

# PROFESSIONAL SIGNAL PROCESSOR

## User Guide and Reference Manual

### SB-432XL

#### 2/3/4-WAY ELECTRONIC CROSSOVER



Before attempting to connect, operate or adjust this product, please read these instructions carefully



# Professional Signal Processor

## User Guide

Thank you for selecting our products.  
Please read this manual carefully to get the most out of your new unit.

**Caution:** Do not let this unit touch the rain or get wet, to avoid fire or electric shock.

### FEATURES

SB-432XL electronic crossover, has high-pass filters, That cut the low frequency disturbance. To protect the speaker from damage. Includes phase switch, separate high / low frequency gain to adjustment. Easy for different system connections. SB-432XL is a stereo 2-way or 3-way crossover (or mono 4-way crossover) 24dB/octave crossover, can be used for stereo or mono operation mode.

- XLR balanced ins and Outs
- 2 way stereo/3 way Stereo ,4way mono Stereo Crossover
- Phase reverse switch on all outputs
- Individual level controls on all band outputs
- 24dB per octave
- Linkwitz - Riley filters (the professional standard)
- Low frequency summed(subwoofer)output
- x10 range switch on both channels
- 40Hz high pass (low cut) filter both channels
- Stereo /mono status LEDs indicate the selected mode

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An equilateral triangle enclosing a lightning flash/arrowhead symbol is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure which may be of sufficient magnitude to constitute a risk of electric shock.



An equilateral triangle enclosing an exclamation point is intended to alert the user to the presence of important operating and service instructions in the literature enclosed with this unit.

## IMPORTANT SAFETY INSTRUCTIONS

**WARNING** - When using electric products, basic precautions should always be followed, including the following:

1. Read all the instructions before using the product.
2. Do not use this product near water (e.g., unprotected out door, in a wet basement, near a swimming pool, etc.).
3. This product should be used only with a cart or stand that will keep it level and stable and prevent wobbling.
4. This product, in combination with headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat vents, or other devices ( including amplifiers) that produce heat.
7. The product should be connected to a power outlet only of the type described in the operating instructions or as marked on the product. Replace the fuse only with one of the specified type and size and with the correct rating.
8. The power-supply cord should: (1) be undamaged, (2) never share an outlet or extension cord with other devices so that the outlet's or extension cord's power rating is exceeded, or (3) be left plugged into the outlet when left unused for a long period of time.
9. Care should be taken so that objects do not fall into and liquids are not spilled through the enclosure's openings.
10. The product should be serviced by qualified service personnel when:
  - A. The power-supply cord or the plug has been damaged; or
  - B. Objects have fallen, or liquid has been spilled onto the product; or
  - C. The product has been exposed to rain; or
  - D. The product does not appear to operate normally or exhibits a marked change in performance; or
  - E. The product has been dropped, or the enclosure damaged.
11. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

### IMPORTANT SAFETY INSTRUCTIONS

This product may be equipped with a polarized line plug (one blade wider than the other). This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug. (For use in the U.S.A.)

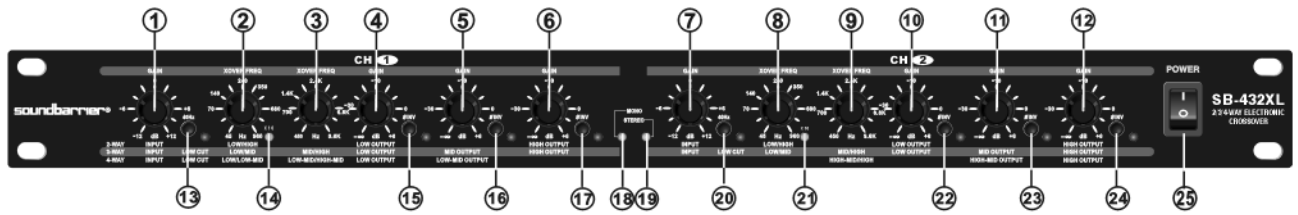
**IMPORTANT:** THE WIRES IN THIS MAINS LEAD ARE COLORED IN ACCORDANCE WITH THE FOLLOWING CODE.  
 BLUE: NEUTRAL / BROWN: LIVE

As the colors of the wires in the mains lead of this apparatus may not correspond with the colored markings identifying the terminals in your plug proceed as follows: The wire which is colored BLUE must be connected to the terminal which is marked with the letter N or colored BLACK. The wire which is colored BROWN must be connected to the terminal which is marked with the letter L or colored RED. Under no circumstances must either of the above wires be connected to the ground terminal of a three-pin plug.

**(For use in Europe)**

**WARRANTY WILL BE VOID IF UNIT IS NOT USED AS PER FACTORY MANUAL.**

# FRONT PANEL



## STEREO 2-WAY MODE

2-way stereo mode the controls stereo mode. Front panel controls are marked below the horizontal blue line. Channel 1 and channel 2 functions are identical in the not described in this section are not active in stereo 2-way operation.

(1) & (7)	INPUT GAIN	Controls the INPUT level with +/- 12 dB of gain
(13) & (20)	LOW CUT	Switch for selecting the 40Hz high pass filter An LED indicates the selection
(2) & (8)	LOW/MID	Selects crossover point between the LOW and HIGH outputs
(14) & (21)	x 10 LED	Indicates that the LOW/HIGH crossover frequency range is 450 Hz to 9.6 kHz.
(4) & (10)	LOW OUTPUT	Controls the LOW frequency output level with a range of -- to +6dB.
(15) & (22)	PHASE INVERT	Switch for reversing the polarity on the LOW output. An LED indicates that the phase is inverted
(6) & (12)	HIGH OUTPUT	Controls the HIGH frequency output with a range of -∞ to +6dB.
(17) & (24)	PHASE INVERT	Switch for reversing the polarity on the HIGH output. An LED indicates that the phase is inverted
(19)	STEREO	LED indicating stereo mode operation

\*Although the control is labeled stereo 2-way operation as LOW/MID, it operates as the crossover frequency control between low & high frequencies in

## STEREO 3-WAY MODE

In 3-way stereo mode the controls are marked below the horizontal blue line. Channel 1 and channel 2 functions are identical. In the stereo mode LEDs are disabled for controls which are non-functional in this mode.

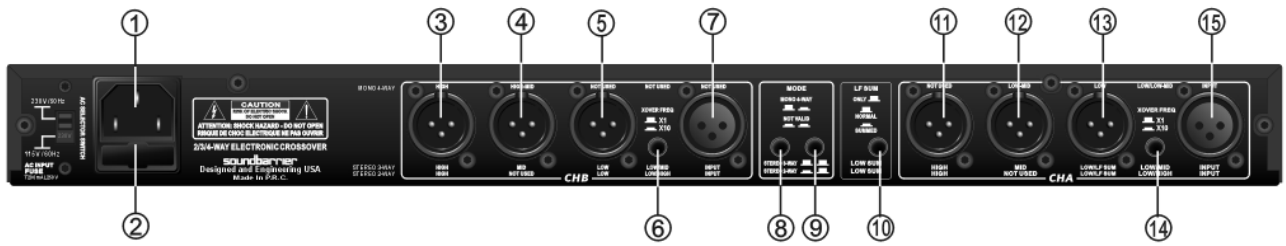
(1) & (7)	INPUT GAIN	Controls the INPUT level with +/- 12 dB of gain.
(13) & (20)	LOW CUT	Switch for selecting the 40Hz high pass filter An LED indicates the selection
(2) & (8)	LOW/MID	Selects crossover point between the LOW and MID frequencies
(14) & (21)	x 10 LED	Indicates that the LOW/HIGH crossover frequency range is 450 Hz to 9.6 kHz.
(3) & (9)	MID/HIGH	Selects crossover point between MID and HIGH frequencies
(4) & (10)	LOW OUTPUT	Controls the LOW frequency output level with a range of -∞ to +6dB.
(15) & (22)	PHASE INVERT	Switch for reversing the polarity on the LOW output. An LED indicates that the phase is inverted
(5) & (11)	MID OUTPUT	Controls the mid frequency output with a range of -∞ to +6dB.
(16) & (23)	PHASE INVERT	Switch for reversing the polarity on the MID output. An LED indicates that the phase is inverted
(6) & (12)	HIGH OUTPUT	Controls the HIGH frequency output with a range of -∞ to +6dB.
(17) & (24)	PHASE INVERT	Switch for reversing the polarity on the HIGH output. An LED indicates that the phase is inverted
(19)	STEREO	LED indicating stereo mode operation

## MONO 4-WAY MODE

In 4-way mono operation mode the controls are marked above the horizontal blue line. Front controls not described in this section are not active in mono 4-way mode. LEDs are disabled for controls which are non-functional in mono 4-way mode panel

(1)	INPUT GAIN	Controls the INPUT level with +/- 12 dB of gain.
(13)	LOW CUT	Switch for selecting the 40Hz high pass filter An LED indicates the selection
(2)	LOW/LOW-MID	Selects crossover point between the LOW and LOW-MID frequencies
(14)	x 10 LED	Indicates that the LOW/LOW-MID crossover frequency range is 450 Hz to 9.6 kHz.
(3)	LOW-MID/HIGH-MID	Selects crossover point between LOW-MID and HIGH-MID frequencies
(9)	HIGH-MID/HIGH	Selects crossover point between HIGH-MID and HIGH frequencies
(4)	LOW OUTPUT	Controls the LOW frequency output level with a range of -∞ to +6dB.
(15)	PHASE INVERT	Switch for reversing the polarity on the LOW output. An LED indicates that the phase is inverted
(5)	LOW-MID OUTPUT	Controls the LOW MID frequency output with a range of -∞ to +6dB.
(16)	PHASE INVERT	Switch for reversing the polarity on the MID output. An LED indicates that the phase is inverted
(11)	HIGH-MID OUTPUT	Controls the HIGH-MID frequency output with a range of -∞ to +6dB.
(23)	PHASE INVERT	Switch for reversing the polarity on the MID output. An LED indicates that the phase is inverted
(12)	HIGH OUTPUT	Controls the HIGH frequency output with a range of -∞ to +6dB.
(24)	PHASE INVERT	Switch for reversing the polarity on the HIGH output. An LED indicates that the phase is inverted
(19)	STEREO	LED indicating stereo mode operation

# REAR PANEL



1 - AC CHORD

2- FUSE COMPARTMENT

3- HIGH OUTPUT

4- HIGH/MID OUTPUT CH 2

5- LOW OUTPUT Ch2

6- CROSSOVER FREQUENCY (x10 SWITCH)

7- CH 2 INPUT

8 - STEREO/MONO SWITCH

9- STEREO/MONO SWITCH

10- LF SUM SWITCH

11- CH 1 HIGH OUTPUT

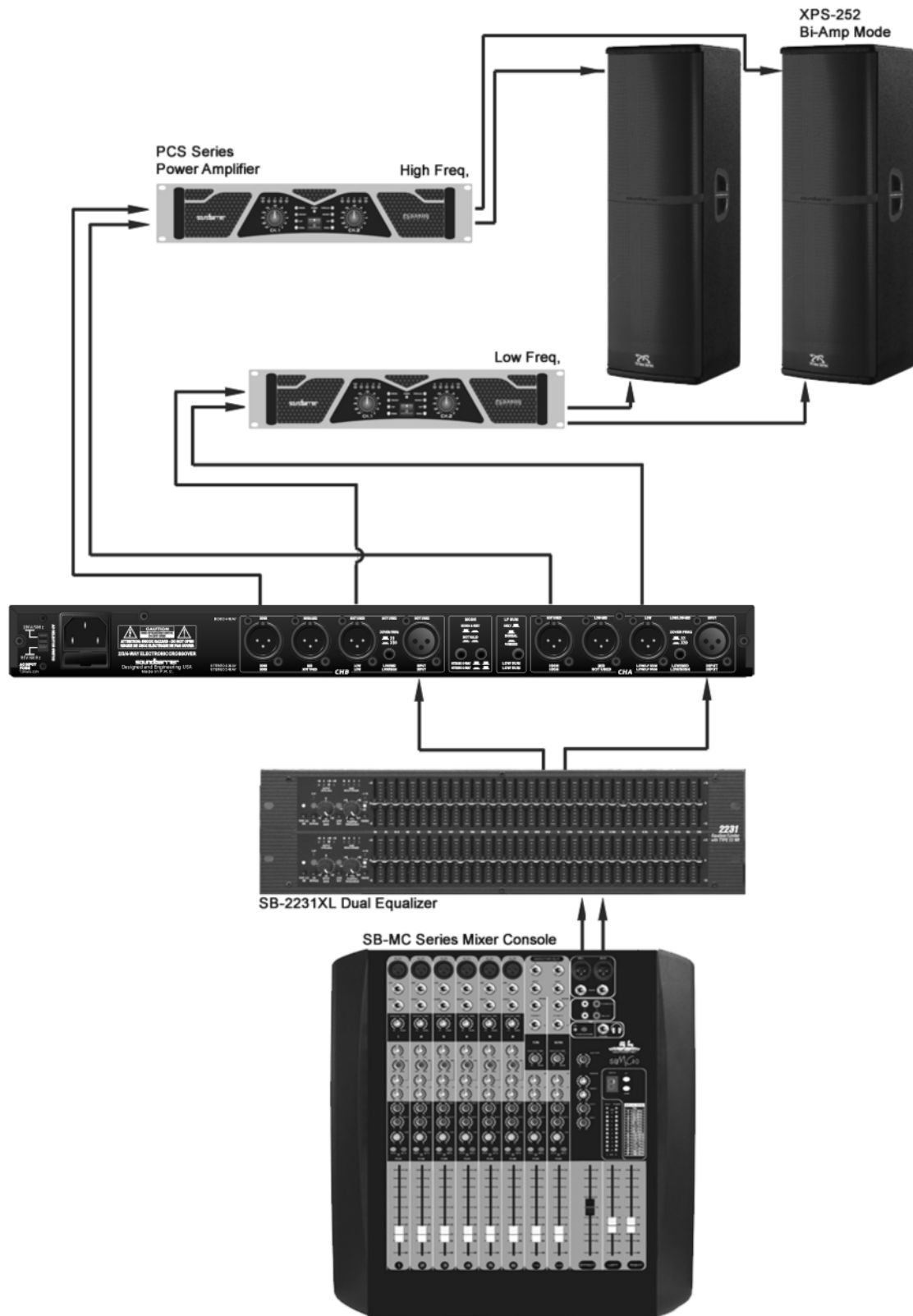
12- CH 1 HIGH/MID OUTPUT

13- LOW OUTPUT CH 1

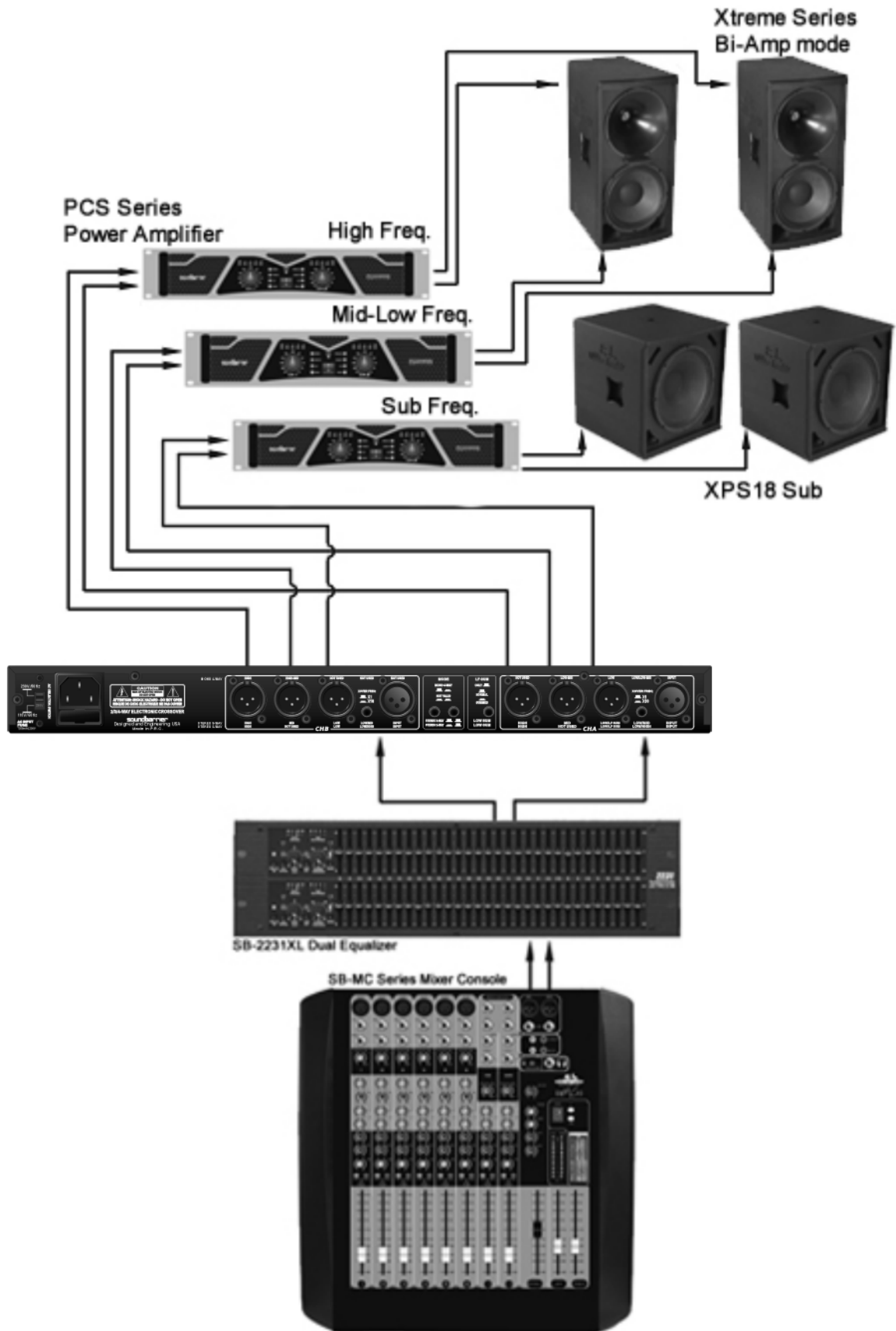
14- CROSSOVER FREQUENCY (x10 SWITCH)

15- CH 1 SIGNAL INPUT

# TYPICAL SET-UP (STEREO 2-WAY)

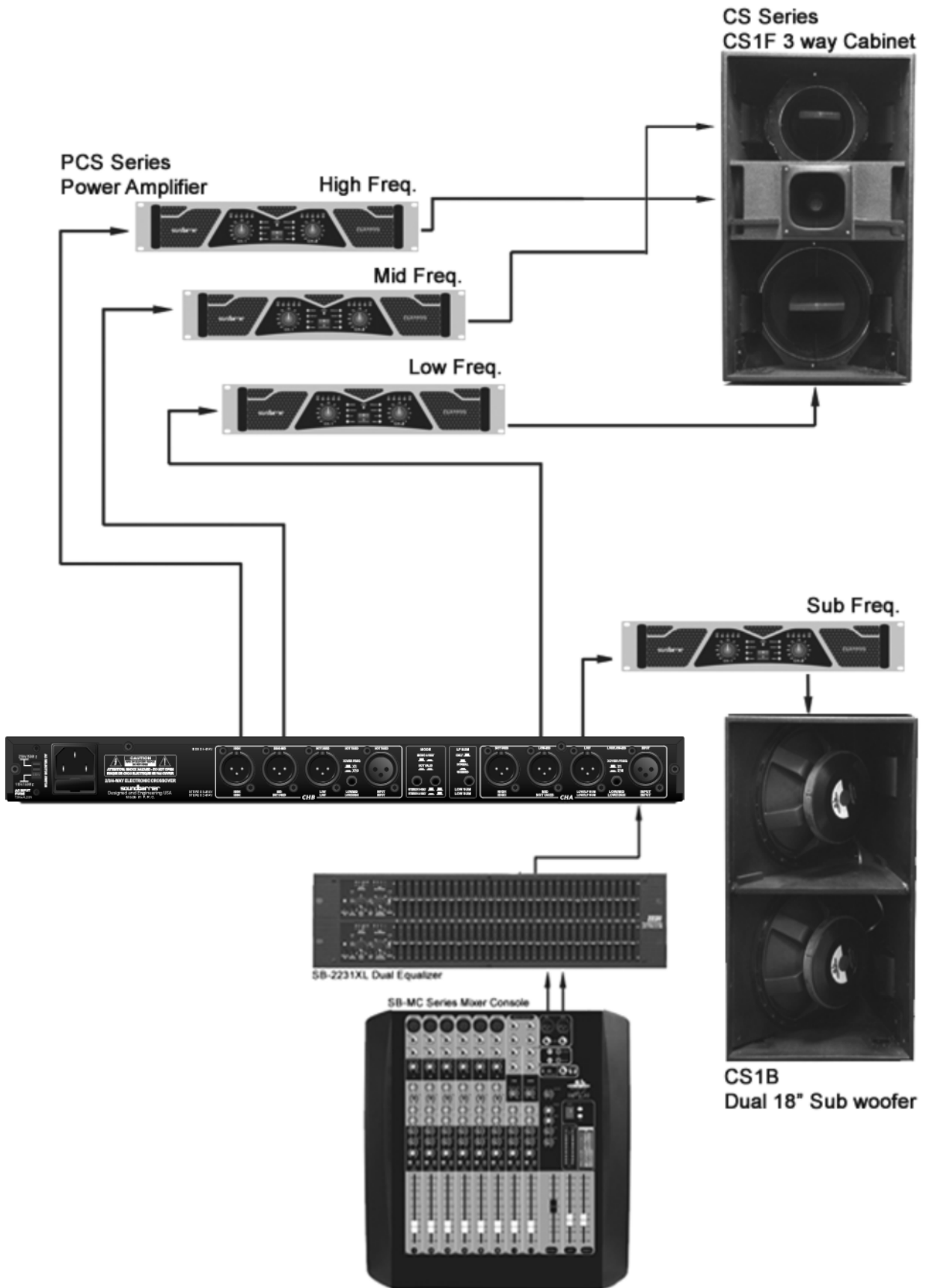


# TYPICAL SET-UP (STEREO 3-WAY)





# TYPICAL SET-UP (MONO 4-WAY)

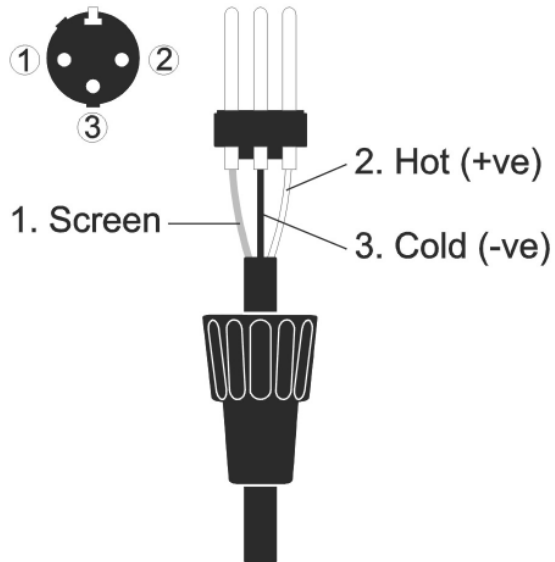


# SPECIFICATIONS

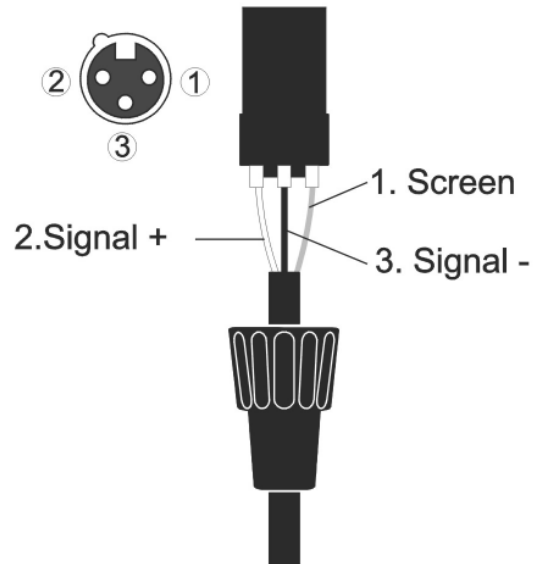
INPUT CONNECTORS	: XLR	
TYPE	: ELECTRONICALLY BALANCED/UNBALANCED, RF FILTERED	
IMPEDANCE	: BALANCED > 50KOhm , UNBALANCED > 25KOhm	
MAX INPUT LEVEL	: > +22dBu TYPICAL , BALANCED OR UNBALANCED	
CMRR	: > 40dB , TYPICALLY > 55dB AT 1KHz	
OUTPUT CONNECTORS	: XLR	
TYPE	: IMPEDANCED BALANCED/UNBALANCED, RF FILTERED	
IMPEDANCE	: BALANCED 2000hm , UNBALANCED 1000hm	
MAX OUTPUT LEVEL PERFORMANCE	: > +21dBu BALANCED/UNBALANCED INTO 2KOhm OR GREATER	
BANDWIDTH	: 20Hz TO 20KHz , +0/-0.5dB	
FREQUENCY RESPONSE	: < 3Hz TO > 90KHz , +0/-3dB	
SIGNAL TO NOISE	: REF +4dBu , 22KHz MEASUREMENT BANDWIDTH	
LOW OUTPUT	STEREO MODE	MONO MODE
LOW-MID OUTPUT	> 94dB	> 94dB
MID OUTPUT	> 93dB	
HIGH-MID OUTPUT		> 92dB
HIGH OUTPUT	> 90dB	> 88Db
DYNAMIC RANGE	: 106dB , UNWEIGHTED , ANY OUTPUT <0.004%	
THD + NOISE (INTERCHANNEL CROSSTALK)	: AT +4dBu , 1KHz , < 0.04%a AT +20dBu , 1KHz	
CROSSOVER FREQUENCIES	: < -80dB , 20Hz TO 20KHz	
STEREO MODE	LOW/HIGH	: 45Hz TO 960Hz OR 450Hz TO 9.6KHz (x10 SETTING)
	LOW/MID	: 45Hz TO 960Hz OR 450Hz TO 9.6KHz (x10 SETTING)
	MID/HIGH	: 450Hz TO 9.6KHz
MONO MODE	LOW/LOW-MID	: 45Hz TO 960Hz OR 450Hz TO 9.6KHz (x10 SETTING)
	LOW-MID/HIGH-MID	: 450Hz TO 9.6KHz
	HIGH-MID/HIGH	: 450Hz TO 9.6KHz
FILTER TYPE	: LINKWITZ- RILEY , 24dB/OCTAVE , STATE-VARILABLE	
	: ACTIVATES 40Hz BUTTERWORTH , 12dB/OCTAVE HIGH-PASS	
FUNTION SWITCH		
FRONT PANEL	: LOW CUT FILTER , ONE SWITCH PER CHANNEL	
	: INVERTS THE PHASE AT THE OUTPUT, ONE SWITCH PER OUTPUT	
REAR PANEL X10	: MULTIPLIES CROSSOVER FREQUENCY RANGE BY 10 , ONE	
	PER CHANNEL	
MODE LF SUM	: SWITCH PER CHANNEL	
	: SELECTS STEREO/MONO AND 2/3/4-WAY OPERATION	
	: SELECTS NORMAL (STEREO) OR MONO-SUMMED LOW	
INDICATORS		
STEREO OPERATION	: GREEN LIED	
MONO OPERATION	: YELLOW LED	
LOW CUT	: RED LED	
X10	: GREEN LED PER CHANNEL	
PHASE INVERT	: RED LED PER OUTPUT (3 PER CHANNEL)	
VOLTAGE OPERATION	: 115-230 VOLT./50-60Hz SELECTABLE.	
POWER CONSUMPTION	: 15 WATTS	
MAINS CONNECTION	: IEC 320 RECEPTACLE	
DIMENSIONS	: 482x44.5x146 mm.	
SHIPPING WEIGHT	: 2.5 Kg. 3.0 K	

# CONNECTIONS

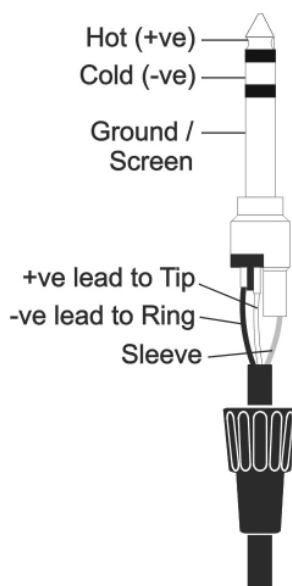
## Balanced Mic XLR



## Mix Outputs



## 3 pole jack Balanced



## 2 pole jack Unbalanced

