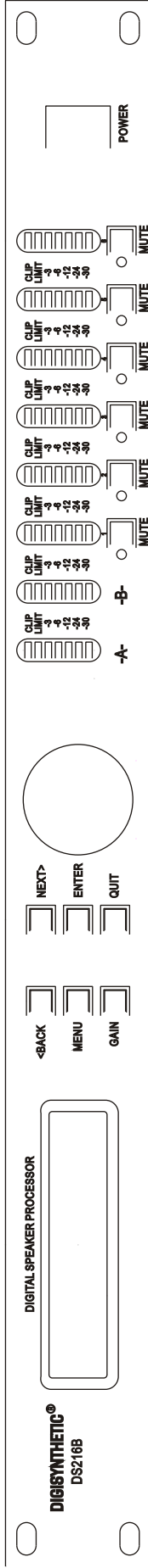


# DIGISYNTHETIC<sup>®</sup> PRO

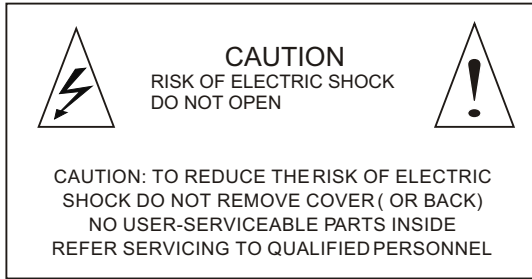
DIGITAL SPEAKER PROCESSOR MODEL DS216B



DS216B

DS214B

**Instruction Manual**



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instruction in the literature accompanying the appliance.

## IMPORTANT SAFETY INSTRUCTION

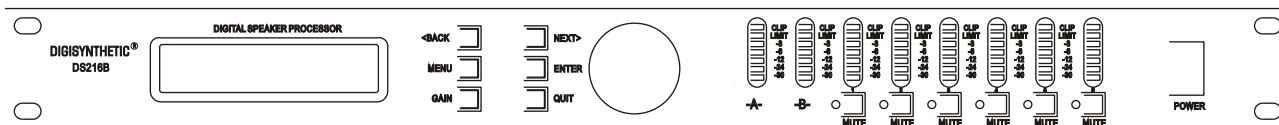
Please see below basic protection proceeding before using:

1. Please read all the safety instruction before using the product.
2. This product must be earthed. If it should be malfunction or break down, grounding provides a path of least resistance for electric current to reduce risk of electric shock.  
This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and earthed in accordance with all local codes and ordinance.  
**DANGER-** Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.
3. To reduce the risk of injury, close supervision is necessary when the product is used near children.
4. Do not use this product near water-for example, near a bathtub, washbowl, kitchen sink, in wet basement or near a swimming pool or the lake.
5. This product may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at 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.
6. This product should be located so that its location or position does not interfere with its proper ventilation.
7. This product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
8. The product should be connected to a power supply only of the type described on the operation instructions or as marked on the product.
9. 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.
10. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power-supply cord, do not pull on the cord, but grasp it by the plug.
11. Care should be taken so that object do not fall and liquid are not spilled into the enclosure through opening.
12. 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 been fallen, or liquid has been spilled into 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..
13. 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.
14. **WARNING-** Do not place objects on the product's power cord or place it in a position where anyone could trip over, walk on or roll anything over it. Do not allow the product to rest on or to be installed over power cords of any type. Improper installations of this type create the possibility of fire hazard and/or personal injury.

**SAVE THESE INSTRUCTIONS**

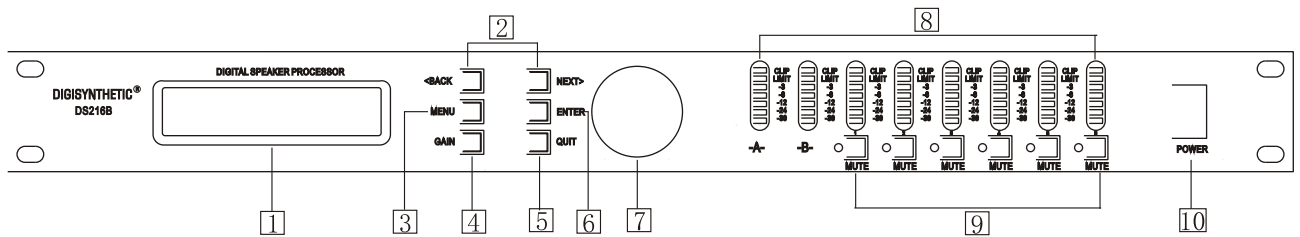
# Features

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## Main features:

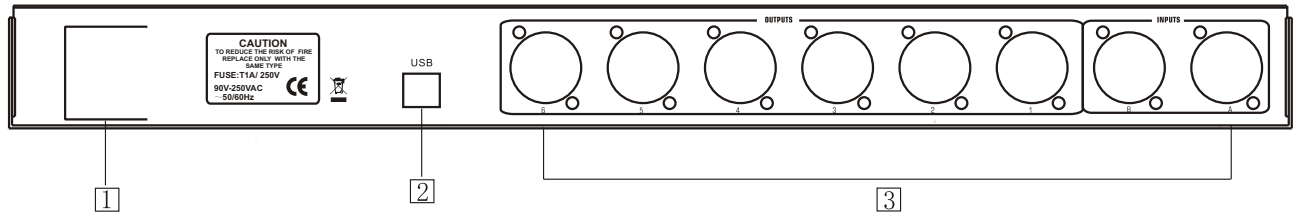
- ★ DS216B/DS214B are based on DSP technology speaker processor, high performance AKM A/D Ak5385
- ★ 3pcs 24 bit high precision DSP
- ★ Low distortion, high dynamic, frequency range: 20Hz~20kHz
- ★ DS216B is 2 input, 6 output, include 5 configuration model: 2×2way, 2×3way, 4way, 5way, 6way.
- ★ DS214B is 2 input, 4 output, include 4 configuration model: 2×2way, 3way, 4way, 2way sub.
- ★ Each model include input gain control, each channel include separate crossover controller.
- ★ 5 bands parametric equalizer, max. delay: 7ms.
- ★ Output gain and phase control, parameter lock to avoid mis-operation.
- ★ USB interface remote control, include PC software.
- ★ Each group parameter equalizer has 360(ISO)frequency, -12dB to +12dB gain.
- ★ Each group Q value is from 0.4 to 128, and provide Hi\_shelf, Lo\_shelf select function.
- ★ Separate limiter: Attack, Hold, Decay and threshold parameter for flexible configuration.
- ★ Each channel configure high pass, low pass 6dB, 12dB, 18dB, 24dB, 48dB. Butterworth, Linkwitz-Riley, Bessel frequency response curve.
- ★ 8×7 band input/output precision digital LED meter.
- ★ 2×20LCD backlit.



1. LCD: display menu and parameter
2. <BACK/NEXT>: direction shift button: switch the menu, adjust parameter value in some menus.
3. MENU: menu adjustment button.
4. GAIN: gain and parameter adjustment button, push the button again to switch the output channel.
5. QUIT: quit the menu.
6. ENTER: confirm button. Use as <Bypass> button on PEQ menu.
7. Param: parameter switch and adjustment.
8. Input, Output LED meter.
9. Output channel mute button.
10. POWER: ON/OFF switch.

## Rear panel

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1. Power Jack
2. USB interface
3. XLR input and output port

## 1. Xover Submenu

Push "MENU" button, use "BACK" "NEXT" "ENTER" to select X-OVER submenu,



Xover menu includes as below:

Load a xover: recall a stored model.

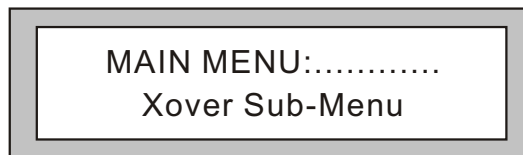
Design a xover; design a xover model, include mode type, stereo link control, input channel select.

Store a xover: Store all output setting of a X-OVER. There are 16 user memories. Each memory can have a name contains 16 characters. If the memory name is not edited, it is stored under the corresponding mode name.

Erase a xover: Delete a stored model.

## 2. Security submenu

Push MENU button, select Security Submenu by "BACK" "NEXT", "ENTER"



The locking model as follows:

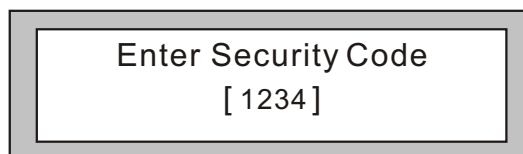
Change only: Parameters can be viewed, can not be adjusted. MUTE is valid

Change +View: Parameters can not be viewed, can not be adjusted. MUTE is valid.

Change +Mutes: Parameters can be viewed, can not be adjusted. MUTE is not valid

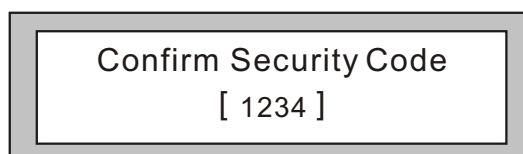
Everything: Parameters can not be viewed, can not be adjusted. MUTE is not valid.

Select a lock type and push "Enter" button.



A. Push "BACK" & "NEXT" to shift the cursor, rotate <PARAM> to change the character.

B. Push "ENTER" to confirm the password and display as follows.



C. Repeat procedure A and push ENTER button.

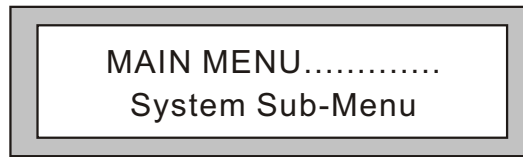
D. System is locked when log in with same password successfully, or the locking operation is invalid.

# Operation Instruction

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### 3. System submenu

Push "MENU" button, select Security Submenu by "BACK" "NEXT", "ENTER"



System submenu includes as below:

Input option: set input A / input B to link control or not

Wake up time: set system turn on status

Fade-in: Volume rise to memory model slowly

Mute hold: set all channels on mute.

### 4. Interface submenu

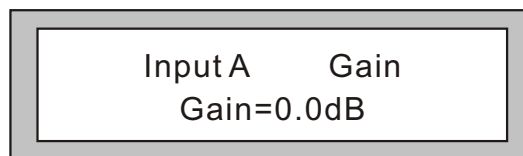
Interface submenu include: USB baud rate and address code setting. Band rate fixed as 38400 Remote ID Number fixed as 1

### 5. Parameter

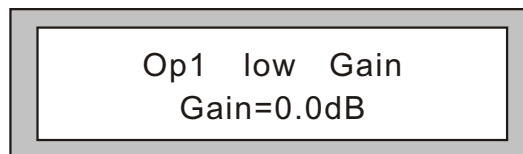
Push "Gain" to enter setup menu, push "Back" "Next" to switch menu.

A. Input gain: Input A, Input B, Gain adjust range is -40.0dB~+6.0dB, step in  $\pm 0.5$ dB.

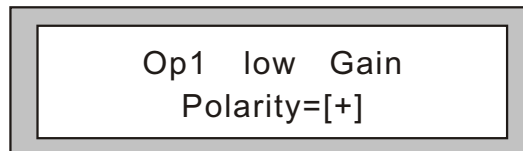
Rotate "Param" to adjust Gain value.



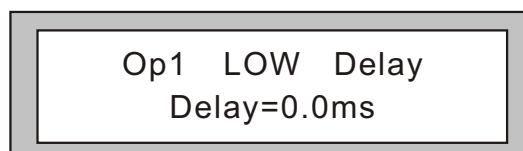
B. Output gain: Op1.....Op6. Gain range: -40.0dB ~ +6.0dB, step in  $\pm 0.5$ dB, Rotate "Param" to adjust Gain value.



C. Output phase: Polarity, [+], [-]. Each channel include separate phase control, Rotate "Param" to adjust phase.



D. Delay: each channel include separate delay control, adjustment range from 0ms~7ms, step in  $\pm 21$ us. Rotate "Param" to adjust delay time, show three units simultaneously.



## Operation Instruction

E. HPF & LPF: each channel include separate High Pass and Low Pass filter.

Op1 High HPF ▸  
 √4.00KHz Butwth 24dB

Op1 High LPF ▾  
 √4.00KHz Butwth 24dB

Push "Push\_Param" button to change parameter indicator "√" position, rotate "Param" button to change parameter.

Highpass: frequency range: 10Hz~16.0KHz

Low pass: frequency range: 35Hz~22.0KHz

Selectable slope:

Butterworth	6dB、12dB、18dB、24dB、48dB
Bessel	12dB、18dB、24dB、48dB
Linkwitz-Riley	24dB、48dB

Each channel includes 5 bands PEQ.

F. PEQ

Op2 LOW PEQ:2  
 √2.00KHz Q=3.0 +0.0dB

Push "Push\_Param" button to move "√" indicate parameter, rotate "Param" to adjust parameter.

Note: under PEQ menu, "Enter" is used as "Bypass".

" " means PEQ

" } " means Loshelf

" { " means Hishelf

" = " means PEQ Bypass

Freq: 20Hz~20.0kHz (360 ISO)

Q value: 0.4~128 (Hishelf、Loshelf)

Gain: -12dB~+12dB (±0.1dB)

Hishelf: frequency: 1.0K~20.0kHz

Loshelf: frequency: 20.0Hz~1.0kHz

Note: when using Hishelf, Loshelf, set Gain=0.0dB firstly, then change Qvalue to Hishelf/Loshelf.

G. Limiter

Op3 Mid limiter  
 Level=0.0dB

Op3 Mid limiter  
 hold=0.0ms

Op3 Mid limiter  
 ATTACK=12ms

Op3 Mid limiter  
 Decay=120ms

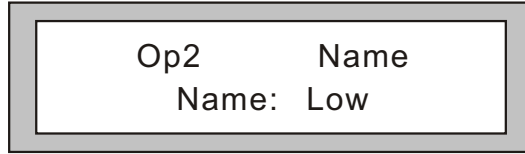


## Operation Instruction

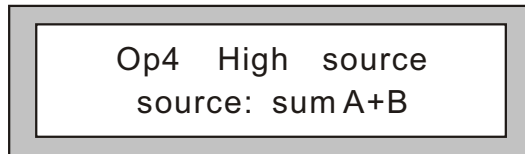
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Each channel include a separate Limiter, it includes: threshold LEVEL (-20dB~+15dB), attack time (1~100ms), Hold time (0~100ms), Decay time (10~1000ms).

H. Name of channel: Rotate Param to change the channel name.



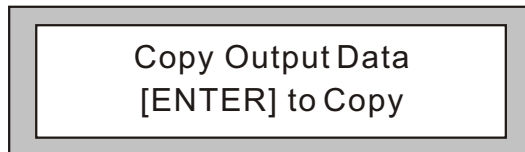
I. Input signal (Signal source selecting )



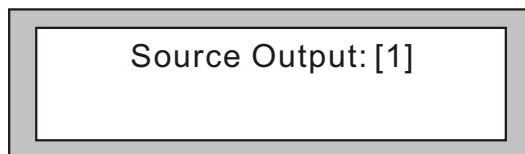
In this menu, rotate "Param" to change current channel.

Note: In output menu ( OpXX ), push "Gain" again to change output channel ( Op1... Op6, Op1.....Op6 )

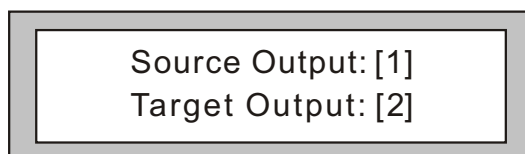
J. Copy function in channels



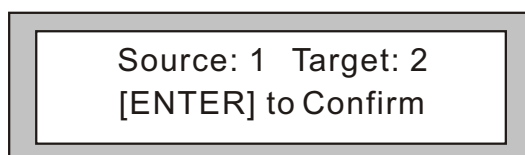
Press "enter" to enter source output selecting:



In this menu, rotate "Param" or press PREV, NEXT to change source output. Press "ENTER" to enter target output.

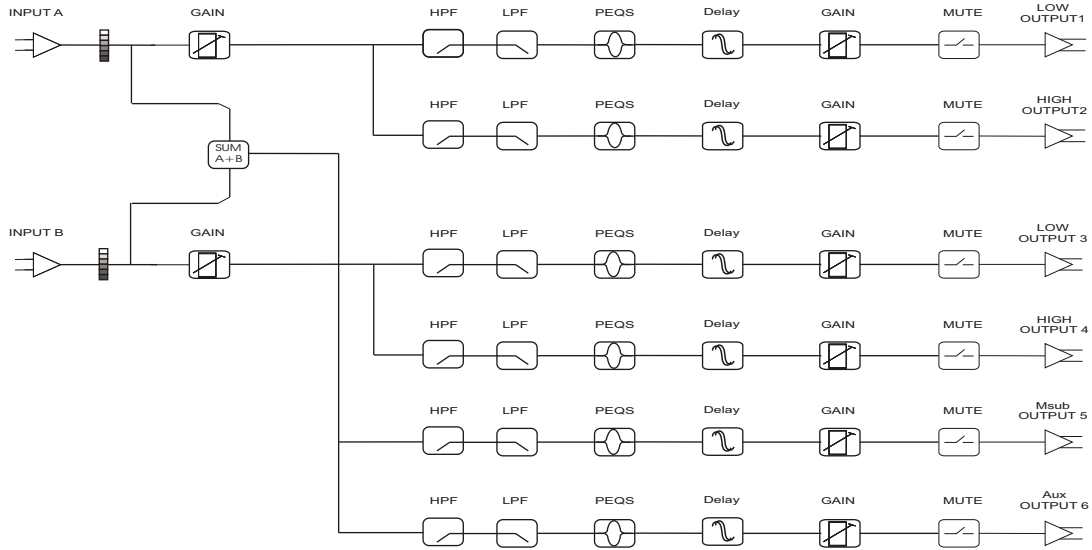


In this menu, rotate "Param" or press PREV, NEXT to change target output. Press "ENTER" to confirm channel copy.

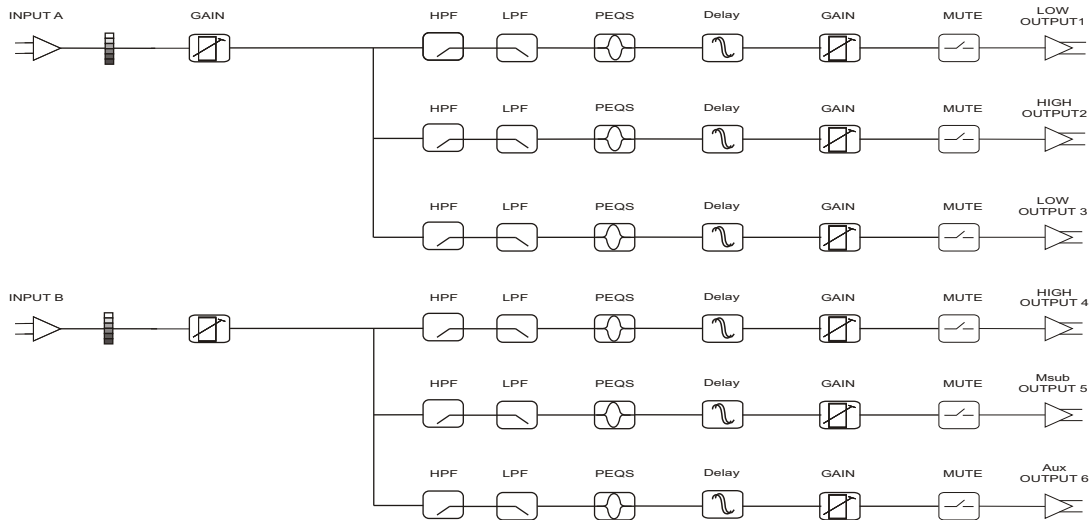


The parameters that can be copied in channels include all above parameters from A-H points, no copy for channel sources.

## DS216B 2X2 WAY+MSUM

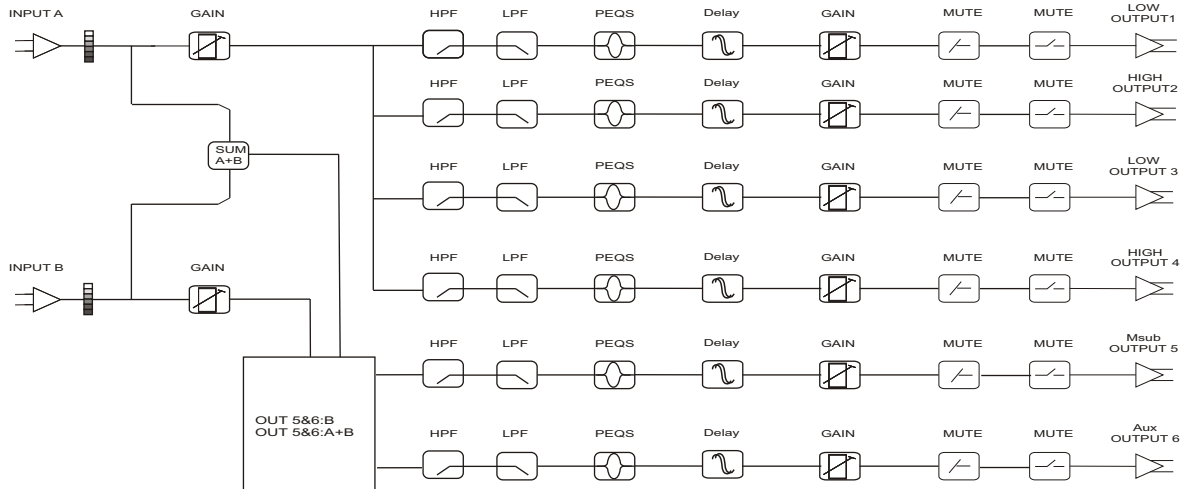


## DS216B 2X3 WAY

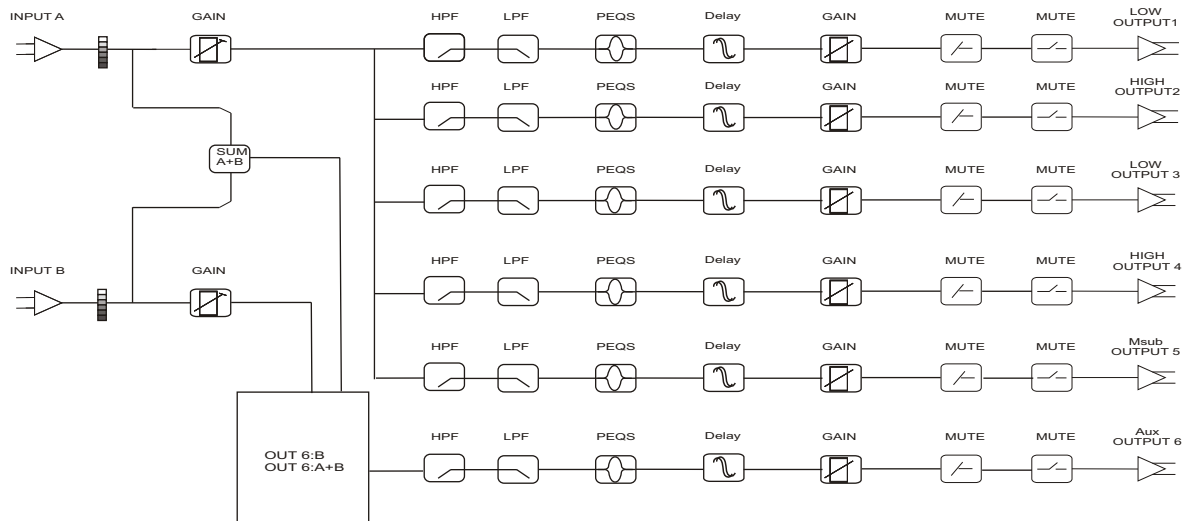


# Operation Instruction

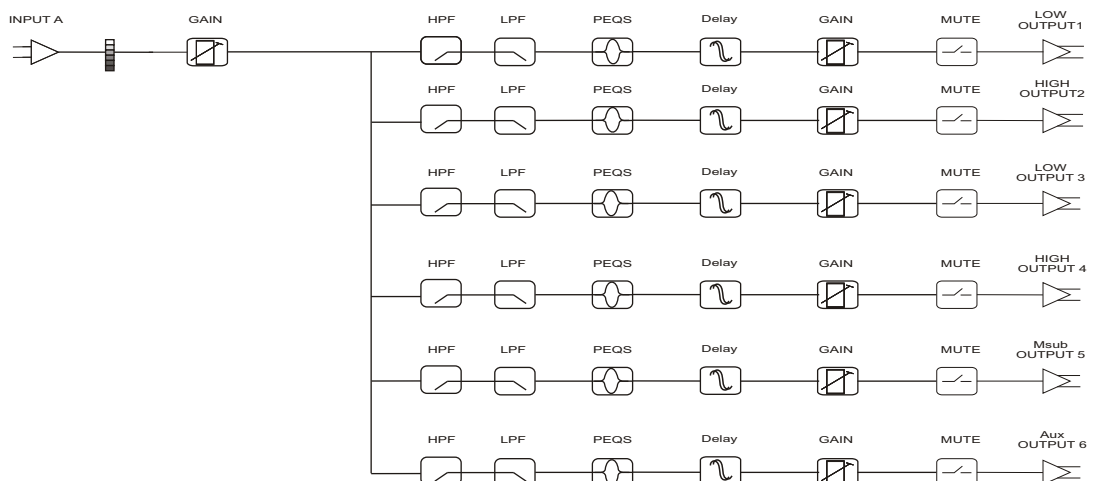
## DS216B 4WAY+2AUX



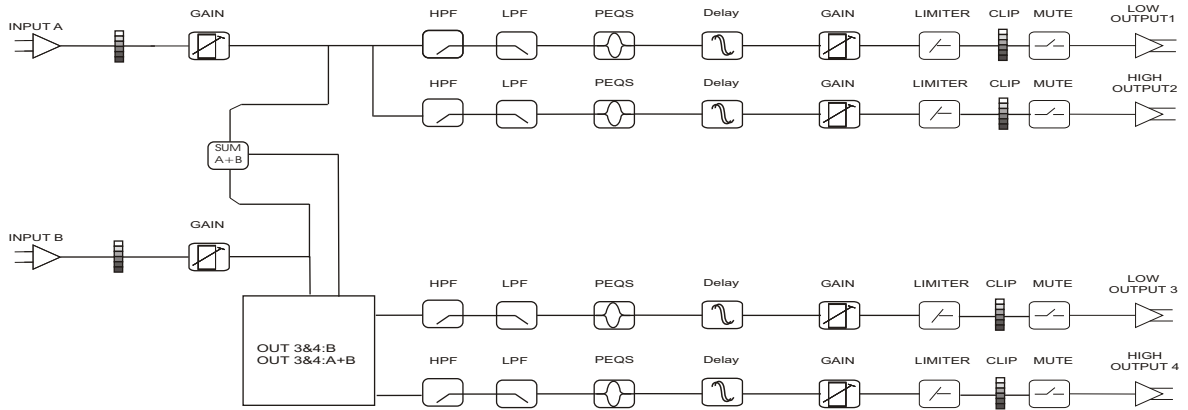
## DS216B 5WAY+1AUX



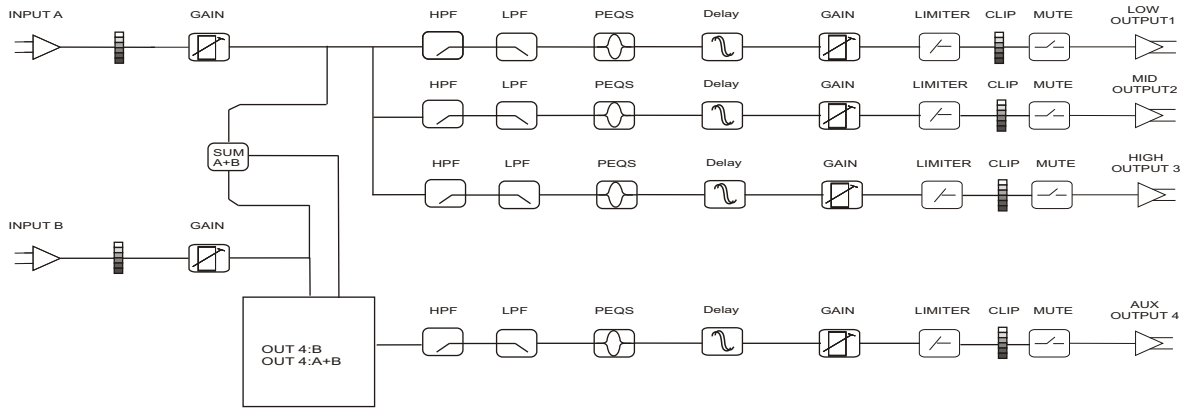
## DS216B 6WAY



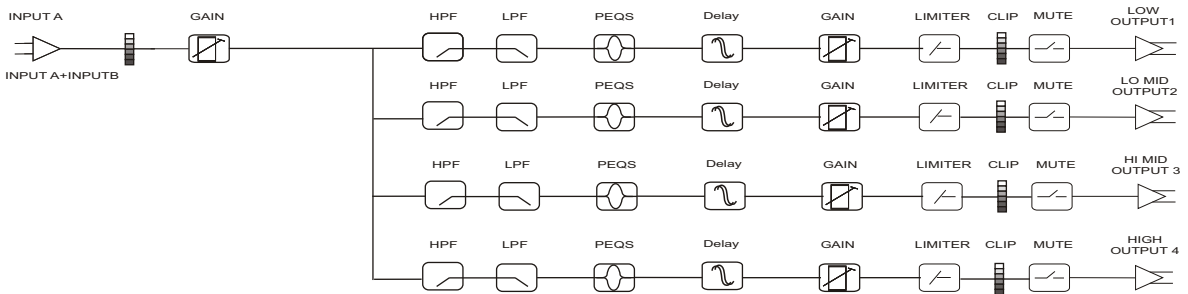
## DS214B 2×2WAY



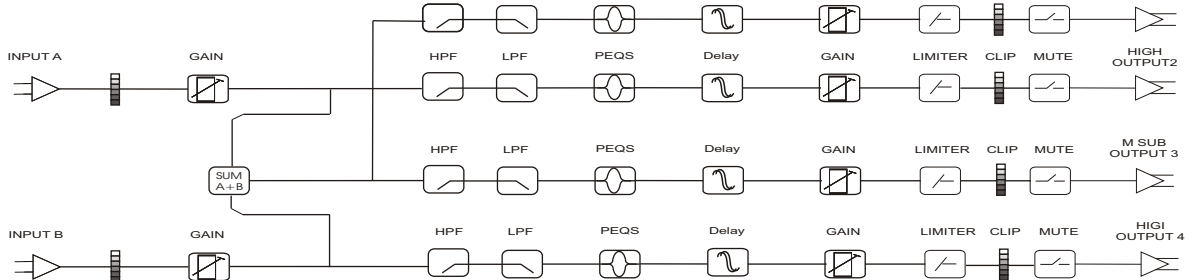
## DS214B 3WAY+1AUX



## DS214B 4WAY



## DS214B 2WAY MONO SUB



## Technical Specifications

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Input	
Impedance	10K $\Omega$ , electronic balanced input
CMRR	>50dB(30Hz~20KHz)
Output	
Impedance	<50 $\Omega$ , electronic balanced input
Maximum output level	V <sub>pp</sub> =4V balanced, V <sub>pp</sub> =7.6V unbalanced
Frequency Resp	20Hz~20.0kHz
Dynamic Range	>100dB
Distortion	0.01%(THD)
Maximum Delay	7ms
Output gain	-40dB~+6dB $\pm$ 0.5dB
Input gain	-40dB~+6dB $\pm$ 0.5dB
Parametric Equalizer	
Filter	
Gain	$\pm$ 12dB in 0.1dB steps
Central Freq	20Hz~20kHz 360 ISO
Q value	0.4~128, total 101 options
Shelving	
Lo-shelf:	20Hz~1kHz
Hi-shelf:	1kHz~20kHz
Shelf gain:	$\pm$ 12dB in 0.1dB steps
HPF&LPF	
Filter	
Frequency (high pass)	<10Hz~16.0kHz
Frequency (low pass)	35Hz~22.0kHz
Response curve	Butterworth 6dB, 12dB, 18dB, 24dB, 48dB Bessel 12dB, 18dB, 24dB, 48dB Linkwitz-Riley 24dB, 48dB
Limiter	
Threshold	-20~+15dB
Attach time	1~100ms
Holding time	0~100ms
Decay time	10~1000ms
LCD	2 $\times$ 20
Input LED	-30dB, -24dB, -12dB, -6dB, -3dB, Limit, Clip
Output LED	-30dB, -24dB, -12dB, -6dB, -3dB, Limit, Clip
Connectors	
Input	XLR-3F
Output	XLR-3M
USB	
Power	90V~250V, 50Hz
Fuse	T1AL/250VAC
Weight	2.6KG
Size	480mm $\times$ 44mm $\times$ 220mm

# **DIGISYNTHETIC CO.LTD**

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sale@digisynthetic.com

VERSION: V1.0