MDSD DIGITAL PROCESSOR

DC-37

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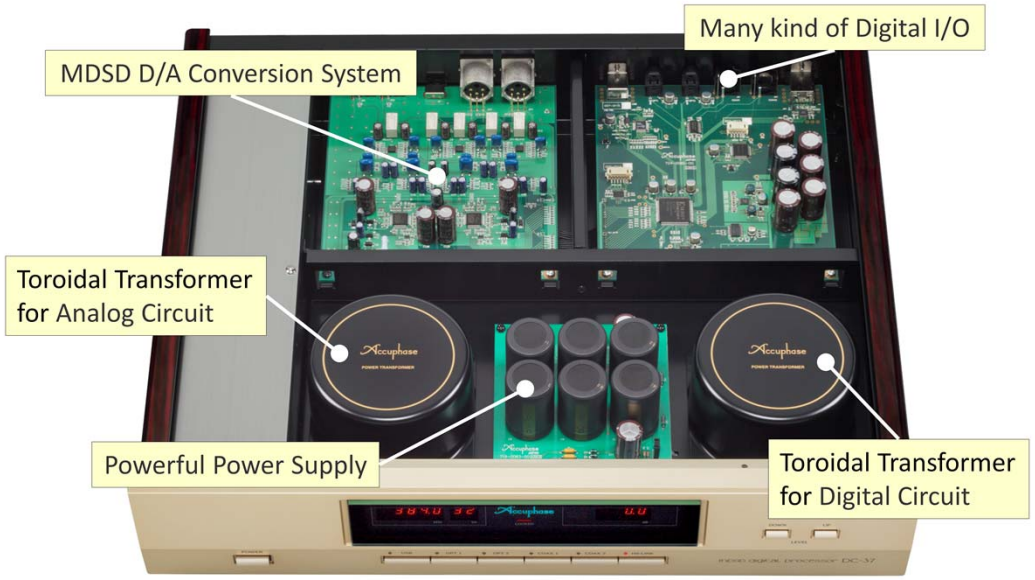
DC-37 is Digital Processor that has many kinds of inputs and provides High-Resolution sound such as 384kHz/32bit-PCM or 5.6MHz-DSD with PC connections. .The DAC section has same configuration and scale as our flag ship model of all-in-one SA-CD Player DP-720. Electrical Performance is very nearly equal to DC-901.

Internal view



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DC-37 has the construction which digital circuit and analog circuit including power transformers are completely separated.

Digital Inputs

- Inputs
  - HS-LINK Ver.2: 384kHz/32bit, 5.6448MHz/1bit
  - Coaxial: 192kHz/24bit
  - Optical: 96kHz/24bit
  - USB2.0: 384kHz/32bit, 5.6448MHz/1bit
    DoP, ASIO2.1, Asynchronous mode

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DC-37 is equipped with 4 kinds of 6 inputs.
USB Input accepts 384kHz/32bit-PCM or 5.6648MHz-DSD. DSD data can be received both DoP（DSD over PCM）and ASIO2.1.

HS-LINK has been improved as Ver.2.
Existing HS-LINK transmits and receives only 192kHz/24bit-PCM or 2.8224MHz-DSD, but Ver.2 comes to be able to transmit and receive 384kHz/32bit-PCM, 5.6648MHz-DSD.
Ver.2's Connecter Shape and Cable themselves are exactly same as existing HS-LINK.
Ver.2 receiver can accept existing HS-LINK signal (Ver.2 has Upper compatibility).

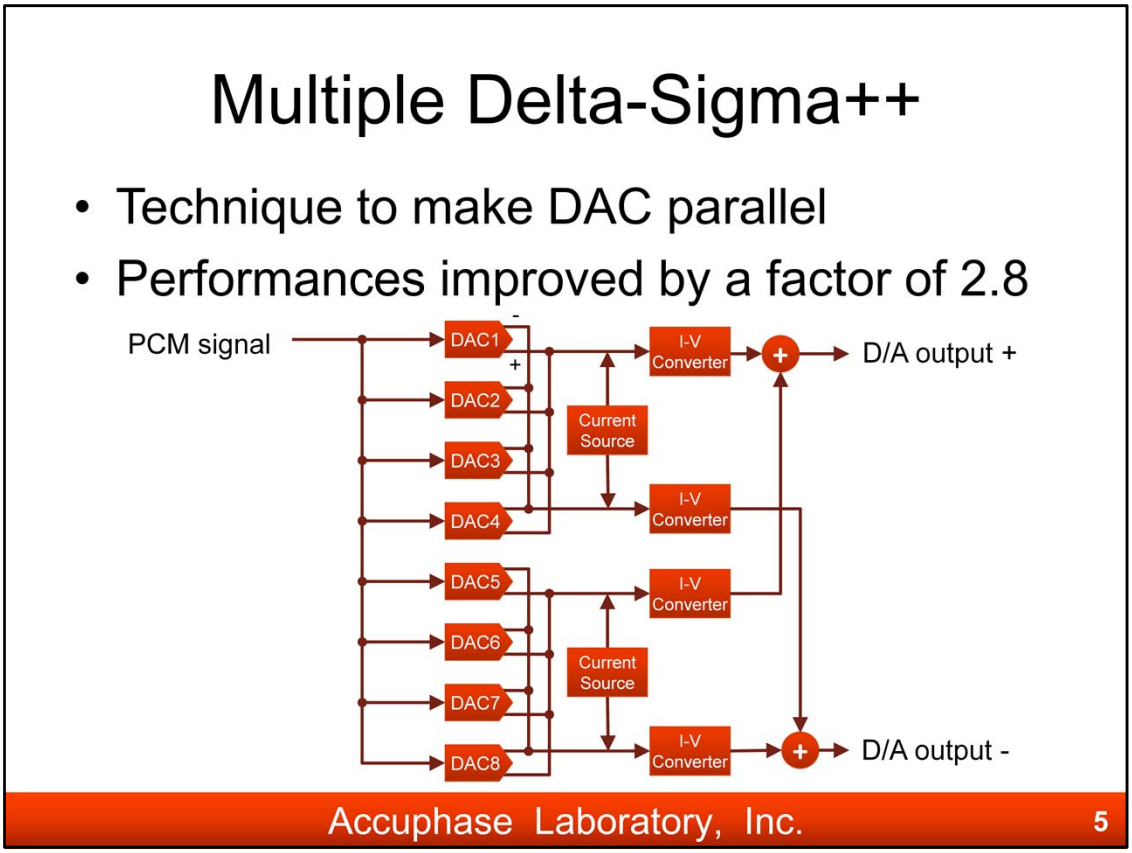
Electrical Features

- 8 parallel D/A converters
  - MDS++ for PCM signal
  - MDSD for DSD signal
  - ES9018S 32bit DAC, 1 chip / channel
- Direct Balanced Filter

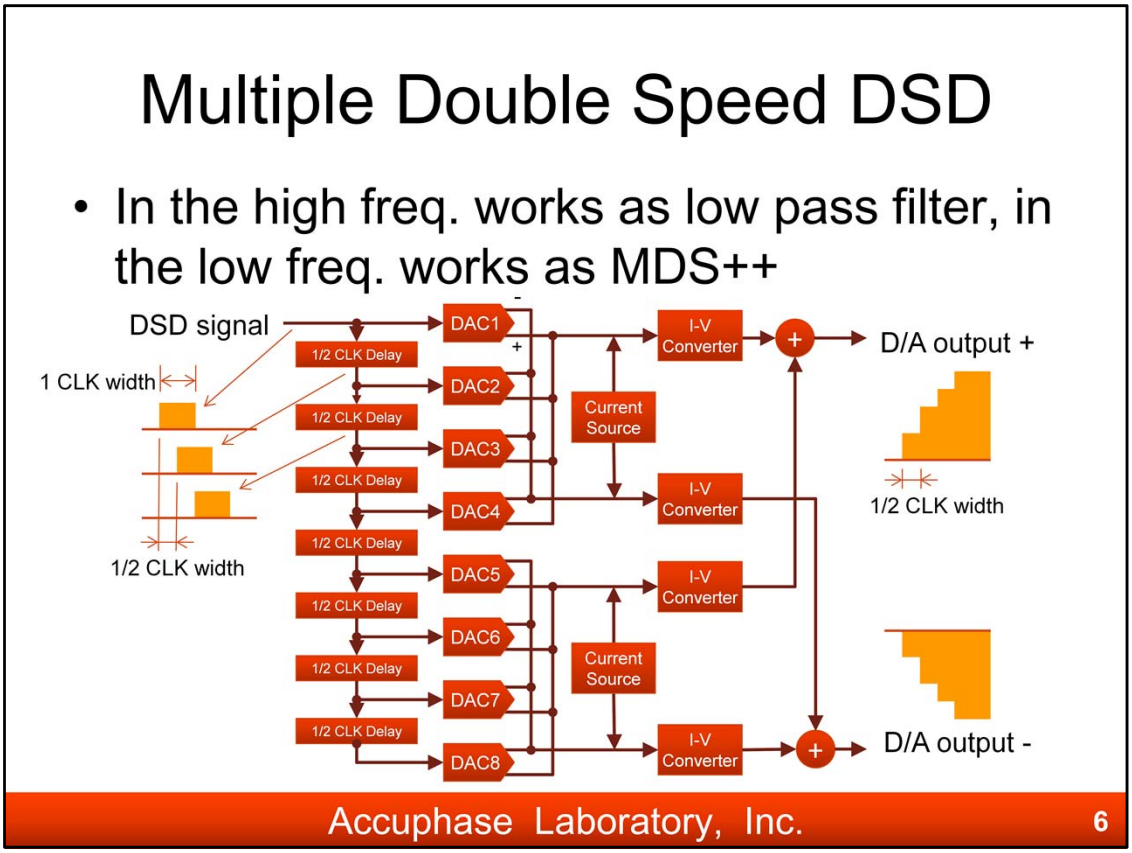
8 D/A Converters are driven in parallel on each channel.

These DACs are essential for our original circuit MDS++ for PCM signal and also original circuit MDSD for DSD signal.

DC-37 has full balanced circuit post-filter.



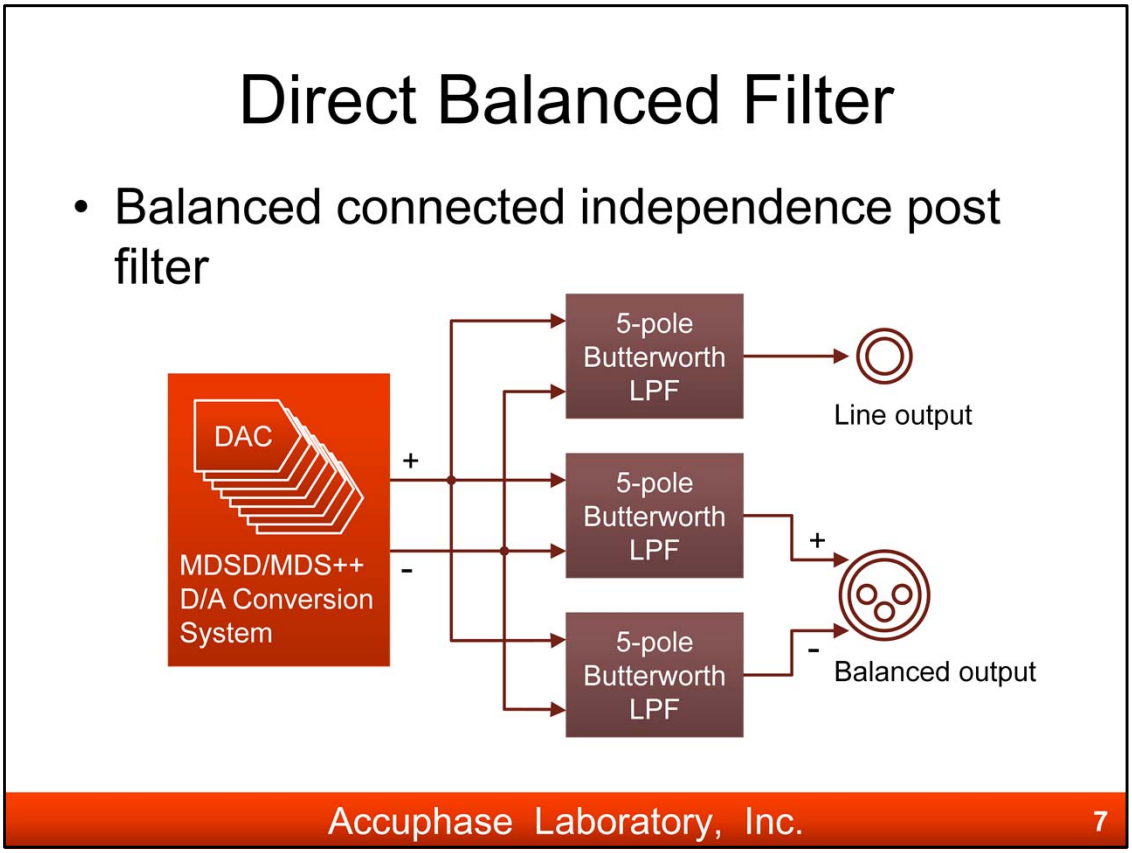
MDS++ is a technique to make DAC parallel.
The same digital signal is supplied to each converter.
The output of each DAC is combined.
The specialty of MDS++ is dividing the addition into current addition and voltage addition to reduce the load of I-V converter.
The Audio signal values are added up. But conversion error and noise cancel each other.
The ratio between the signal and conversion errors increases. So the converter performance is improved.
The improvement degree works by a square root of the number of DACs.
Current Source optimizes the OPERATING POINT of I-V converter.
In DC-37, overall performances are improved by a factor of 2.8.



MDSD stands for Multiple Double Speed DSD.
The DSD signal has big noise in the high frequency. It must be removed.
MDSD works as low pass filter to remove a noise in the high frequency and works as MDS++ improving characteristics in the low frequency.

The point of MDSD is delay elements.
DSD signal in DC-37 is D/A converted with half-delayed clock and the output is combined.
As the analog output becomes half-clock time resolution, it allows double speed operation.

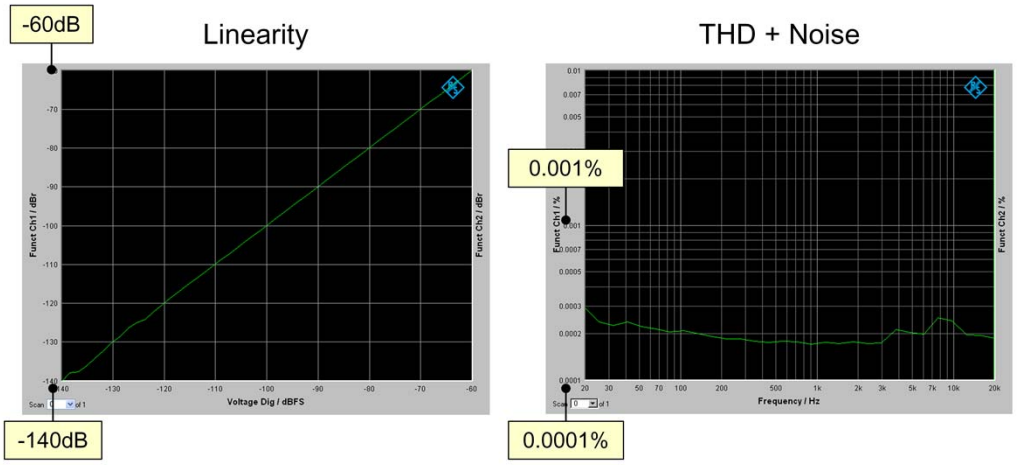
This configuration is moving-average filter. It works as complete linear phase LPF and remove high frequency noise of DSD signal.



Full-balanced structure is employed after D/A converter in DC-37.
In addition, the independence low pass filter is installed for all audio outputs.
Due to this, the sound signal from all the outputs becomes high quality.

Electrical Performance

- Electrical performances are close to the quality of our flagship DC-901



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The electrical performances of DC-37 approach the quality of our flagship digital processor DC-901.
It is proud of the world champion class performances.

Further more …

- Sampling frequency and number of effective bit on the front display

- Balanced output polarity selector on the back panel

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DC-37 shows sampling frequency and the number of effective bits of input signals on front panel display.

Phase selector for balanced outputs are equipped.