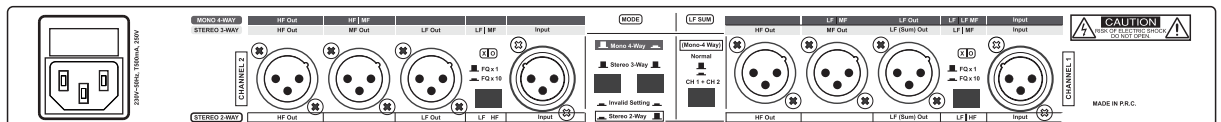
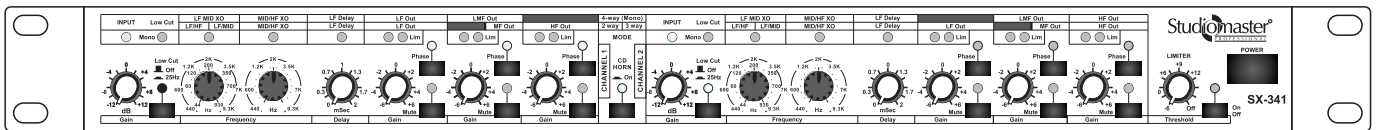


Studiomaster[®]

PROFESSIONAL

SX-341

2 Way / 3 Way / 4 Way Crossover



Index:

1. Installation
2. Introduction
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4. Front Panel Description
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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 Studiomaster Professional SX-341 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

A good cable run improves the sound quality. Make sure cables are short & direct to avoid problems like Hum, Noise & High Frequency absorption. If long cable runs are unavoidable, please use balanced XLR-connectors at all times.

Outputs

The crossover has a high damping factor to maintain clear sound reproduction. Long & thin wires will ruin the tonal quality of the audio. If long cables are to be used then make sure they are thick. The longer the distance the thicker wires should be used. The outputs of your Studiomaster Professional SX-341 Crossover are equipped with electronically balanced XLR connectors.

Starting Up

Make sure that the crossover is turned on before the amplifiers to avoid loud transients which could damage the speakers. After connecting all cables, you should carry the following system test.

Step 1: Mute all outputs.

Step 2: Activate the LF-outputs first. In case of wrong cabling, HF-signals will come out of bass-speakers which will not damage the speaker. Doing this step vice versa, can lead to a LF signal destroying the HF speaker.

2. Introduction

Thank you for purchasing the Studiomaster Professional SX-341 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.

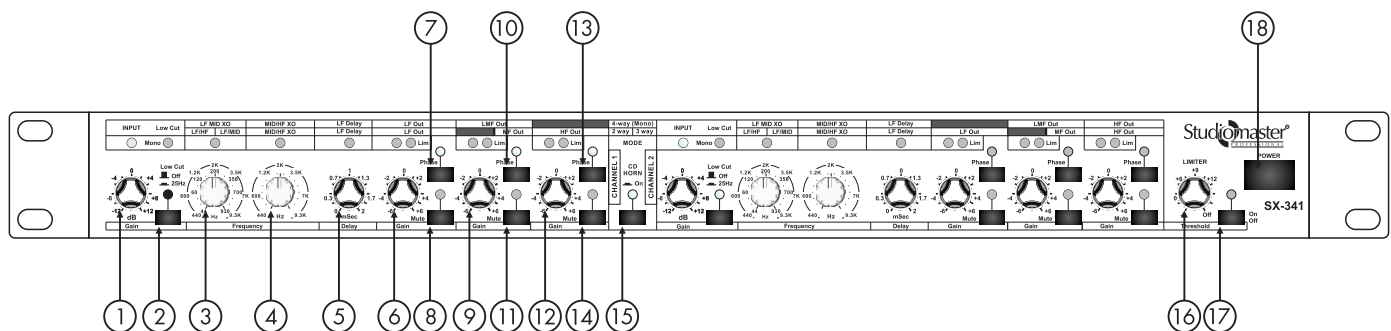
3. Feature at Glance

- Premium quality stereo 2-way/3-way/mono 4-way crossover
- Individual Limiters on each output for optimal loudspeaker protection
- Adjustable time delay for phase alignment between drivers
- CD horn equalization for constant directivity horn compensation
- "Low Sum" function provides Mono output for Subwoofer operation
- Individual output Gain controls for all bands.
- Mute switches for Individual output makes band adjustment easy
- Individual Phase reverse switches for instant phase correctPremion

- Switchable 25 Hz Low cut filter on each input for low-frequency driver protection
- Balanced XLR connectors for all inputs and outputs

4. Front Panel Description

Front Panel



1. **INPUT** Control: This control adjusts the input gain from -12 to +12 dB (see control 16)
2. **LOW CUT** Button with LED: This button activates the 25 Hz Highpass filter protecting the woofers against low-frequency signals. The LED is provided to indicate the selection of LOW CUT function.
3. **LOW/HIGH XOVER FREQ.** Control: *In 2 Way Stereo Mode*, this control governs the crossover frequency between the **Low and High** bands. When the XOVER FREQUENCY button on the rear of the unit is pressed, the frequency range is multiplied by the factor 10.

LOW/MID XOVER FREQ. Control: Control: *In 3 Way Stereo Mode*, this control governs the crossover frequency between the **Low and MID** bands. When the XOVER FREQUENCY button on the rear of the unit is pressed, the frequency range is multiplied by the factor 10.

LOW/LOW-MID XOVER FREQ. Control: Control: *In 4 Way Mono Mode*, this control governs the crossover frequency between the **Low and LOW-MID** bands. When the XOVER FREQUENCY button on the rear of the unit is pressed, the frequency range is multiplied by the factor 10.

4. **MID/HIGH XOVER FREQ.** Control: *In 3 Way Stereo Mode*, this control governs the crossover frequency between the **Mid and High** bands.

LOW-MID/HIGH-MID XOVER FREQ. Control: *In 4 Way Mono Mode*, Channel 1 control governs the crossover frequency between the **LOW-Mid and High-MID** bands.

HIGH-MID/HIGH XOVER FREQ. Control: *In 4 Way Mono Mode*, Channel 2 control governs the crossover frequency between the **LOW-Mid and High-MID** bands.

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

5. **DELAY** Control: This control delays the Low signal by as much as 2ms, which is useful to align the speaker systems in phase.

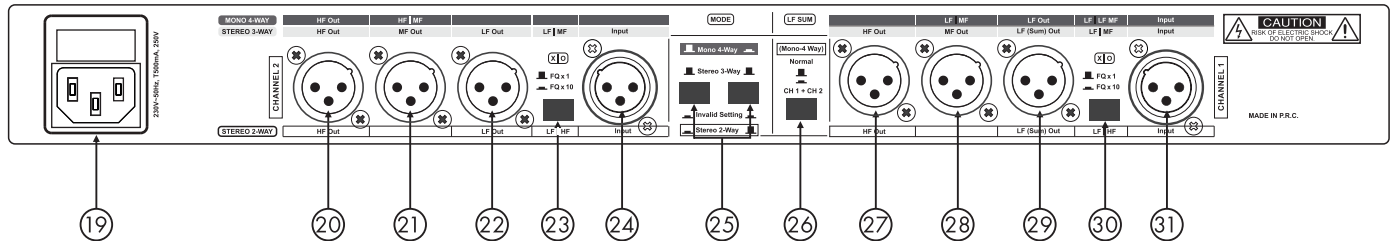
6. **LOW OUTPUT** Control: Controls the output level of the Low band from -6 to +6 dB.
7. **LOW PHASE INVERT** Button: This button reverses the polarity of the Low output.
8. **LOW MUTE** Button: Mutes the Low band.
9. **MID OUTPUT** Control: In 3 Way stereo mode, Channel 1 control controls the output level of the Mid band from -6 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 -6 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 +6 to -6 dB.
10. **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.*
11. **MID MUTE** Button: In 3 Way stereo mode, channel 1 Mute button Mutes the Mid band.
- LOW-MID MUTE** Button: In 4 Way stereo mode, channel 2 Mute button Mutes the Low-Mid band.
- HIGH-MID MUTE** Button: In 4 Way stereo mode, it Mutes the High-Mid band.
- Note: In 2 Way Stereo Mode, this button will not be in use.*
12. **HIGH OUTPUT** Control: In 2Way & 3 Way stereo mode, Controls the output level of the High band from -6 to +6 dB.
- HIGH OUTPUT** Control: In 4 Way Mono mode, Channel 2 control Controls the output level of the High band from -6 to +6 dB and Channel 1 control will be unused.
13. **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.
14. **HIGH MUTE** Button: Mutes the High band.
15. **CD HORN** Button: This button provides a special form of frequency correction in the High band for constant-directivity horns.

16. **THRESHOLD** Control: This control determines the limiter threshold.

17. **LIMITER** Button: This button activates all limiters. Whenever the signal surpasses the limiter threshold, the LIM-LEDs above the Gain control light up, signaling that the SX-341 cuts back the output level

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

Rear Panel Description



19. **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.

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

21. **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.

22. **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.

23. **XOVER FREQ.** Button: This button serves to switch over the control range of the front-panel LOW/HIGH XOVER FREQ. control from 44 to 930 Hz or 440 Hz to 9.3 kHz.

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

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

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

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

26. **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.

27. **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.

28. **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.

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

30. **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 44 to 930 Hz or 440 Hz to 9.3 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 44 to 930 Hz or 440 Hz to 9.3 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 44 to 930 Hz or 440 Hz to 9.3 kHz.

31. Input Connector : Channel 1 Input Connector.

5. Operating Modes

SX-341 Crossover has three operating modes:

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

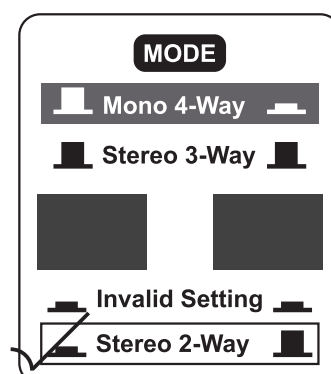
Mode	Mode Switch 1	Mode Switch 2
Stereo 2 Way Mode	Pressed 	Released 
Stereo 3 Way Mode	Released 	Released 
Mono 4 Way Mode	Released 	Pressed 
Invalid Setting	Pressed 	Pressed 

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, above the LOW CUT button in Channel 2, lights up.

Subsequently, the LEDs above the active controls on the front panel light up, showing which controls are active in Stereo 2 Way Mode.

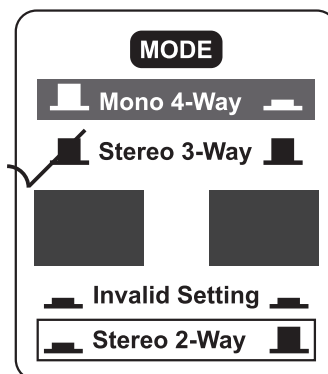
The functions of these controls can be seen from the second strip label. In stereo mode, both channels perform the same functions



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, above the LOW CUT button in Channel 2, lights up. Subsequently, the LEDs above the active controls on the front panel light up, indicating which controls are active in Stereo 3 Way Mode.

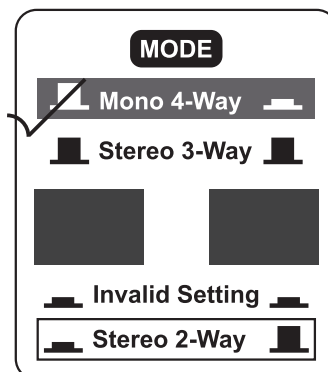
The functions of these controls can be seen from the second strip label. In stereo mode, both channels perform the same functions.



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, above the LOW CUT button in Channel 1, lights up. Subsequently, the LEDs above the active controls on the front panel light 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.

Limiter Setup:

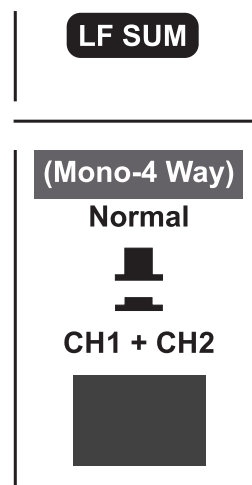
On condition that you are using power amps and speakers that are compatible in terms of power rating, you should drive your amps under full load (i.e. 0 dB). Use pink noise from your analyzer as a sound source, turn the limiter THRESHOLD control to maximum and press the LIMITER button. Then, gradually cut back the threshold until just a few LIM-LEDs start flashing. Now, the entire system gain is limited to 0 dB.

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-341 can be switched to mono bass mode using the LOW SUM button.

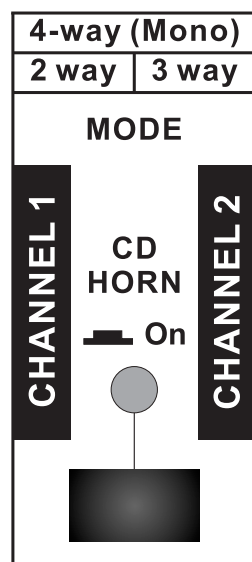


When the LOW SUM button is pressed, the low-frequency signal portions in the left and right channels are summed up. The output signal is routed to the Low output of channel 1, from where it can be used to drive, for instance, a subwoofer cabinet.

CD Horn Function:

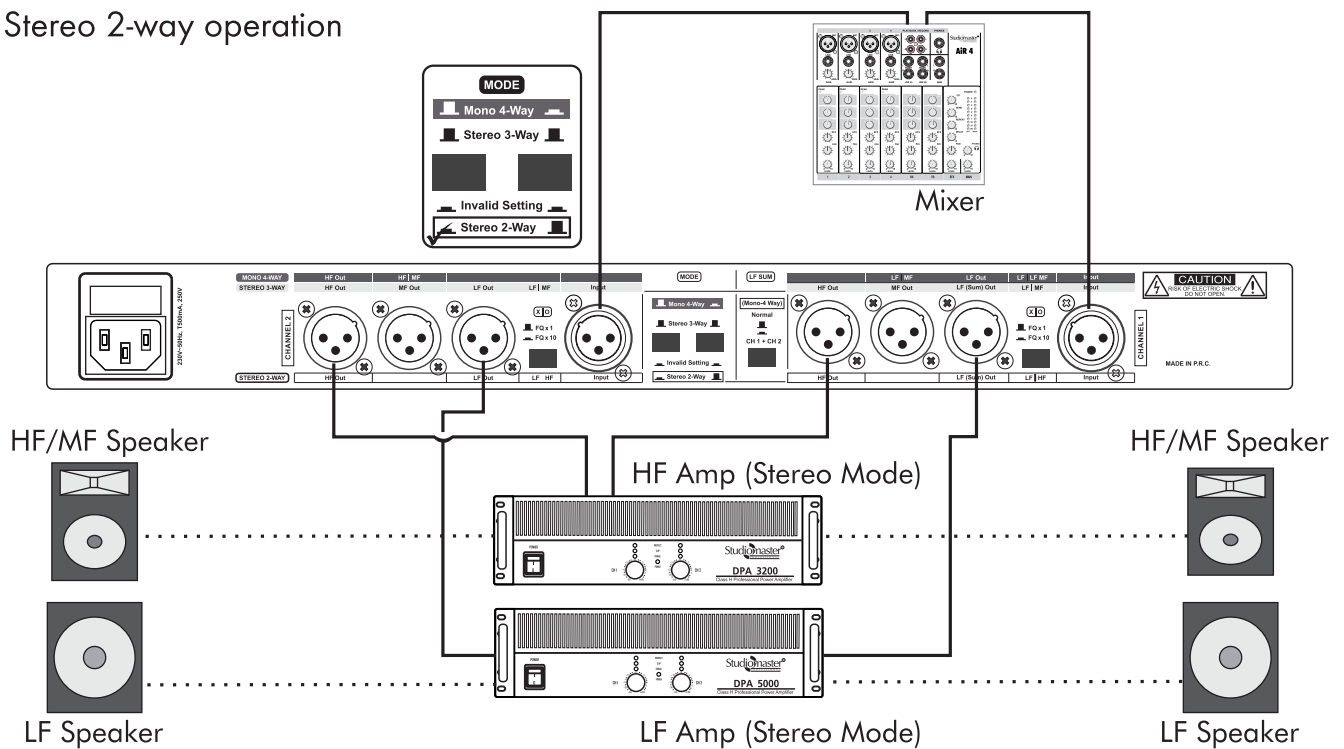
When a driver radiates into open space via a horn, its efficiency increases. Over the past few years, so-called constant-directivity horns have gained wide spread popularity, as they offer the advantage of producing a very regular dispersion pattern over their frequency range; however, the higher the frequency, the lower their efficiency.

To make up for this drawback, the SX-341 includes a switchable pre-EQ for CD horns that ensures a flat frequency response even before equalization is applied. This pre-EQ raises the signal gain by 3 dB at 3.5 kHz, which then increases by 6 dB/oct. up to 22.5 kHz.



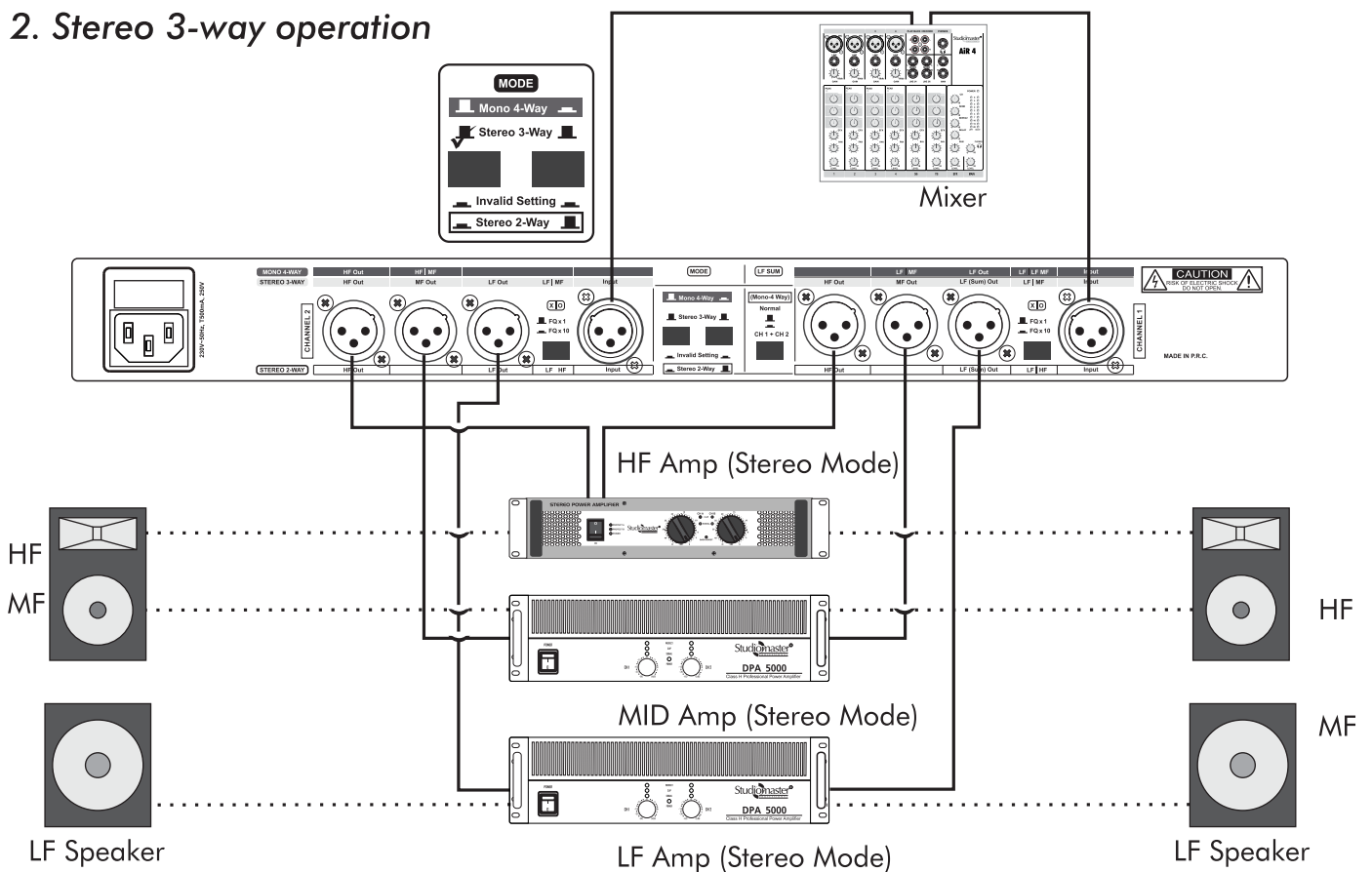
6. Set up Diagram

1. Stereo 2-way operation



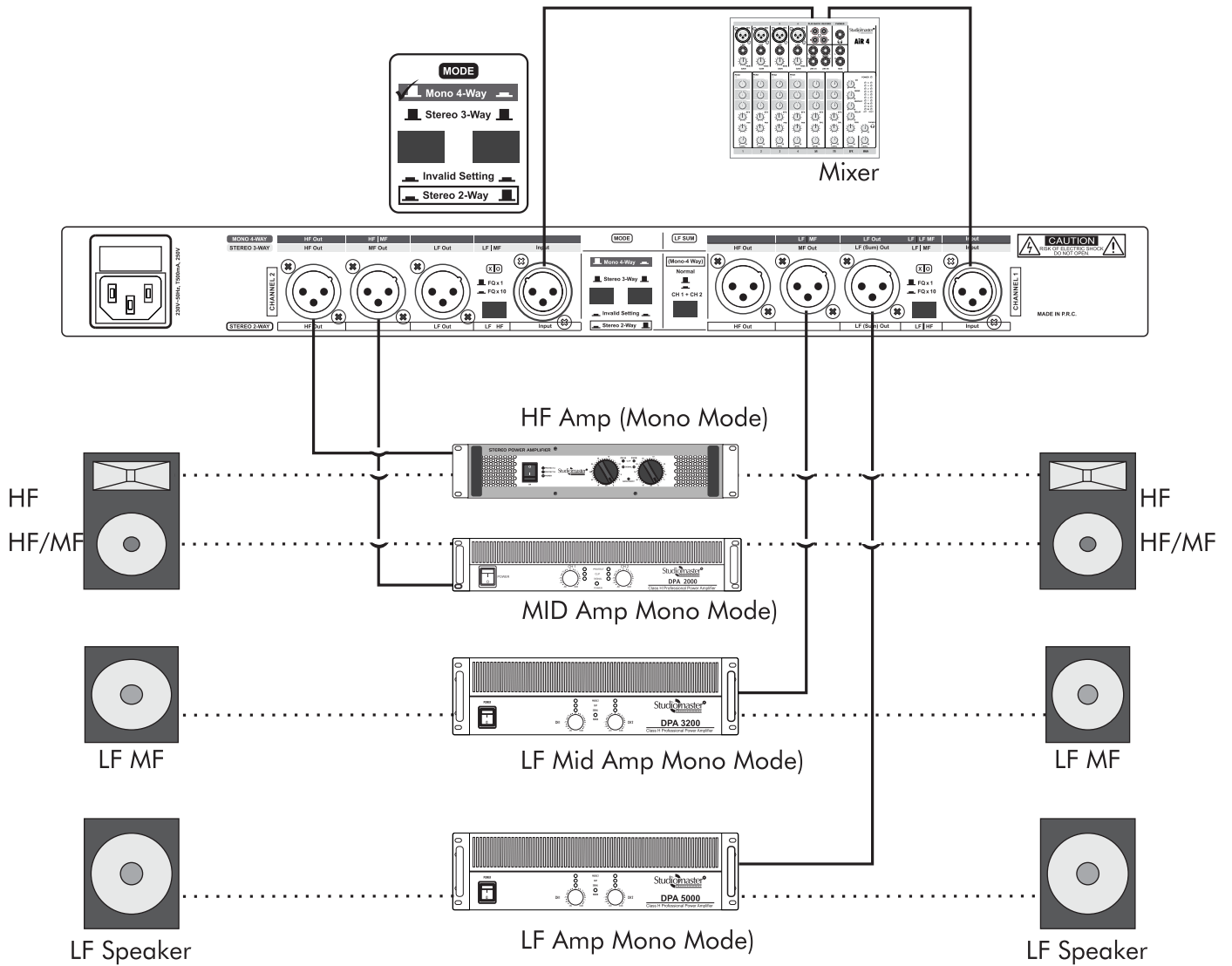
- * Please ensure the 2 way stereo mode is selected on the rear panel, as mentioned in operating mode section (Pl. refer point 5)
- * For sub woofer in mono mode make sure the LF Sum switch knob on the rear panel is in the pressed position.

2. Stereo 3-way operation



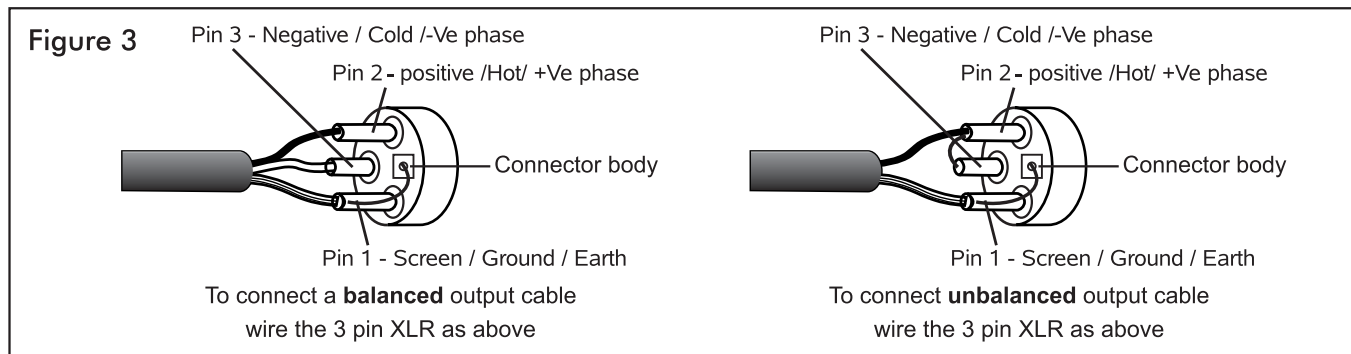
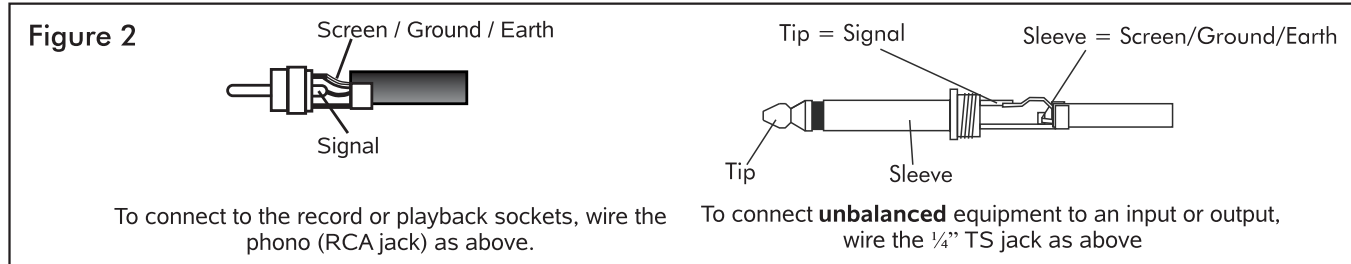
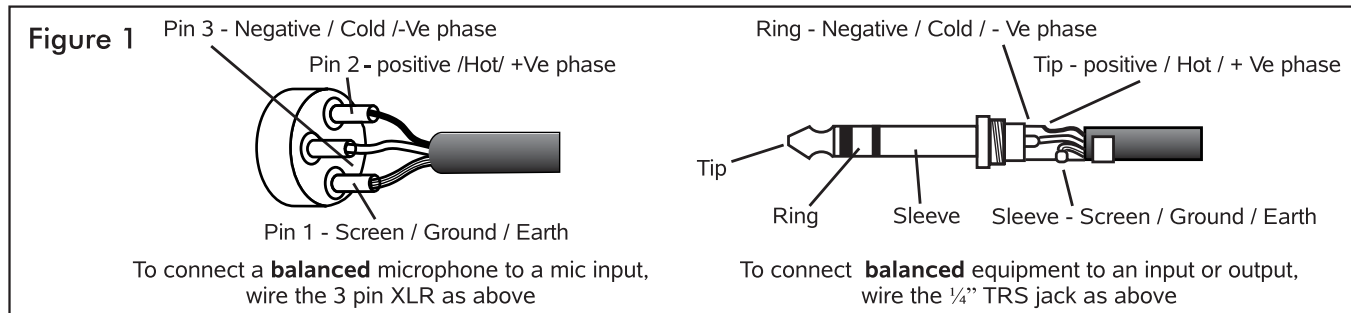
- * Please ensure the 3 way stereo mode is selected on the rear panel, as mentioned in operating mode section (Pl. refer point 5)
- * For sub woofer in mono mode make sure the LF Sum switch knob on the rear panel is in the pressed position.

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-341		
Input Output Levels			
Input	Mono/stereo		
Input Connectors	Balanced XLR		
Input Impedance	Unbal: 10k ohms Bal: 20k ohms		
Input Gain	-12dB to +12 dB		
Output	Mono/stereo		
Output Connectors	Balanced XLR		
Output Impedance	Unbal: 30 ohms. Bal: 60 ohms		
Output Gain	-6dB to +6 dB		
Slope	24 dB / Octave		
Operating Modes	2-Way Stereo Mode 3-Way Stereo Mode 4-way Mono Mode		
S/N Ratio	>95 dB		
Xover Frequency Range	44 Hz - 9.3 kHz		
Stereo Mode	X1	X10	
	Low/High	44 to 930Hz	440Hz to 9.3kHz
	Low/Mid	44 to 930Hz	440Hz to 9.3kHz
	Mid/High	440Hz to 9.3kHz	
Mono Mode	X1	X10	
	low/Low-High	44 to 930Hz	440Hz to 9.3kHz
	Low-Mid/High-Mid	44 to 930Hz	
	High-Mid/High	440Hz to 9.3kHz	
THD	0.05%		
Crosstalk	>85		
Low Cut	25 Hz, -3 dB		
Power Supply	240 V AC, 50 Hz		
Power Consumption	22 W Max		
Fuse	T 500mA		
Dimensions (WxDxH)	482.6 x 161 x 44 mm		
Net Weigh	2.5 kg		

Range of Studiomaster Professional Products.

Wired Microphones

SM 100XLR
TRIO 100
SM 200XLR
TRIO 200
SM 300I
SM 400XLR
SM 450XLR
SM 500XLR
SM 600XLR
SM 650XLR
SM 800C
SM 900C
SBM 10
SBM 20
Flex 2/Flex 2B
Flex 3
Flex 4

Wireless Microphones

BR 28 Series
BR 48 Series
ER 7 Series
ER 11 Series
ER 31 Series
ER 58 Series
KR 12 Series
TR 47 Series
XR 20 Series
XR 40 Series
XR 80 Series
XR 100 Series

Conference System

Vāk 10 System
Vāk 10s
Vāk 10d / Vāk 10c
Vāk 20

Crossovers

SX-2
SX-321

Processors

SEQ 152
SEQ 302F
SEQ 312
Multi 3
SFX 8
SPS 8
SDX 4
Phantom 11

Mixers

- ~ **Cub Series**
- CUB 4
- CUB 6
- CUB 6U
- ~ **Air Series**
- AiR 2
- AiR 4
- AiR 6 / AiR 6U
- AiR 8 / AiR 8U
- AiR 12
- AiR 16 / AiR 16U
- AiR Pro 18
- AiR Pro 24
- AiR Pro 28
- AiR Pro 36

~ Air X Series

AiR X 10
AiR X 14
AiR X 18

~ AQUA Series

Aqua 6
Aqua 8
Aqua 10
Aqua 14

~ Digital Mixer

D. Mix 20

~ Diamond Club Series

Diamond Club 6.2
Diamond Club 8.2
Diamond Club 8.2 EFX
Diamond Club 12.2
Diamond Club 12.2 EFX
Diamond Club 12.2 USB
Diamond Club 16.2
Diamond Club 16.2 EFX

~ Diamond Supreme Series

Diamond Supreme 12
Diamond Supreme 12U
Diamond Supreme 16U

~ Club 2000 Series

C 142
C 182

~ Platinum Series

Platinum 12Fx
Platinum 16
Platinum 16Fx

~ Diamond Pro-3 Series

Pro-3 12.3
Pro-3 16.3

~ DJ Mixers

DJX 300
DJX 325
Playmix 300
DJX 825
DJX 855
DJX 875
DJX 925
DJX 975

CD/USB Media Player

MP 2000

Amplifiers

~ P - Series

PA 1.5
PA 2.0
PA 3.0
PA 4.5
PA 6.0
PA 7.5

~ DPA Series

DPA 2000
DPA 3200
DPA 4500
DPA 5000

~ DJA Series

DJA 100
DJA 500
DJA 800
DJA 1600
DJA 2500
DJA 3200
DJA 4000
DJA 5000

XJA 2600

~ Arena Series

Arena 20
Arena 30

~ Industrial Amplifier

ARC 120A
ARC 240A

Speaker Component

~ S-Series

SWF 18120
SWF 18100
SWF 1880
SWF 1560
SMB 1565
SMB 1545
SMB 1530
SMB 1250
SMB 1230
SMB 1220
SHF 0104
SHF 0106
SHF 0210

~ E-Series

EMB 1225
EMB 1530
EMB 1535

~ TITAN Series

TWF 2115
TWF 1815
TWF 1811
TWF 1580
TMB 1555
TMB 1535
THF 0208

Passive Speakers

~ S-Series

S5225
S8018
S8118
S8128
S8028

~ Fire Series

Fire 21 /
Fire 51
Fire 51A
Fire 55 / Fire 57
Fire 82
Fire 84

~ XVP Series

XVP 1225
XVP 1540
XVP 1540M
XVP 1560
XVP 2250
XVP 2550
XVP 2585
XVP 25A2
XVP 25A6
XVP 1808
XVP 1810
XVP 1812
XVP 2820

EKS 151

Q 400

Powered Speaker

~ ARIA Series

Aria 8
Aria 12
Aria 15

~ A Series

A 400
A 500

H 400

~ B Series

B 200
B 400 (Black & White)
B 400U
B 400UB

~ OP Series

OP 415
OP 515

~ SUB Series

O 12SUB
O 15SUB

Line Array System

FIRE 92
SLA-40 T
SLA-40 Kit
SLA 30
S 9022
S 9022 (FK)

Stabilizers

SVC - S1000
SVC - S2000
SVC - S3000
SVC - S5000
SVC - S6000
SVC - S8000
SVC - S10000
SVC - S12000

* Design and specification are subject to change without notice.

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