

# MDS SA-CD PLAYER DP-750



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The new DP-750 is succession model of DP-720 launched in 2013.

DP-750 is the superlative integrated SACD/CD player that reflects great technologies of the DP-950/DC-950 combo, aiming for the best performance and sound quality.

Newly developed SACD/CD drive is equipped, with effective control of vibrations, they are completely shut off from the power transformer to the optical pick-up, and the operating motion noise is also dramatically decreased.

The superb low distortion and noise performance exceeding the former model allows DP-750 to dynamically express even the sonic purity and emotions of music.

The DP-750 is dripping with Accuphase cutting-edge digital & analog technologies, and offers the full enjoyment of music.

# Front display

- Easy to see: Sampling Frequency & Number of Effective Bits



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DP-750 can show the sampling frequency and the number of effective bits of all input signals on the front display.

Quantization bits are counted directly from raw data by using a high speed Field Programmable Gate Array.

# Dimensions and Weight

- Same unit dimensions but heavier weight



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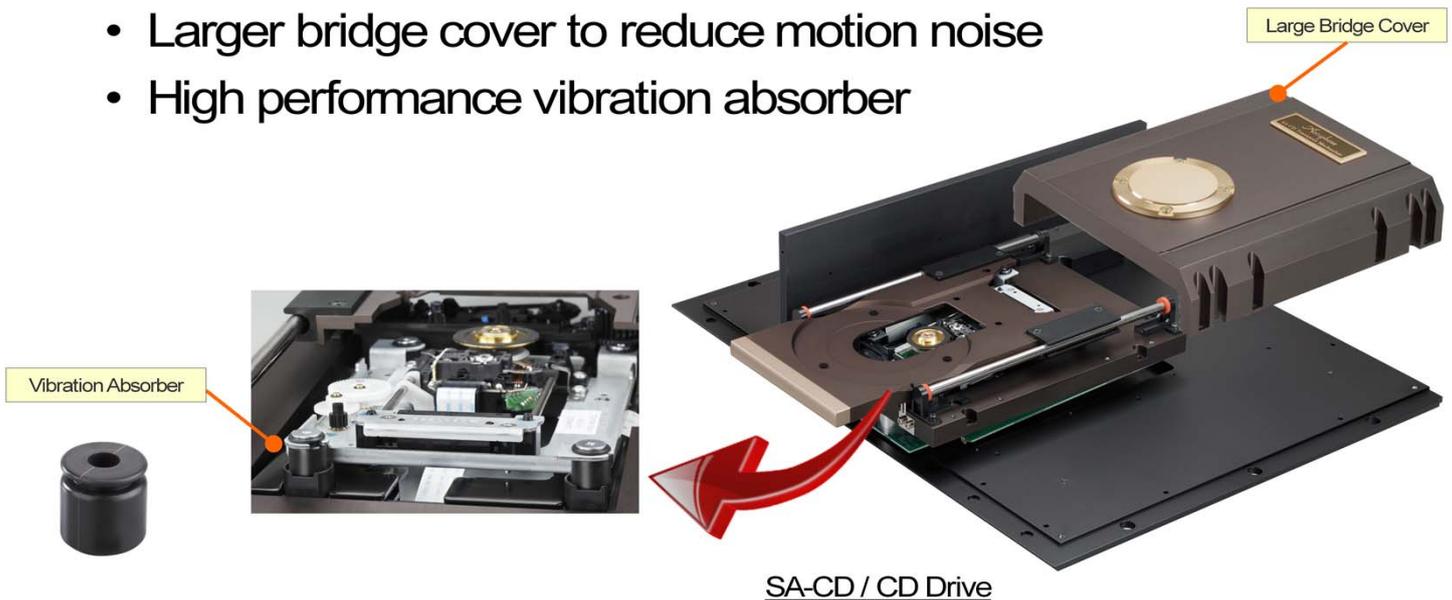
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The dimension of DP-750 is as same as those of DP-720.

The weight becomes slightly heavier than DP-720. This is due to the long and heavy bridge dedicated to the new SA-CD drive mechanism.

# SA-CD/CD Drive

- Larger bridge cover to reduce motion noise
- High performance vibration absorber



SA-CD / CD Drive

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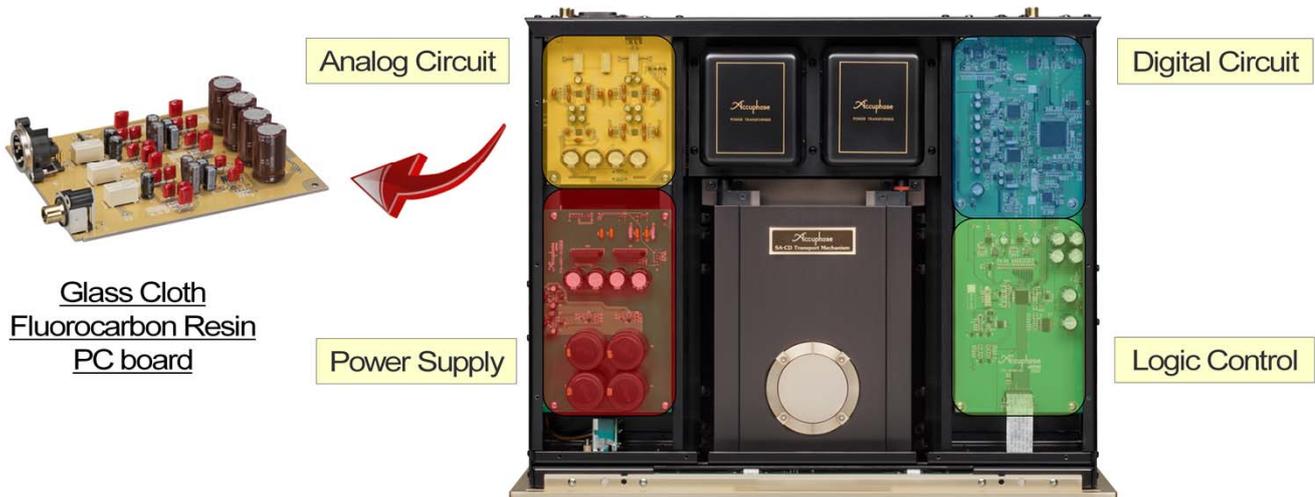
The Bridge cover of SA-CD drive mechanism is bigger and longer than the former model. Outer rotor brushless DC motor is installed at the spindle to drive the discs.

This is very effective for reducing the motion noise from motor drive and air flow by disc rotation. Furthermore, laser pick-up module is mounted with vibration absorbers. They are made of the special silicon which is carefully selected for this mechanism. It prevents the vibration to the outside 4dB lower at the resonance peak.

These materials are mounted directly on the aluminum base plate, and it contributes to reduce the motion noise by half of DP-720.

# Internal view

- Completely separated circuit layout & solid construction



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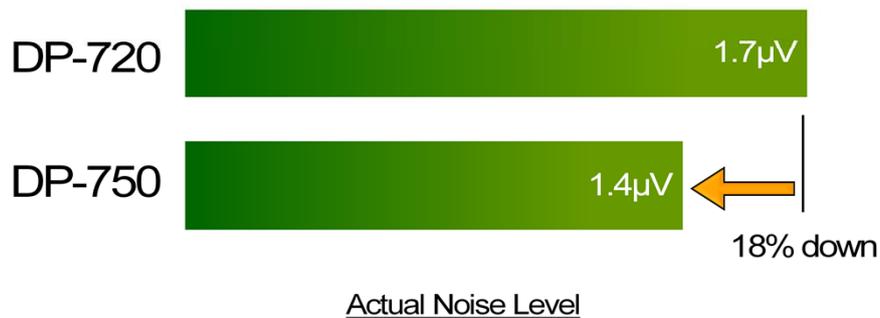
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DP-750 applies the systematical layout. Each circuit block is logically placed to make the signal path short as possible.

The digital circuit with DAC chip is on the right side, and analog circuit equipped with glass cloth fluorocarbon resin PC board is on the left side at the back panel side. Logic control board is on the right side of SA-CD drive mechanism, and on the left side, reinforced power supply is located.

# Electrical Performance

- Ultra Low Noise



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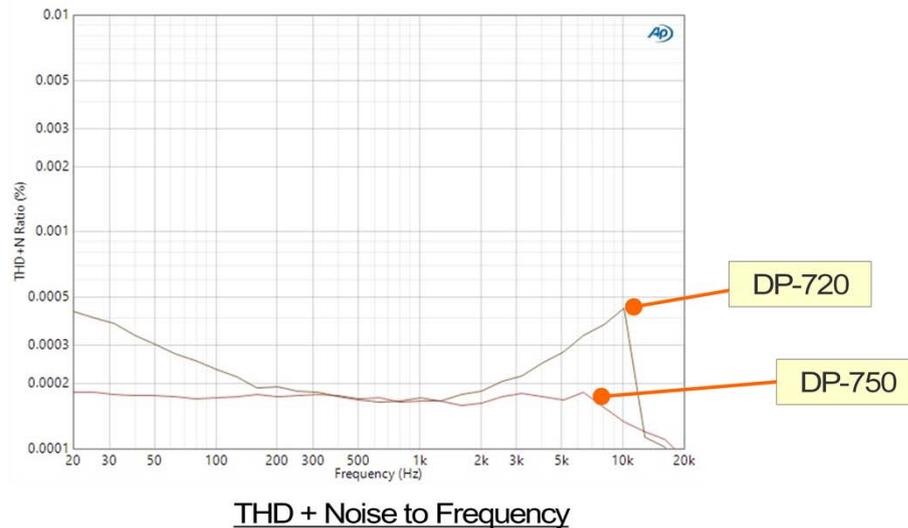
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Ultra Low Noise is one of the main technical features of DP-750.

The former model, DP-720 has the excellent noise performance, however, DP-750 achieves another 18% lower output noise voltage.

# Electrical Performance

- Ultra low THD+Noise



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DP-750 proudly shows the great THD+Noise characteristics which are quite important for sound quality.

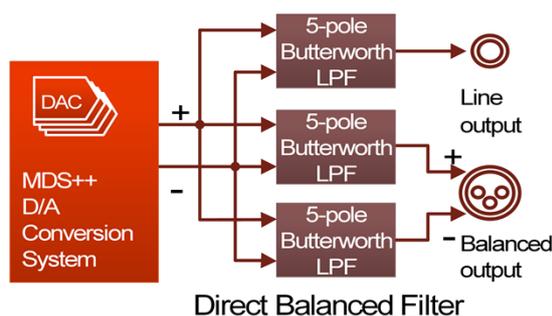
DP-750 makes an almost flat response from the low frequency through to the high frequency, and it obtains less than 0.0002% THD+Noise in all frequency bands.

# D/A converter

- 8 parallel D/A converters per channel
  - ES9028PRO 32bit Hyper Stream II DAC
  - MDS++ Architecture for PCM signals
  - MDSD Architecture for DSD signals
- Direct Balanced Filter
  - Balanced connected independence post filters



ES9028PRO



Direct Balanced Filter

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For D/A converter section, for DP-750, Accuphase updates the DAC chip to ESS Technology's 32bit Hyperstream II DAC ES9028PRO.

ES9028PRO has 8 DACs inside, and DP-750 uses the 8 DACs connected in parallel per channel with Accuphase unique technology, MDS++ conversion system.

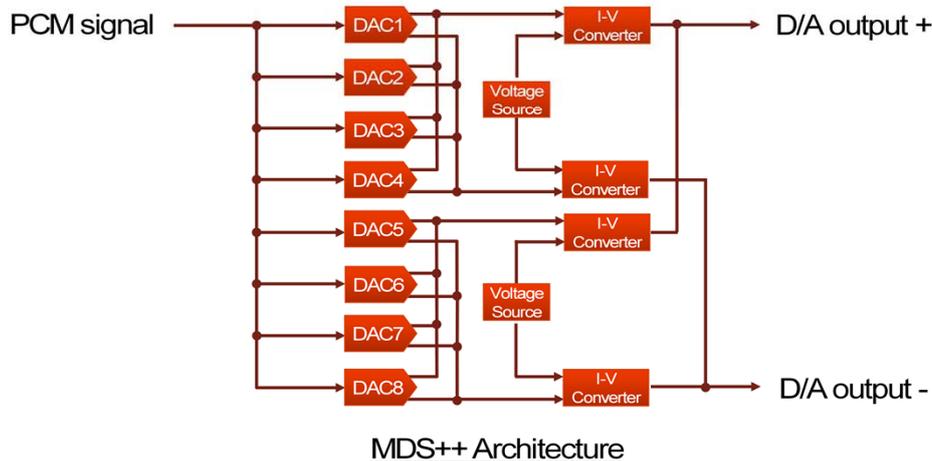
Fully balanced structure is employed after D/A converter section in DP-750.

In addition, the independent low pass filter is installed for each audio output.

This enables the sound signals from the all outputs to keep its unsurpassed quality without mutual interference.

# Multiple Delta-Sigma++

- Technique to make DAC parallel
- Performances improved by a factor of 2.8



MDS++ Architecture

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MDS++ is a technique to make DACs parallel.

The same digital signal is supplied to each converter, and the output of each DAC is summed before being sent to subsequent stages.

The audio signal values are added up, but the conversion error and noise themselves are canceled.

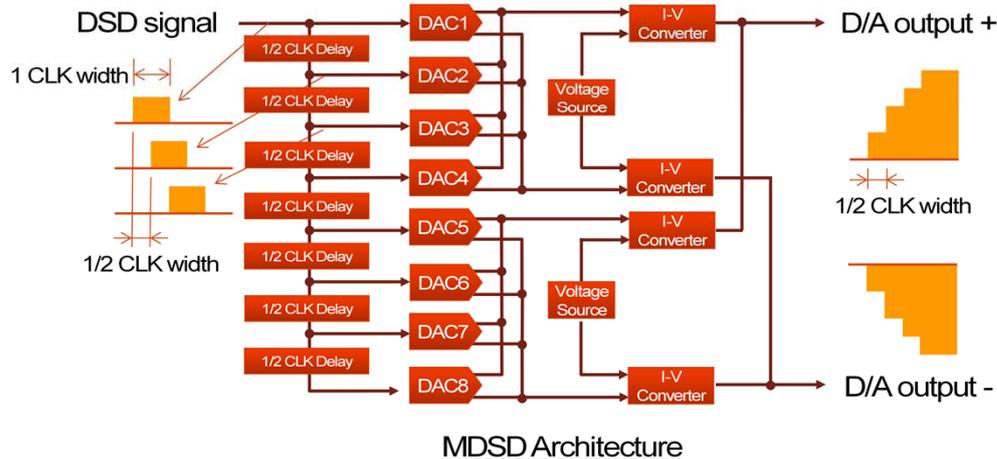
The ratio between the signal and conversion errors increases, So the converter performance is improved.

The improvement degree works by a square root of the number of DACs.

In DP-750, all performances are improved by a factor of 2.8.

# Multiple Double Speed DSD

- In the high frequency, works as a low pass filter
- In the low frequency, works as MDS++ Principle



MDSD Architecture

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MDSD stands for Multiple Double Speed DSD. The DSD signal has big noise in the high frequency outside the range of human hearing. It must be removed.

MDSD works as a low pass filter to cut the noise in the high frequency and also works as the MDS++ principle to improve the characteristics in the low frequency.

The point of MDSD is the delay elements. DSD signal in DP-750 is D/A converted with half-delayed clocks and is combined when it comes to the output. As the analog output becomes half-clock time resolution, it allows the signal to work as the double speed operation.

This configuration means a moving-average filter. It works completely as a linear phase low pass filter and removes high frequency noise of DSD signal.

# Digital Inputs / Outputs

- HS-LINK INPUT / OUTPUT
  - Version1: 192kHz / 24bit, 2.8224MHz / 1bit
  - Version2: 384kHz / 32bit, 5.6448MHz / 1bit
- Coaxial INPUT / OUTPUT
  - 192kHz / 24bit
- Optical INPUT / OUTPUT
  - 96kHz / 24bit
- USB-B INPUT
  - 384kHz / 32bit
  - 5.6448MHz / 1bit (DoP / ASIO)
  - 11.2896MHz / 1bit (ASIO)



Digital Terminals

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DP-750 has 4 digital inputs, Coaxial, Optical, HS-LINK and USB.

USB Input accepts 384kHz/32bit-PCM or 11.2896MHz-DSD. DSD data can be received both DoP ( DSD over PCM ) and ASIO2.1 (11.2896MHz: ASIO only).

HS-LINK has been evolved into Version2.

Original HS-LINK(Ver.1) 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.

DP-750 automatically recognizes either Ver.1 or Ver.2 transmissions.

# HS-LINK Version2 Available

- HS-LINK is upgraded to Ver.2
  - Transmits master clock separately
  - Supports up to 384kHz / 32bit - PCM,5.8224MHz - DSD
  - Use the same HS-LINK cable as Ver.1
- HS-LINK Ver.1 output is still available.
  - Backward compatibility.



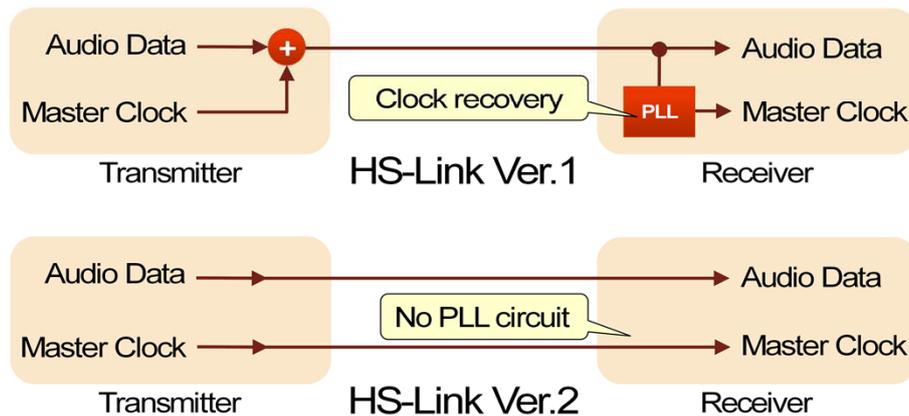
HS-LINK Cable

HS-LINK Version 2 extends the HS-LINK standard.

For backward compatibility, DP-750 is still available HS-LINK Ver.1 output.

# HS-Link Version2 Advantages

- Transmitting the master clock separately
  - No Jitters occurred from Clock Recovery circuit



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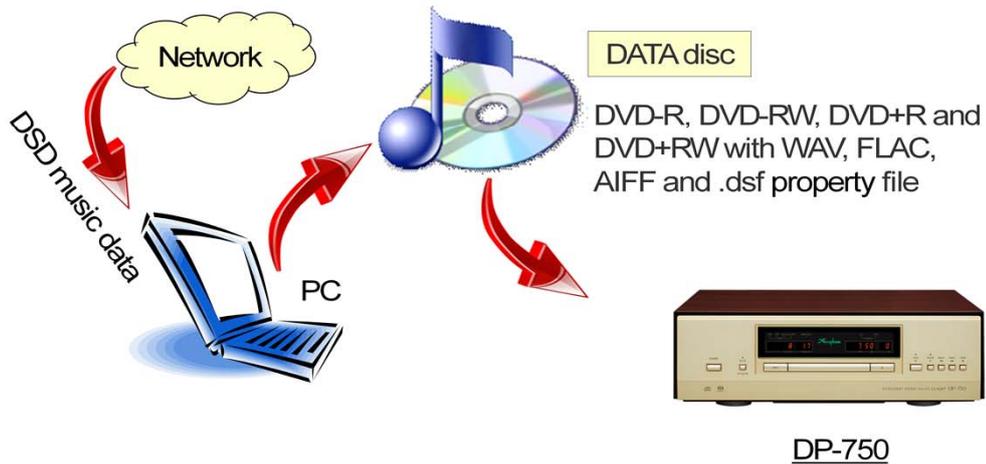
The biggest feature of HS-LINK Ver.2 is sending the music signal and the master clock separately to D/A converter in a receiver.

HS-LINK Ver.1 sends the music signal merging the master clock together, PLL circuit for master clock recovery is needed at receiver side.

Since master clock is been transmitting as it is, in HS-LINK Ver.2, not only master clock recovery is unnecessary at receiver side but it comes to be free from the jitter at PLL circuit.

## “DATA Disc” Available

- New SA-CD drive can play DATA Disc which is made with your PC



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DATA Disc playback is available.

You can record music files on blank DVD by using your PC.

DP-750 can play 192kHz 24 bit data of WAV, FLAC, AIFF format, and 5.6MHz 1bit DSD data also.

You can enjoy all kinds of digital data with DP-750.