



User manual

Loudspeaker management system

dcS1



IMPORTANT SAFETY INSTRUCTION

Please read all the safety instruction before using the product.

1. This product must be earthed. Grounding provides a path of least resistance for electric current to reduce risk of electric shock.

This product is equipped with a power cable including 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 technician 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 technician.

2. The product should be connected to a power supply only of the type described on the operation instructions or as marked on the product.

3. This product may be equipped with a polarized line plug.

4. 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 power cable, but grasp it by the plug.

5. Do not use this product in humid environment such as bathtub, wet basement, near a swimming pool, lake or sea.

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. Care should be taken so that object or liquid do not fall or are not spilled into the enclosure through opening.

9. The product should be serviced by qualified service personnel when :

- A. The power-supply cord or the plug has been damaged
- B. Objects have been fallen, or liquid has been spilled into the product
- C. The product has been exposed to rain or humidity environment
- D. The product does not appear to operate normally or exhibits a significant change in performance
- E. The product has been dropped or the enclosure damaged.

10. 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.

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.

Conformity according to Directive 73/23/EEC : DCS1 comply with the requirement set out in the Council Directive on the Approximation of the Laws of the Member States relating to electrical equipment designed for use within certain voltage limits (73/23/EEC)

Test standard :EN55013 : 2001 + A1 : 2003 / EN55020 : 2002 / EN61000-3-2 : 2000 / EN61000-3-3 :1995+A1 :2001/ EN60065 :1998 (IEC60065 :1998)

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Features

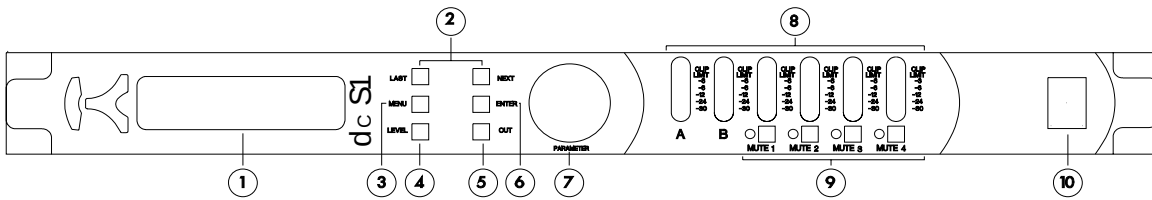
The DCS1 is a full integrated digital speaker system controller, based on DSP technology. The DCS1 is a 2 input - 4 output controller system including 4 configurations:

- 2 x 2 ways
- 2 ways + sub
- 3 ways or 4 ways

The DCS1 include:

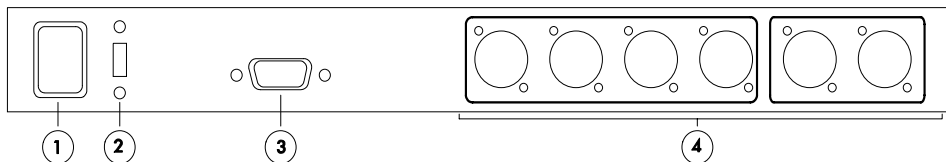
- Input gain control
- Separate crossover control
- Filter section is available as 6dB, 12dB, 18dB, 24dB, 48 dB slope in Butterworth, Linkwitz Riley or Bessel type
- 5 band parametric equalizer based on a 31 frequency band (ISO) +/- 12dB gain & Q value is available from 0.5 up to 10
- EQ section is also configurable as HI or LOW shelve type
- delay (7ms max)
- Output gain and polarity control
- Parameter lock to avoid miss operation
- RS 232 interface for remote control via PC software (include)\$
- Separate limiter with Attack, Hold, decay and threshold adjustable parameter
- 6 x 7 input/output precision digital LED meter
- 2 x 20 LCD backlit

Front panel



- 1) **LCD screen**: display menu and parameter information
- 2) **LAST / NEXT** : shift button. Switch the menu adjust parameter value in some menus
- 3) **MENU** : menu adjustment button
- 4) **LEVEL** : gain and parameter adjustment button in some menus
- 5) **OUT** : escape from menu
- 6) **ENTER** : confirm button
- 7) **PARAMETER** : Parameters switch and value adjustment
- 8) **INPUT / OUTPUT LED** meter
- 9) **Mute** : output channel mute button
- 10) **ON/OFF** power switch button

Rear Panel



- 1) Power jack Plug in
- 2) Voltage adjustment switch (110-220V)
- 3) RS 232 interface connector
- 4) XLR input and output terminal

Operation

1) Crossover Sub-menu

Push MENU button, Use LAST / NEXT / ENTER button to adjust crossover sub-menu which include:

- **Load a crossover**: adjust a stored mode
- **Design a crossover**: design crossover mode including mode type, stereo control and input channel adjustment.
- **Store a crossover**: storing section of all crossover design. There are 40 user memories. Each memory may have a denomination containing up to 16 letters or/and characters. If memory name is not edited the program name is stored as the corresponding mode name.
- **Erase a crossover**: delete store mode

2) Security Sub-Menu

Push MENU button, Use LAST / NEXT / ENTER button to adjust Security Sub-Menu which include:

- **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 note Valid
- **Everything**: parameters can not be viewed, can not be adjusted. MUTE is note Valid

Select a loc type and push ENTER

Enter Security Code
[1234]

- 1) Push BACK and NEXT button to shift the cursor, turn PARAMETER to change the character
- 2) Push ENTER to confirm the password and display as follows

Confirm Security Code
[1234]

- 3) Repeat procedure 1 to confirm and push Enter button
- 4) System is locked confirm password is the same

3) System Sub-menu

- **Wake up time**: Fade in = Gain rise to memory mode slowly.
- **Mute hold**: all channels are muted
- **Delay time / Distance**: Delay unit display. Time (ms), Meters, feet

4) Interface Sub-menu

Interface Sub-menu include RS232 baud rate and address code setting.

Select from 2400, 4800, 9600, 19200, 38400 baud rate according to PC configuration

Remote ID number: 1~64

5) Parameters

Push LEVEL to enter setup menu, push LAST and NEXT to switch menu, rotate PARAMETER to adjust value

A) Input gain: Input A, Input B, Gain adjustment (range -40dB~+6dB / 0.5 db step)

Input A	Gain
Gain = 0.0dB	

B) Output gain: Op1 ... Op4

Op1	Low	Gain
Gain = 0.0db		

C) Output Polarity: Polarity [+] or [-]

Op1	Low	Gain
Polarity = [+]		

D) Delay: adjustment range is from 0ms~7 ms / 0.5ms step

Op1	Low	Gain
Delay = 0.0ms		

E) HPF & LPF: High pass & low pass filter

Op1 High HPF
4.00 KHz Butwth 24dB

Op1 High LPF
4.00 KHz Butwth 24dB

Push PARAMETER button to change parameter cursor position, rotate PARAMETER button to change parameter value.

- High pass: frequency range 10Hz ~16 KHz
- Low pass: frequency range 35Hz ~22 KHz

F) PEQ: parametric equalization

Op1 Low PEQ: 2 ✧
2.00 KHz Q = 3.0 +0.0dB

Push PARAMETER Button to change parameter cursor position, rotate PARAMETER button to adjust parameter value

Note:

- In PEQ menu, ENTER is USED for "Bypass"
- " ✧ " : PEQ on
- " { " : Loshelf on
- " } " : Hishelf on
- " = " : PEQ bypass

EQ frequency range : 20Hz~20kHz, 31 band ISO

Q value: 0.51~10

Gain: -12dB~+12dB / 1dB step

Hishelf 1 KHz~20 KHz / Loshelf 20Hz~1 kHz

When using Hishelf or Loshelf, set gain to 0.0dB in order to change Q value to Hishelf or Loshelf

G) Limiter:

Limiter includes the following settings:

- Level : -20 dB~+15dB
- Attack : 1~100ms
- Hold : 0~1000ms

- Decay 0~1000ms

Op3 Mid Limiter
Level = 0.0dB

Op3 Mid Limiter
hold = 0.0ms

Op3 Mid Limiter
Attack = 1 ms

Op3 Mid Limiter
Decay = 0 ms

H) Name of channel:

- Rotate PARAMETER to change the channel name

Op4 Name
Name Low

I/ Input signal:

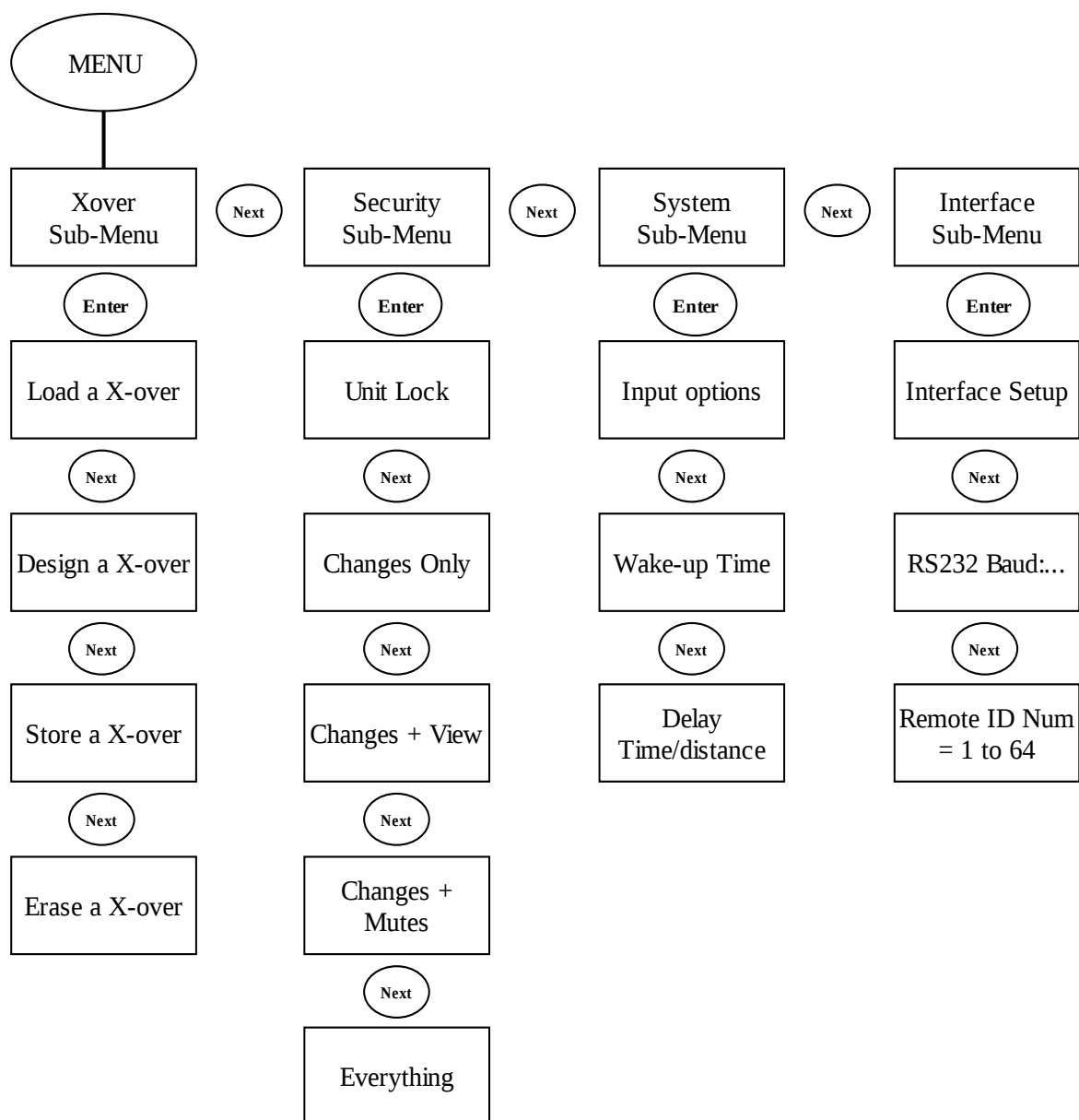
- In this menu, current input channel is display. Parameters can't be adjusted

Op4 High source
Source : sum A+B

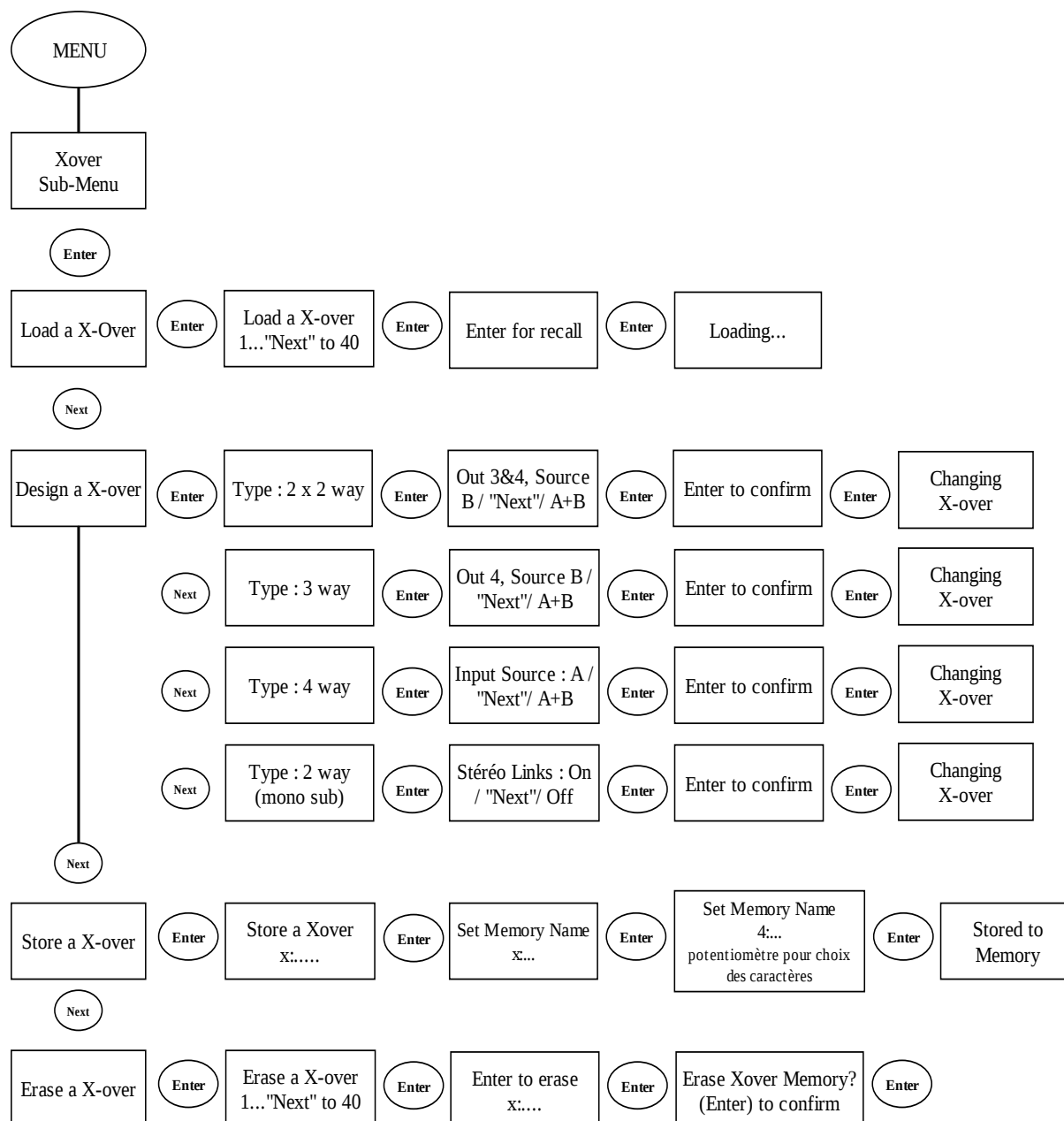
User memories list

1. S10.1
2. S10.1 + MB1
3. S10.1 + C2
4. S12.1
5. S12.1 + MB1
6. S12.1 + C2
7. VS8
8. VS8 MONITORING
9. VS8 + MB1
10. VS12
11. VS12 MONITORING
12. VS12 + C2
13. VS12 + MP215
14. VS15
15. VS15 MONITORING
16. VS15 + C2
17. VS15 + MP215
18. MP15
19. MP15 + MP215
20. MP15 + MP218
21. CXT10
22. CXT10 + CXT15B
23. CT15 + CT50S
24. CT30 + CT50S
25. PA210
26. PA210 + CB18
27. PA220
28. PA220 + CB18
29. PA230
30. PA230 + CB18

Main menu

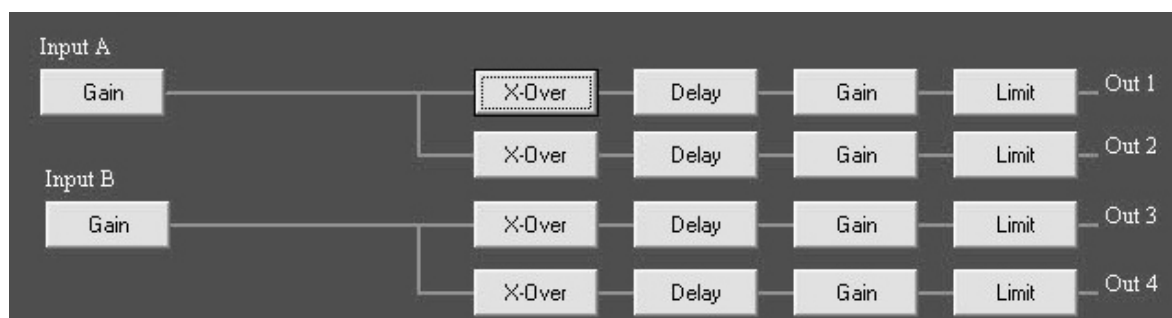


X-Over menu

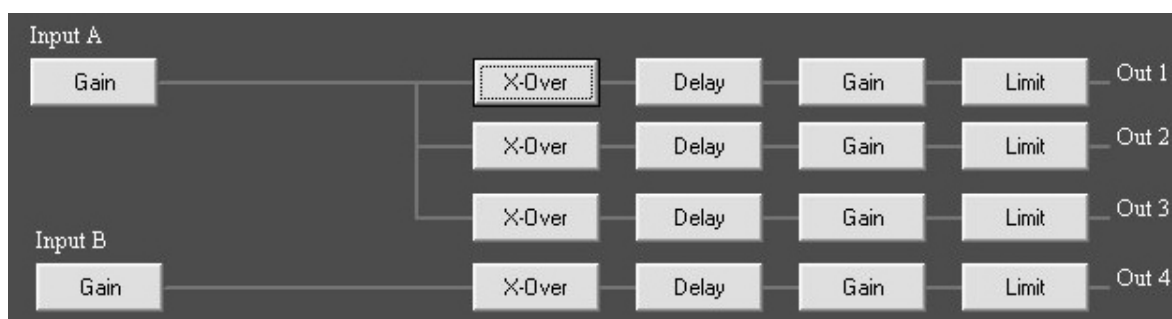


Software

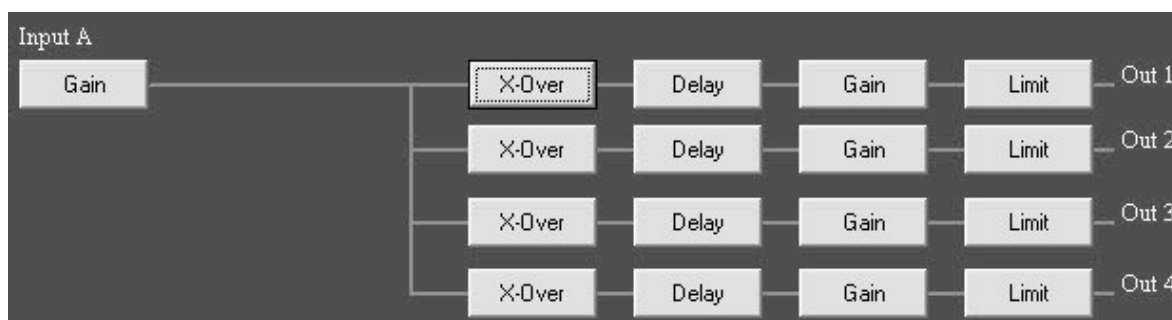
2 x 2 way filter



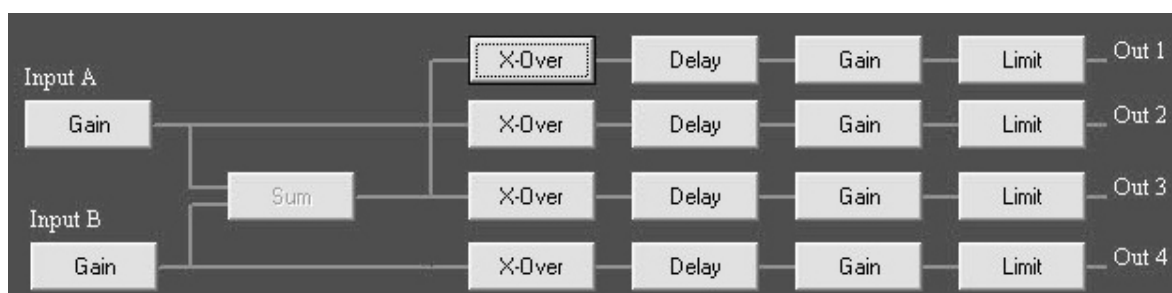
3 way+ aux filter



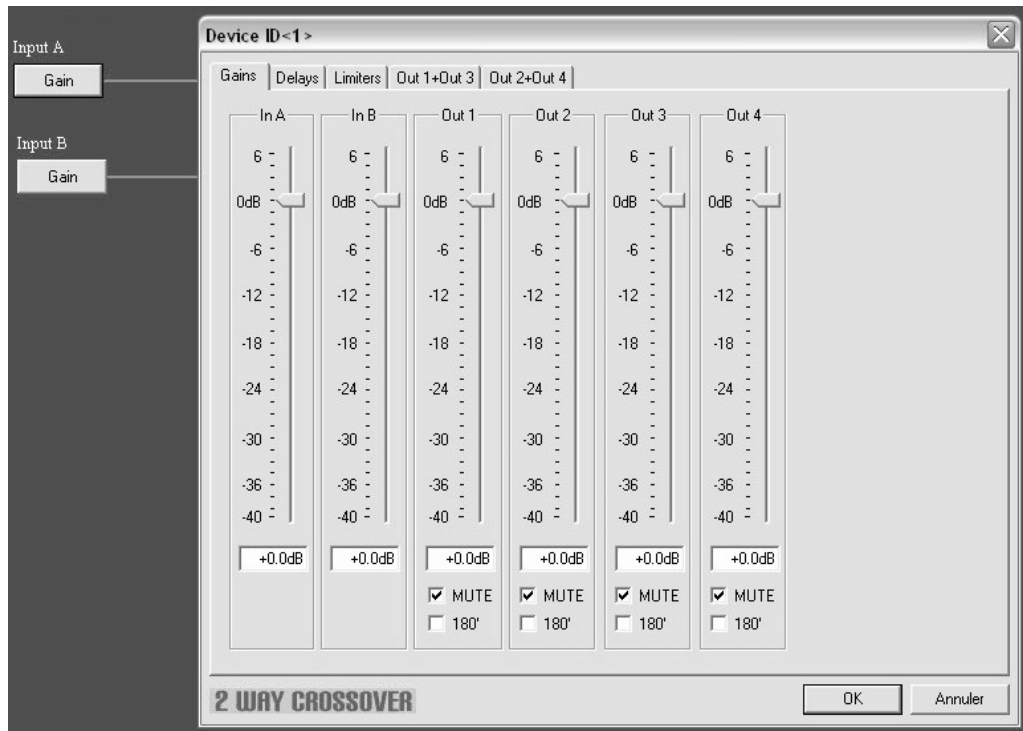
4 way filter



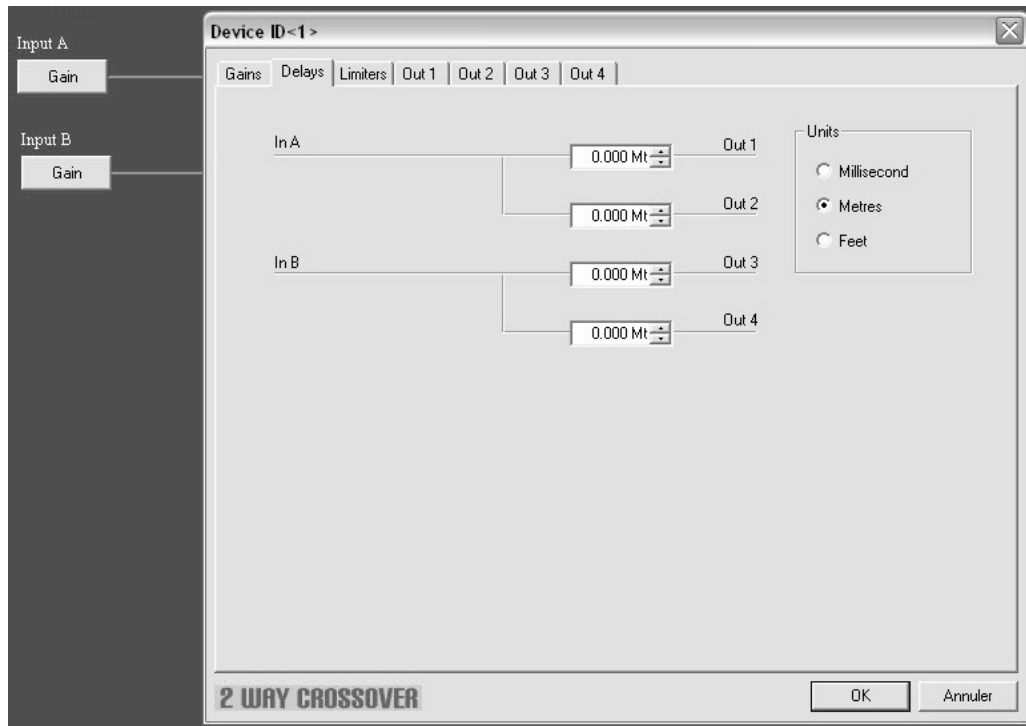
2 way mono sub filter



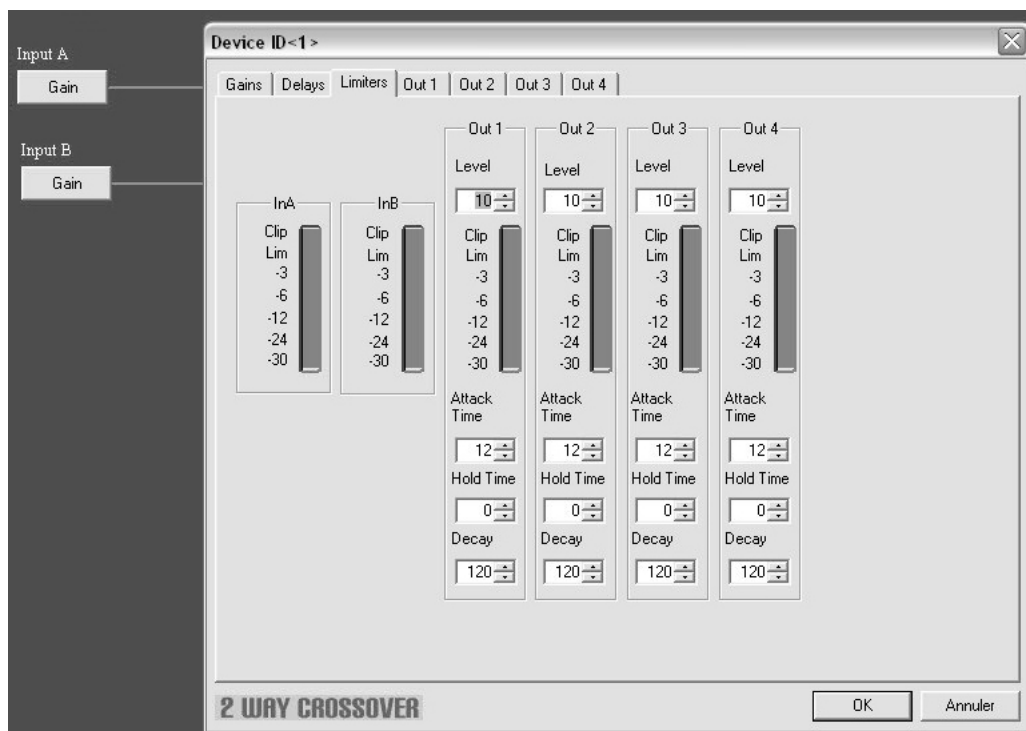
In / Out gain



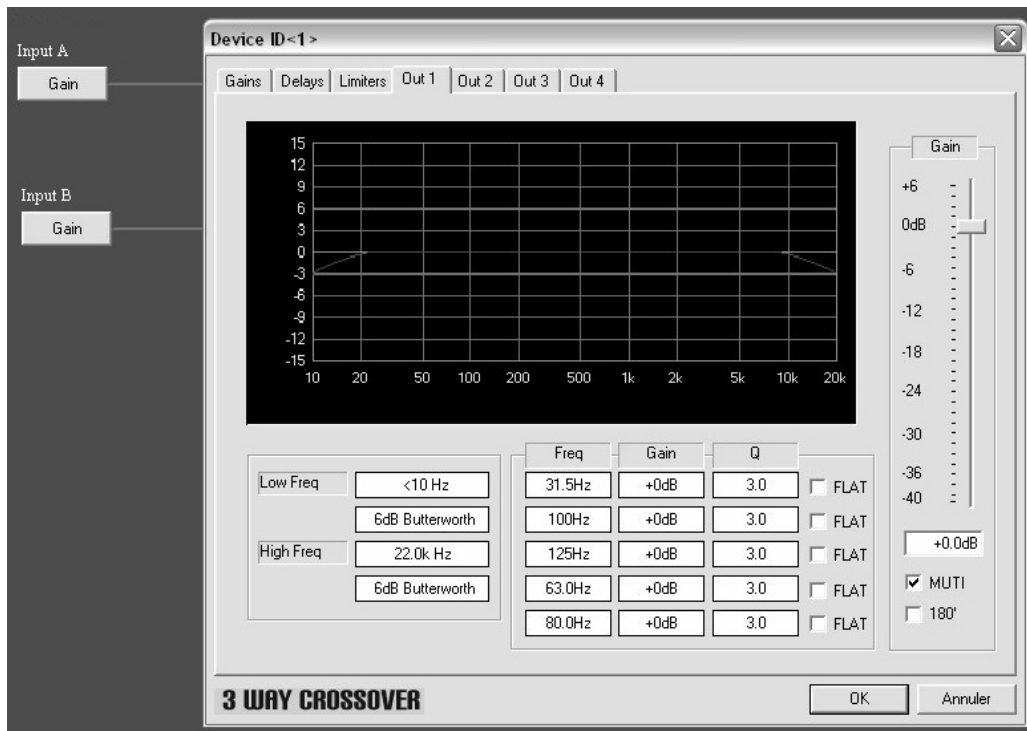
Delay



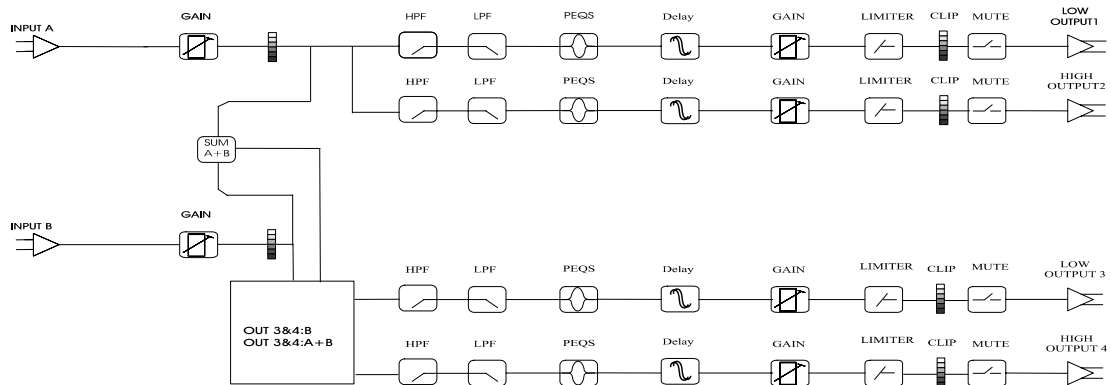
Limiter



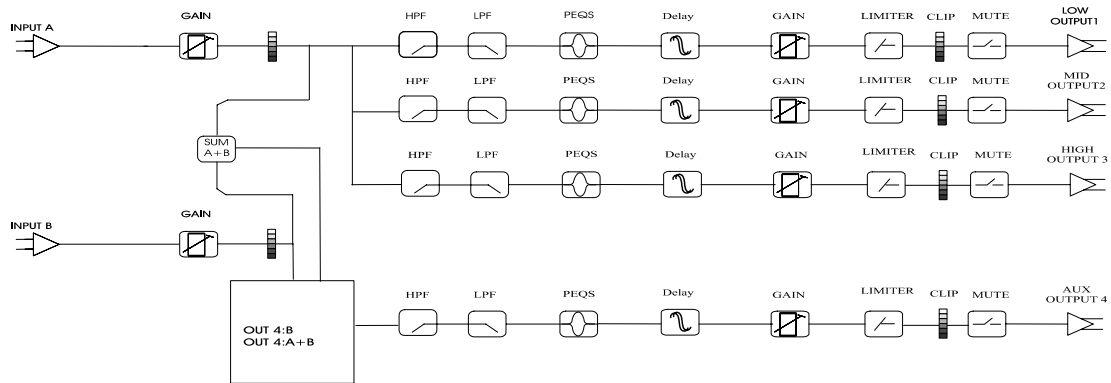
Filter and equalization settings



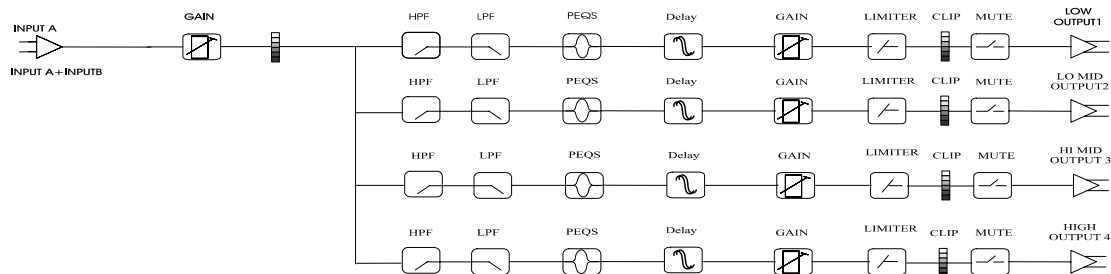
DCS1 2 x 2WAY



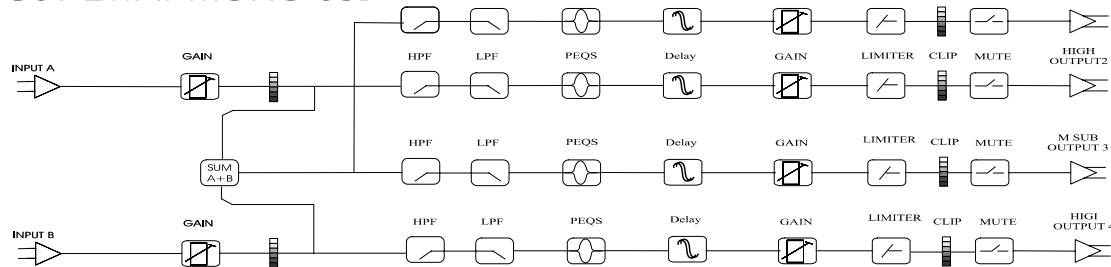
DCS1 3WAY+1AUX



DCS1 4WAY



DCS1 2WAY MONO SUB



Technical specifications

Input section	
Impedance	10 KOhms, electronically Balanced
CMRR	> 50dB (30Hz~20 KHz)
Output Section	
Impedance	> 50 ohms
Maxim output electrical level	Vpp=7.6V
Frequency Response	20Hz~20.0kHz
Dynamic Range	> 110 dB
Distortion	0.01% (THD)
Maximum Delay	7ms
Input gain	-40dB ~ +6dB +/- 0.5dB
Output gain	-40dB ~ + 6dB +/- 0.5dB
Parametric Equalizer	
Gain	+/- 12dB in 1dB steps
Central Freq.	20Hz ~ 20 kHz 31band ISO
Q value	0.5 ~ 10
Shelving filter	
Lo-shelf :	20Hz ~ 1kHz
Hi-shelf :	1kHz ~ 20kHz
Shelf gain :	+/-12dB in 1dB steps
HPF&LPF filter	
Frequency (high pass)	10Hz~16.0 kHz
Frequency (low pass)	35Hz~22.0 kHz
Response curve	Butterworth: 6dB / 12dB / 18dB / 24dB / 48dB Bessel: 12dB / 18dB / 24dB / 48dB Lintwhite-Riley: 24dB / 48dB
Limiter	
Level	-20dB ~ +15dB
Attach time	1 ~ 100ms
Holding time	0 ~ 100ms
Decay time	10 ~ 1000ms
LCD	2 x 20
Input LED	-30dB,-24dB,-12dB,-6dB,-3dB, Limit, Clip
Output LED	-30dB,-24dB,-12dB,-6dB,-3dB, Limit, Clip
Connectors	
Input	2 x XLR-3F
Output	4 x XLR-3M
Rs232	1 x
Power	220V/AC50Hz, 110V/AC 50Hz
Weight	3.6KG
Size	480mm x 44mm x 160mm