

AUDIO-GD NFB-1

Summarize

Multi-ply shield boards to isolation the power input socket , transformer, power supplies, digital part and the analog part .

Fully Balanced Discrete design built by discrete analog stages without any OPA and coupling caps in the signal channels .

Non- feedback ACSS analog output stage .

LED display avoids RF disturbance for better sound quality

Large R-core transformers and Hi-fi grade parts like DALE resistors, WIMA caps .

A total of 5 groups class A parallel mode PSU power supply for all digital and analog circuits. There is another one linear PSU power supply for the control parts .

4 digital inputs: USB / Optical / Coaxial RCA / I2S

Support DSD and DXD through USB and I2S .

DAC output: XLR / RCA / ACSS

Static storage mode control software for avoid disturb sound quality , the MCU output once control data and save in the perform parts ,then stop output data until users next operation.

Technology detail

Detail of the Current Conveyor Technology

Simple and short signal transfer is best:

The NFB-1(2015) applies the newest ESS high-end Sabre32 DA chip ES9018 which can support up to 32Bit/384KHz input .

ES9018 in voltage output model , there is -12DB THD+N worst , to be achieve the best performance of ES9018 , must work in current output model .

In some other ES9018 built in DAC design , ES9018 output signal have to through 3 step OPAs implement analogy signal process .

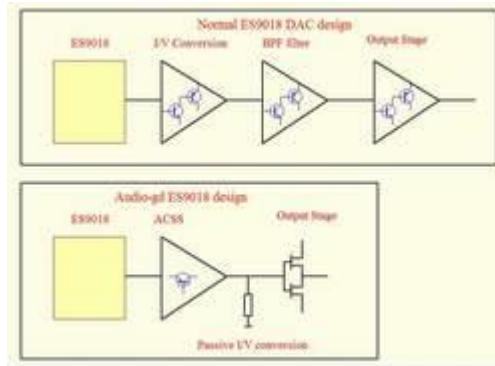
The NFB-1(2015) had different design , applies Non-feedback ACSS design. The ES9018 feed to the ACSS circuit by balanced model without any OPAs .

The ACSS circuit naturally working in current model and have design difference current input , it can transfer the ES9018 current signal to output and implement the I/V conversion in current model in one ACSS amp . And this ACSS amp only have on current gain stage , the ES9018 output signal only through

one stage can arrive the output stages .

The shortest signal journey can reproduce the best detail and dynamic, and almost without sound coloration , It can show the real performance of the ES9018 .

So our ACSS design is the best combo with ES9018 achieve the best performance .



The ACSS also is a non-feedback technology made with fully discrete amplifiers. Most people know the global feedback design can offer better specs in test measurements, and non-feedback can't do well in test measurements but can offer better sound for the human's ears. Here is a conflict of the classic circuits.

But the ACSS opens a new field, it can offer a least coloration sound which is more neutral with very low distortion and high linearity. So it can retain the dynamics, detail and neutral sound but not sound bright or harsh.

The output buffers are Non-feedback pure class A FET design.

The DAC is without couple caps to avoid coloration. There are two OPAs built in as the DC serve to keep the DC offset .

The 32bit / 384K USB interface outputs a I2S signal to ES9018 .

Multi-ply Class A power supplies are the key of sound :

NFB-1(2015) applies the excellent DA chip ES9018 and excellent analog output stages, but these are not the only keys of the best sound.

The power supply is most important. Even applying the best DA chip and the best amp, if matched to a average power supply, the total sound may still be average or sound musical but can't be neutral and detailed. That is why it is easy to find hi-end grade gears maybe without the best chips , but with plenteous dedicated DC supply circuits.

The NFB-1(2015) uses A total of 5 groups class A PSU power supply for all digital and analog circuits.

To achieve high S/N, the control circuit is powered with separate regulator.

Diagram of the Class A PSUs for analogy parts

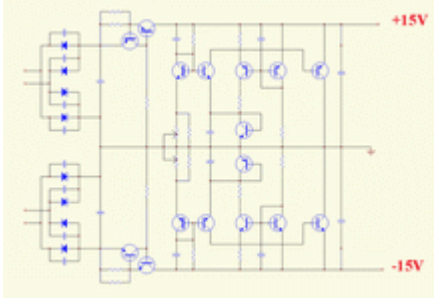
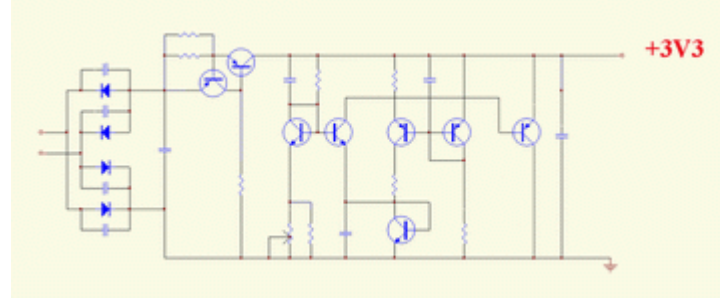


Diagram of the Class A PSUs for digital parts



The Multi-ply shield boards for avoid the interrupt:

The NFB-1 had built in Multi-ply shield boards, to separate the transformer, power supply, digital parts and analogy parts for avoid the different parts had disturb . Even though the power input IEC socket, it had hide in a copper shield box .



Static storage mode control software:

In most control softwares design, the MCU will continuously output data to the perform parts , the MCU had the very high speed, so the output data become high frequency impulses disturb the audio signal circuits make the sound worst . This product had applied static storage mode control software , the MCU output once control data and save in the perform parts while just power on and users operate ,then stop output data until users next operation. This design make the sound quality improve on the clear and transparency .

Built in Hi-End grade parts :

NFB-1(2015) have built in most high end grade parts, like the DALE resistors (USA), WIMA caps (Germany) and NOVER parts (UK) . These parts have through long term practices and consider have least sound coloration . Built in high end grade parts have not warranty have the good sound , but the best technology design with high end grade parts can have the high ended sound quality .

Specifications might subject to change without prior notice for product improvement.	
S/N Ratio	>120DB (XLR output) 影
Output impedance 影	10 ohm
Output Level 影	2.5V (RCA) 5V (XLR) 1.2+1.2MA (ACSS)
Input Sensitivity	0.5 Vp-p(75 Ohms, Coaxial) 19 dBm (Optical) 影
Frequency Response	20Hz - 20KHz (< - 0.2DB)
Support Operate Systems (USB)	Windows , OSX

彭	彭
Support Sampling	USB and I2S modes: 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz , 192kHz, 352.8kHz,384kHz Coaxial mode: 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz ,192kHz Optical mode: 44.1kHz, 48kHz, 88.2kHz, 96kHz 彭
Power Requirement	Version 1: 100-130V AC 50/60 Hz Version 2: 220-240V AC 50/60 Hz 彭
Power Consumption	22W 彭
Package Weight	Approximately 5KG 彭
Dimensions 彭	W240 X L360 X H80 (MM, Fully aluminium)
Accessories	AC power cord X1 USB cable X1 彭

User Manual

Power button:

Power ON/Off the DAC.

Setting button:

Select the Input 2 I2S allow PCM only or DSD / PCM both format . In DSD / PCM modes, users except connect the I2S cable, but want to connect the DSD CTR input to the source DSD CTR output at same time.

The DSD CTR cable price is USD10, 0.5 meter length.



Selector button:

Select the input sources. 1: USB input. 2: I2S input. 3 : Optical input. 4:Coaxial input.

Left one LED display:

Show the Input 2 I2S allow PCM only or DSD / PCM both format . "P" is PCM only , "d" is DSD / PCM both modes .

Middle LED display:

Show current playback music format . "P" is PCM , "d" is DSD .

Right one LED display:

Show active input channel : 1: USB input. 2: I2S input. 3 : Optical input. 4:Coaxial input.