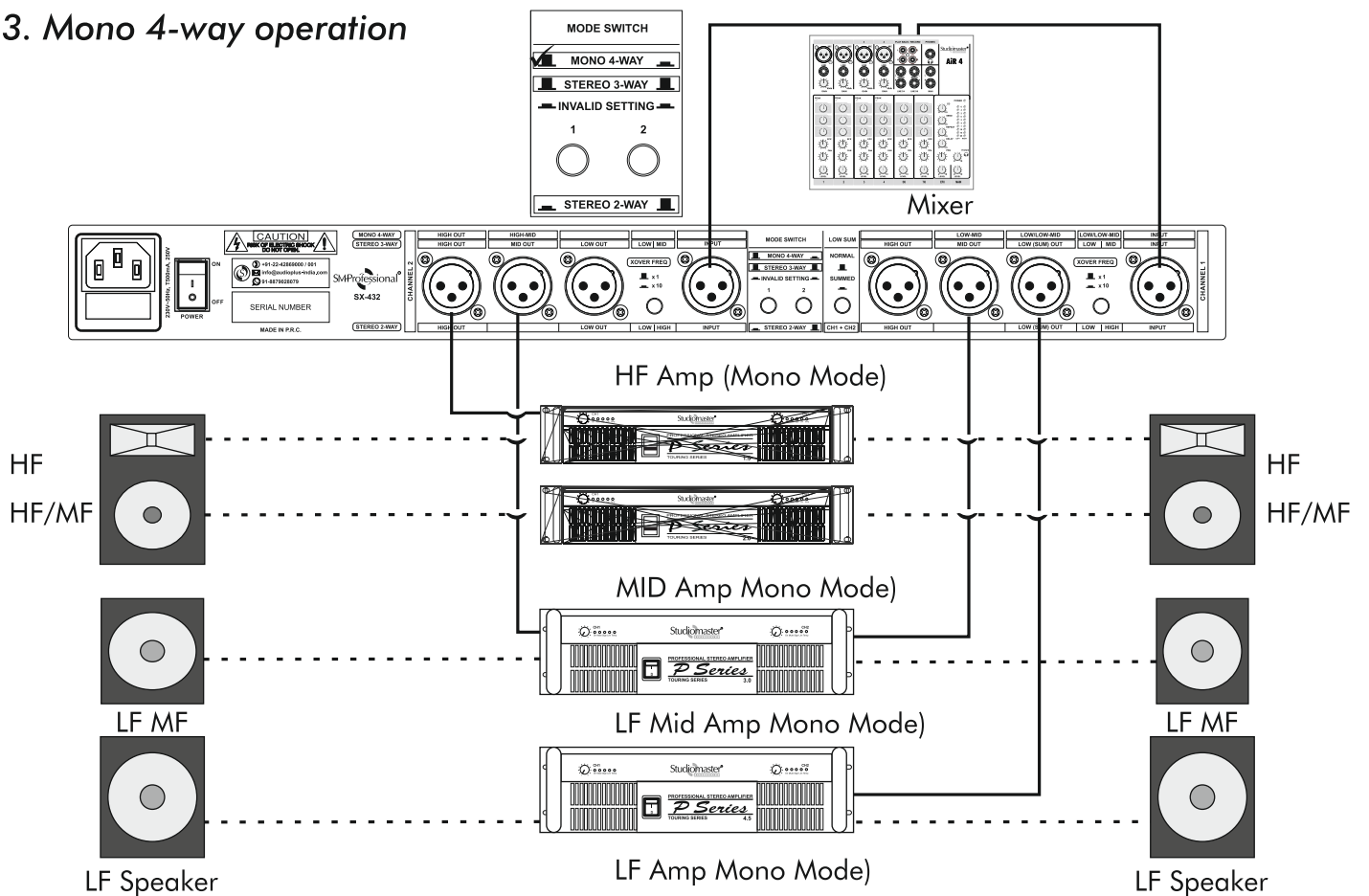
- \* Please ensure the 2 way stereo mode is selected on the rear panel, as mentioned in operating mode section (Pl. refer point 5)
- \* For sub woofer in mono mode make sure the LF Sum switch knob on the rear panel is in the pressed position.

## 2. Stereo 3-way operation



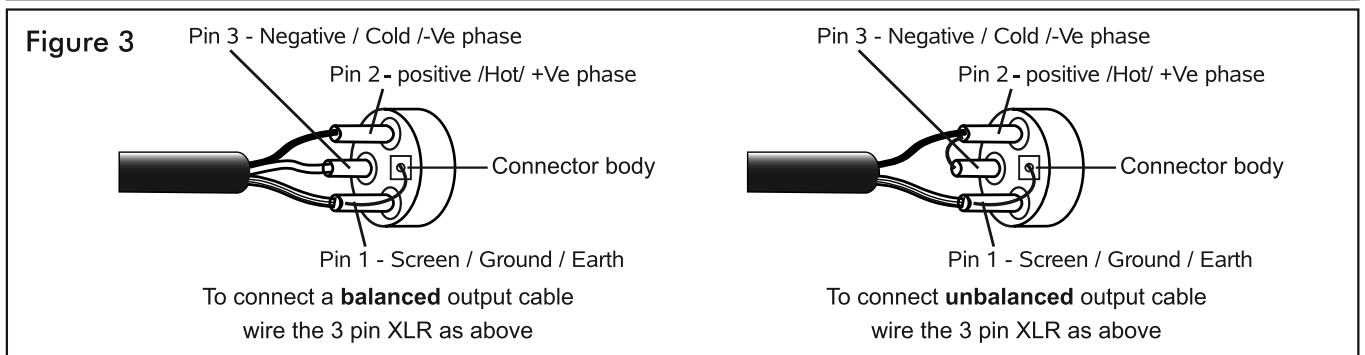
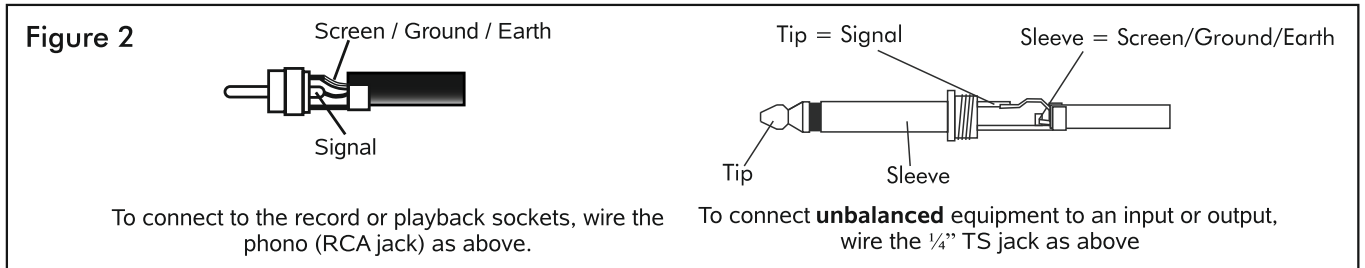
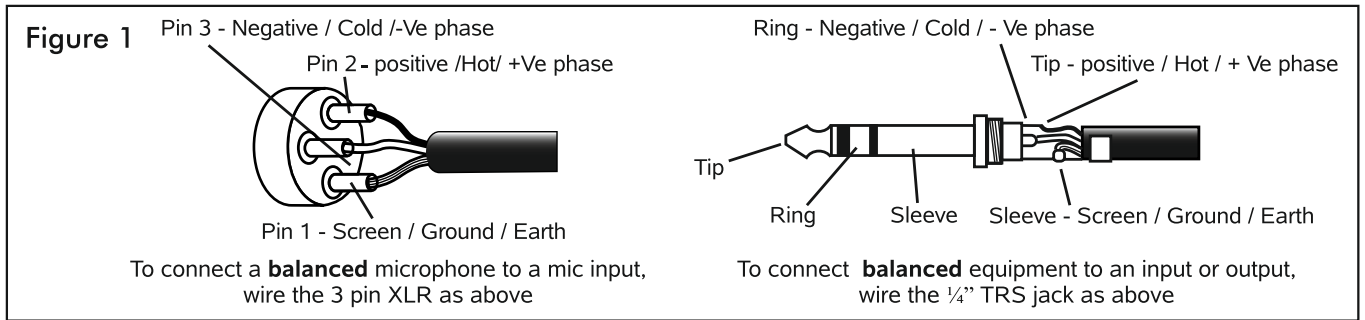
- \* Please ensure the 3 way stereo mode is selected on the rear panel, as mentioned in operating mode section (Pl. refer point 5)
- \* For sub woofer in mono mode make sure the LF Sum switch knob on the rear panel is in the pressed position.

## 3. Mono 4-way operation



- \* Please ensure the 4 way Mono mode is selected on the rear panel, as mentioned in operating mode section (Pl. refer point 5)
- \* For sub woofer in mono mode make sure the LF Sum switch knob on the rear panel is in the pressed position.

## 7. Wiring Information



### ⚠ WARNING : -

If the power plug supplied with this equipment does not suit the power supply socket in your area, please consult the dealer from whom the equipment has been purchased. Please ensure use of correct plug to support appliance earthing.



## 8. Technical Specifications:

Model	SX-432	
<b>Input Output Levels</b>		
Input	Mono/stereo	
Input Connectors	Balanced XLR	
Input Impedance	Unbal: 25k ohms Bal: 50k ohms	
Input Gain	-12dB to +12 dB	
Output	Mono/stereo	
Output Connectors	Balanced XLR	
Output Impedance	Unbal: 100 ohms. Bal: 200 ohms	
Output Gain	-∞dB to +6 dB	
Slope	Linkwitz-Riley, 24 dB/octave, state-variable	
Operating Modes	2-Way Stereo Mode 3-Way Stereo Mode 4-way Mono Mode	
S/N Ratio	>85 dB	
Xover Frequency Range	45 Hz - 9.6 kHz	
Stereo Mode	<b>X1</b>	<b>X10</b>
Low/High	45 to 960Hz	450Hz to 9.6kHz
Low/Mid	45 to 960Hz	450Hz to 9.6kHz
Mid/High	450Hz to 9.6kHz	
Mono Mode	<b>X1</b>	<b>X10</b>
low/Low-High	45 to 960Hz	450Hz to 9.6kHz
Low-Mid/High-Mid	45 to 960Hz	
High-Mid/High	450Hz to 9.6kHz	
Indicator	Stereo Operation (Green); Mono Operation (Yellow); Low Cut (Red-per channel); x10 (Green-per channel); Phase Invert (Red-per output)	
THD	0.05%	
Crosstalk	>85dB	
Low Cut	40 Hz, -3 dB	
Power Supply	240 V AC, 50 Hz	
Power Consumption	15 W Max	
Fuse	T 500mA	
Dimensions (WxDxH)	482.6 x 175 x 44 mm	
Net Weight	1.8 kg	


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