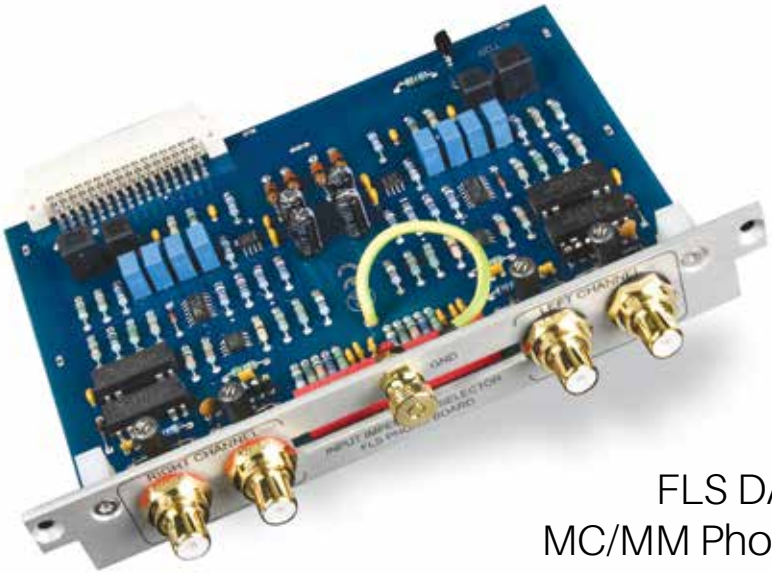
AUDIA FLIGHT

(한글설명서)



FLS DAC
MC/MM Phono
RCA inputs
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Owner's manual

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FLS DAC board

본 설명서는 FLS 시리즈 제품 (FLS1, FLS9, FLS10)에 장착 가능한 DAC모듈이 사용법을 설명합니다. 최상의 음질을 위해서 DAC 장착 후 최초 100시간은 디지털 신호를 연결하고 앰프를 계속 작동하여 에이징하시길 바랍니다.

FLS DAC board has been designed with intention of being the best D/A con-verter board complement for FLS series (currently the preamplifier FLS 1, the integrated amplifiers FLS 9 and FLS 10). The board has already been run for about 50 hours during which conformity and operating tests have been also carried out. For best performance we advice you to go on running for 100 hours more. Remember that it means in operating presence of signal.

Connection (연결)

보드를 장착하기 전에 모든 오디오 시스템의 전원이 차단 된 것을 확인 바랍니다. DAC 보드를 장착하면 앰프에는 5개의 디지털 입력이 추가됩니다. 이 5개의 디지털 입력은 전면의 Input 셀렉터와 볼륨 노브를 사용하거나 리모컨의 + – 버튼으로 선택할 수 있으며 선택된 입력은 전면의 표시창에 나타납니다.

Before connecting any audio cables, be sure that all components in your system are powered off. When your FLS unit is equipped with this DAC board, five new digital inputs will be added. These five inputs are available on the display by using input selector and volume knob or with the IN and + / – keys of remote control.

입력 번호와 입력단자의 타입은 다음과 같습니다.

Here is a table for these digital inputs:

Input name 입력번호	Type 입력단자 타입	Specifications 사양
DIGIT 1	optical	Toslink
DIGIT 2	optical	Toslink
DIGIT 3	AES/EBU	Balanced, XLR plug, 110 ohm
DIGIT 4	S/PDIF coaxial	Single ended, RCA plug, 75 ohm
DIGIT 5	USB	USB A/B cable

적절한 연결 케이블을 이용하여 디지털 소스기기와 디지털 입력단자를 연결하십시오.

Connect each input you want to use with the source using proper and high quality cable.

전면 표시창의 윗 줄에 선택된 입력번호, 디지털신호의 포맷, 샘플링주파수가 우측 그림과 같이 표시됩니다.

When a digital input is selected, its name appears on first line of the screen's display followed by the format of digital signal locked and its sampling rate frequency.

SET menu configuration (환경 설정 메뉴)

DAC보드를 연결하면 환경설정 메뉴에 3개의 새로운 기능이 추가되어 보여집니다. 이 세 기능은 5개의 디지털 입력에 관한 것입니다. 아래 표에서 청색으로 표시된 부분이 새로 추가된 DAC 환경설정 메뉴입니다.

Connecting the FLS DAC board, the software provides three new additional functions of SET menu configuration. These functions only apply to the five digital inputs of FLS DAC board that are also concerned by some of the pre-existing functions of the SET menu. Here is a table of all the functions available by SET menu, blue highlighted entries are referred to DAC settings.

Keys actions	Screen display	Function
SET	GAIN INPUT	Gain setting of each input
1 x (+)	NAME INPUT	Rename each input
2 x (+)	ACTIVE INPUT	Activation mode of each input
3 x (+)	DIRECT INPUT	Direct connection mode of each input
4 x (+)	IR	Remote control mode
5 x (+)	MUTE	Level mute setting (-30 dB or -90 dB)
6 x (+)	**PCM FILTER**	**PCM filter choice**
7 x (+)	**DSD FILTER**	**DSD filter choice on USB input**
8 x (+)	**DITHER ACTIV**	**PCM dithering mode**
9 X (+)	LOAD DEFAULT	Reset of the configuration
10 X (+)	SOFTWARE	Software version

환경설정은 전면의 SET버튼이나 리모컨의 SET버튼으로 들어가고, 메뉴간 이동은 볼륨노브 또는 + – 버튼으로 이동합니다. 이동하면 선택할 수 있는 기능이 깜박이며 그대로 두면 선택된 기능이 잠시 후 자동적으로 확정되고 깜박임이 사라집니다. 잠시 후 상위 메뉴로 또는 초기 메뉴로 자동적으로 화면이 바뀝니다. (다른 기기들과 달리, Audia 에는 선택을 확정하는 OK버튼이 따로 없습니다).

Entering this mode is done by pressing SET button on front panel or the SET key of the remote control. Navigation is done by rotating volume knob on front panel or + / – keys of remote control. SET key allows you to access each item. Rotating clockwise the volume knob or pressing + key allows you to scroll down the different modes in the order of table above. Rotating counter-clockwise volume knob or pressing the – key it will scroll up. The same actions are also used to scroll through sub-modes. Choices are indicated by flashing characters on display and scrolled by using volume knob or + / – keys. Confirmation of selection is effective after a few seconds without any action and after end of flashing. Heading (or sub-heading) is displayed again to move to another one or after few seconds it returns to the initial screen. All settings are stored. Here are the new functions of SET menu.

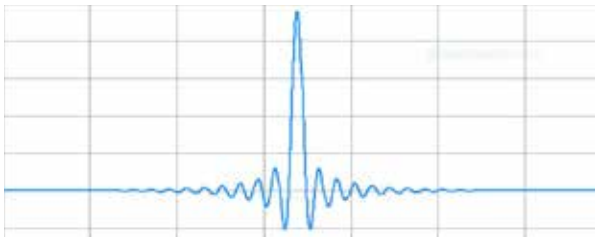
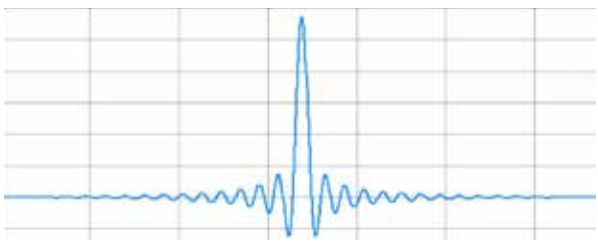
• mode SET PCM FILTER (6) PCM 필터 설정

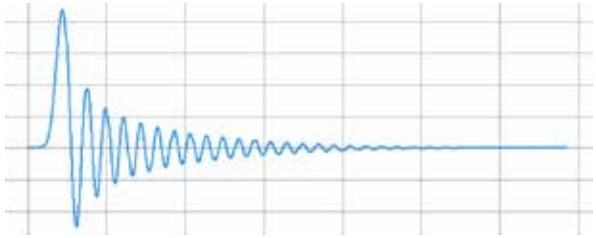
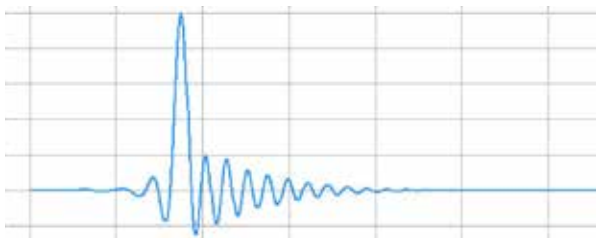
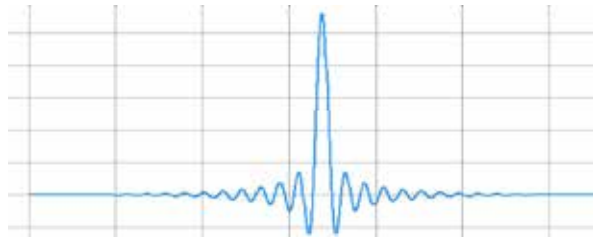
이 (6번) 메뉴는 디지털 입력에 적용되는 PCM필터를 선택할 수 있습니다. 총 7개의 필터가 있으며 각기 주파수를 감쇠시켜 소리에 변화를 줍니다. (아래 그림 참조)

이 메뉴를 선택하면 위 그림처럼 표시창 둘째 줄에 입력번호와 선택된 PCM필터 번호가 표시됩니다. 디지털 입력번호가 깜박이고 잠시 후 우측의 필터번호가 깜박입니다. 볼륨노브로 필터번호를 변경하고 가만 두면 잠시 후 변경된 내용이 자동 저장됩니다.

By this function you can choose PCM filter is applied to each digital input. Each one of the 7 filters (from 0 to 6) have its roll-off frequency and slope that affect slightly the sound. See table to illustrate differences among the 7 PCM filters. Upon entering this mode, display shows one of digital inputs on second line. By acting SET, you confirm the selection of this input, otherwise you can choose another input with volume knob or + / – keys and confirm choice with SET. The number of the PCM filter will then go on flashing on the right side of this second line. It will be validated after few seconds without action and the character stops flashing. Otherwise, you can choose another number of PCM filter with the volume knob or the + / – keys. Validation is after few seconds and end of flashing. The same operation can be done with another input, otherwise display returns in initial mode.

필터번호 특징 필터 주파수 파형

Filter	Name	Impulse response
0	Fast Roll-Off Linear Phase 신속형 롤오프 평형 위상	
1	Slow Roll-Off Linear Phase 지연형 롤오프 평형 위상	
2	Apodizing Fast Roll- Off Linear Phase 변형 신속형 롤오프 평형 위상	

Filter	Name	Impulse response
3	Fast Roll-Off Minimum Phase (default) 신속형 롤오프 최소 위상 (기본)	
4	Slow Roll-Off Minimum Phase 지연형 롤오프 최소 위상	
5	Hybrid Fast Roll-Off Minimum Phase 복합 신속형 롤오프 최소 위상	
6	Brickwall 칠벽 형	

• mode SET DSD FILTER (7) DSD 필터 설정

이 메뉴는 USB입력 (DIGIT 5)의 DSD 필터를 설정합니다. 아나로그 영역에 2개의 필터가 있습니다. 즉 LOW (roll-off 주파수: 50 kHz & 부드러운 곡선) 또는 HIGH (roll-off 주파수: 70 kHz & 급격한 곡선).

이 메뉴를 선택하면 위 그림처럼 표시창 둘째 줄에 입력번호와 선택된 **DSD** 필터번호가 표시됩니다. 디지털 입력번호가 깜박이고 잠시 후 우측의 필터번호가 깜박입니다. 볼륨노브로 필터를 변경하고 가만 두면 잠시 변경된 내용이 자동 저장됩니다. 이 메뉴는 DIGIT5 (USB) 입력에만 적용되고 다른 입력에서는 선택할 수 없습니다.

By this function you can choose the filter applied on DSD stream of USB input (DIGIT 5).Two filters are avail-able in the analog domain after conversion: LOW (roll-off at 50 kHz and soft slope) or HIGH (roll-off at 70 kHz and sharp slope).Upon entering this mode, display shows one of digital inputs on second line. If input is not DIGIT 5 or USB, please get it by navigation with volume knob or + / – keys. Then by acting SET, LOW or HIGH will go on flashing on the right side of second line. You can choose one of two DSD filters that will be validated after few seconds at end of flashing.
If another input is selected, LOW or HIGH will not go on flashing because this choice is not available. Display returns to initial mode screen.

• mode SET DITHER ACTIV (8) Dithering 설정

디더링이란 PCM입력 시그널에 무작위의 디지털 노이즈를 인위적으로 추가하여 양자화 오류 (quantization errors)를 이용하여 아나로그로 변환 후 사운드를 더 좋게하는 기능입니다.

특히 입력 디지털 신호가 미약할 때 사운드를 개선해 줍니다. 이 Dithering 메뉴를 선택하면 위 그림처럼 표시창 둘째 줄에 입력번호와 Dithering 여부가 표시됩니다. 디지털 입력번호가 깜박이고 잠시 후 우측의 필터번호가 깜박입니다. 이 때 볼륨 노브로 Yes 또는 No로 변경하고 가만 두면 잠시 후 변경된 내용이 자동 저장됩니다.

Dithering is a random digital noise that is added to incoming PCM sig-nal to make distortion, due to quantization errors, less unpleasant after conversion. It can improve sound of the weakest signals in particular. It can be applied on each one of the 5 inputs. This mode operates in the same way as PCM FILTER mode. Display shows on second line one of the 5 inputs. A SET action will produce the YES or NO flashing. Choice is validated after few seconds and end of flashing. Choice can be done for another input or the screen returns in the initial mode.

These settings are referred to 1.38 software version of the unit that houses the card. Previous releases support anyway all these functions but the entries not shown in this manual are not active.

FLS DAC board technical data

Digital audio inputs

Optical:	2
Input signal format:	32 kHz to 192 kHz 16 to 24 bit linear PCM
RCA (S-PDIF):	1
Input level:	0,5V pp
Input impedance:	75 Ohm
Input signal format:	32 kHz to 192 kHz 16 to 24 bit linear PCM
XLR (AES/EBU):	1
Input level:	3 to 10 Vpp
Input impedance:	110 ohm
Input signal format:	32 kHz to 192 kHz 16 to 24 bit linear PCM
USB 1 Input signal format:	32 kHz to 384 kHz 16 to 32 bit linear PCM DSD 2.8 MHz, 5.6 MHz, 11.2 MHz, 22.5 MHz
Frequency response:	0.5 Hz to 20 kHz ± 0.1 dB
Dynamic Range:	133 dB
Noise:	> 120 dB
THD + noise:	<0,01%

Digital inputs: one asynchronous USB input (with Galvanic isolation) PCM 32 bit 384KHz and DSD512
4 digital inputs with Galvanic isolation (two optical, one AES/EBU, one SPDIF) full balanced configuration

FLS Phono board 포노 보드 설명서

최상의 음질을 위해서 포노보드 장착 후 최초 100시간은 턴테이블을 연결하고 앰프를 계속 작동하여 에이징하시길 바랍니다. 포노 보드의 입력단자에는 턴테이블 이외의 소스기기를 연결하면 안 됩니다.

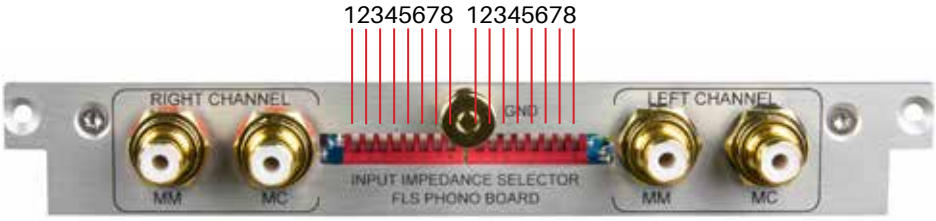
for best performance we advice you to go on with running for 100 hours more. Remember that this is meant in operating presence of signal.

DON'T CONNECT OTHER KIND OF DEVICES ON THESE INPUTS. Connections from turntable should be through high quality audio interconnects with proper shielding. We would recommend using audio interconnects less than 1,5 meters in length.

Connection 보드 설치

보드 장착 전에 모든 전원이 차단된 것을 확인바랍니다. 포노보드를 장착하면 아래 그림처럼 앰프의 전면 표시창에 2개의 입력이 추가되어 보여 집니다.

Before connecting any audio cables, be sure that all components in your system are powered off. When your FLS unit is equipped with this Phono board, two new inputs will be added, PHONO MC and PHONO MM.



How to configure your Phono board 포노 보드 환경설정

보드에는 2세트의 딥스위치가 있씁니다. 좌측 것은 좌측 채널용, 우측 것은 우측 채널용입니다. 위 그림은 모든 딥 스위치가 OFF 상태에 있습니다. 스위치 1~5번은 MC용이며, 6~8번은 MM용 스위치입니다.

Phono board has two, identical group of dip-switch (see above). The two dip-switch MUST be configured always the same way, because one is for the left channel and the other one for the right channel.

Picture shows the dip-switches position in "OFF".

Group switches from 1 to 5 are dedicated for MC input load selection. Group switches from 6 to 8 are dedicated for MM input load selection.

MC input MC입력 설정

MC입력게인은 60dB입니다. 카트리지 임피던스에 맞추어 아래 표를 보시고 딥 스위치를 조정하십시오. 만약 이 표에 없는 임피던스의 카트리지인 경우에는 모든 딥 스위치를 OFF로 놓고, 임피던스에 맞는 저항(1/4왓트)을 구하여 아래 그림처럼 포노보드의 삽입홀에 장착하여 사용하십시오.

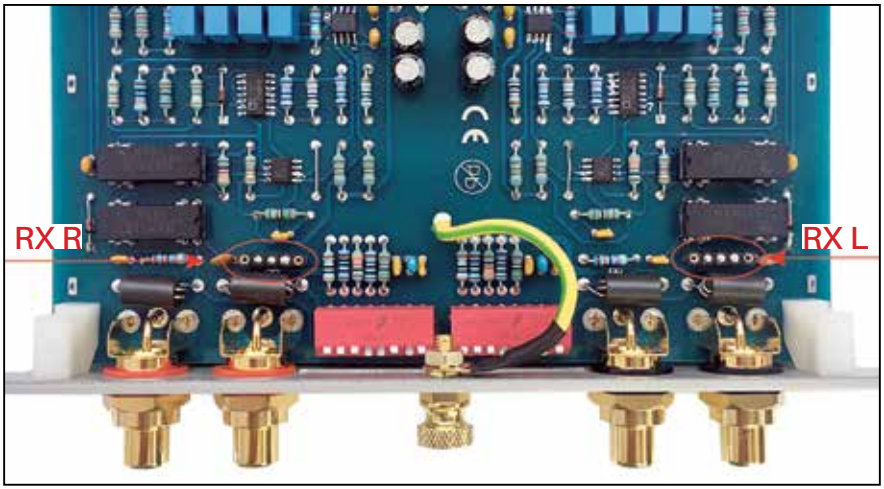
Connect to this input to MC cartridges only. The gain of MC input is 60 dB. To select the correct input impedance (resistive), please refer to Table 1.

If it is necessary to use a different load value from Table 2, select the switches from 1 to 5 all in OFF position and insert custom resistors in the two sockets as in following picture.

Please be sure that you use correct type resistors, i.e. 0.25 watt. In all cases, you MUST use exact same resistor value for both right and left channel.

Table 1

MC	1	2	3	4	5
20 Ohm	ON	ON	ON	ON	ON
25 Ohm	ON	OFF	ON	ON	ON
30 Ohm	ON	OFF	OFF	OFF	OFF
70 Ohm	OFF	ON	ON	ON	OFF
100 Ohm	OFF	ON	OFF	OFF	OFF
200 Ohm	OFF	OFF	ON	ON	ON
250 Ohm	OFF	OFF	ON	ON	OFF
330 Ohm	OFF	OFF	ON	OFF	OFF
600 Ohm	OFF	OFF	OFF	ON	ON
1000 Ohm	OFF	OFF	OFF	ON	OFF
1500 Ohm	OFF	OFF	OFF	OFF	ON



MM input MM 입력 설정

MM 게인은 40dB입니다. MM카트리지의 캐패시턴스에 맞추어 아래 표를 보시고 딥 스위치를 조정하십시오.

Connect to this input to MM cartridges only. The gain of MM input is 40 dB. To select the correct input impedance (capacitive), please refer to Table 2. Most turntables have a separate ground wire and this should be connected to the rear panel gold binding post (GND). If your turntable does not have a separate ground wire, it may be advisable to run a separate wire from a metal screw or grounded area of the turntable to this post. Turntables are very sensitive to hum and grounding table, head shell or cartridge to Phono board can help lower hum.

Table 2

MM	6	7	8
50 pF	OFF	OFF	OFF
100 pF	ON	OFF	OFF
150 pF	OFF	ON	OFF
200 pF	ON	ON	OFF
250 pF	OFF	OFF	ON
300 pF	ON	OFF	ON
350 pF	OFF	ON	ON
400 pF	ON	ON	ON

FLS RCA board

FLS RCA board allows you to expand input number with two more unbalanced RCA inputs. New inputs will be nominated 6 and 7.

Connection

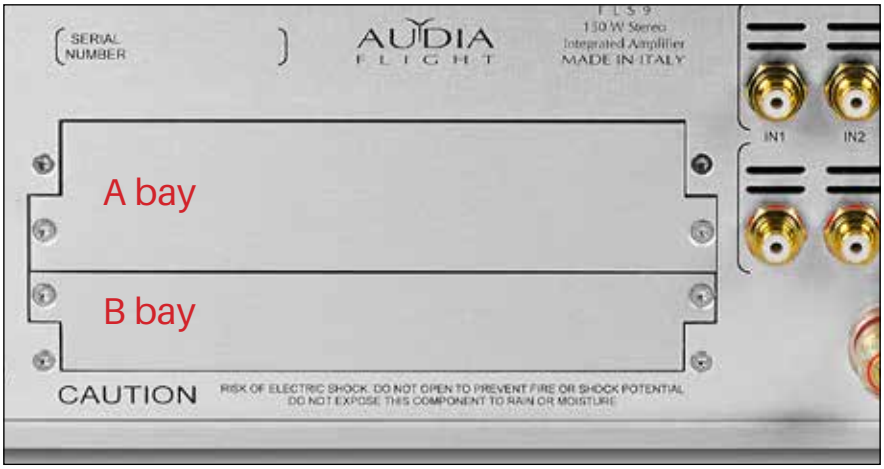
Before connecting any audio cables, be sure that all components in your system are powered off.
When your FLS unit is equipped with this RCA board, two new analogue inputs will be added. These inputs are available on the display by using input selector and volume knob or with the **IN** and + / – keys of remote control.
Connect each input you want to use with the source using proper and high quality cables.

FLS XLR board

FLS XLR board allows you to expand input number with two more balanced XLR inputs. New inputs will be nominated 10 and 11.

Connection

Before connecting any audio cables, be sure that all components in your system are powered off.
When your FLS unit is equipped with this XLR board, two new analogue inputs will be added. These inputs are available on the display by using input selector and volume knob or with the **IN** and + / – keys of remote control.
Connect each input you want to use with the source using proper and high quality cables.



Optional boards combination

The FLS units have two small removable panels on the back where it is possible to insert the optional boards.
Due to shape of each optional board panel, two boards can be mounted together considering these constraints.

- FLS DAC can be mounted only in A bay.
- FLS MC/MM Phono can be mounted only in B bay.
- FLS RCA inputs can be mounted in A and B bay (specify shape in the order).
- FLS XLR inputs can be mounted in A and B bay (specify shape in the order).

Notes

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