Accuphase

PRECISION MDSD SA-CD PLAYER

DP-750

● High-grade SA-CD/CD drive ● MDSD type D/A converter using eight parallel devices ● Support for playback of data discs (CD-R/-RW, DVD-R/-RW/+R/+RW) ● Direct Balanced Filter with separate line and balanced signal paths ● HS-LINK and USB digital interfaces ● Transport outputs and digital inputs allow insertion of DG-58 into signal path for sound field correction ● Phase selector for balanced outputs ● Numeric indication of sampling frequency and quantization bits

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The supreme integrated SA-CD/CD player —— Accurately reads SA-CD information and brings out the full splendor of great musical performances.

Quiet and ultra-smooth disc loading mechanism combined with a high-rigidity, high-precision SA-CD/CD drive extracts the full scope of the recorded information. The innovative MDSD (Multiple Double Speed DSD) D/A converter comprises eight MDS++ devices driven in parallel and a moving average filter to recreate an analog signal of stunning purity. The versatile array of transport outputs and digital inputs enables connection of a voicing equalizer or other equipment in the digital domain. Harnessing the latest technology in a masterful ensemble, the DP-750 goes straight to the heart of the music.

The Technology of Precision

Features and Functions of Transport Section

■ Advanced technology for accurate information retrieval

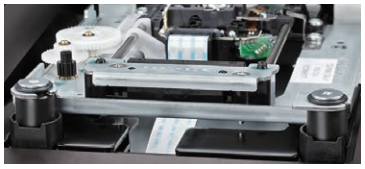
The newly developed SA-CD/CD drive with a total weight of 10.5 kg is mounted on a massive 8-mm thick bottom plate, resulting in highly efficient attenuation of external vibrations. Intensive research into materials and structural design is reflected in the traverse mechanism supported by four viscous dampers. This protects the pickup from resonances and enables it to perform its crucial task, ensuring highly precise data readout at all times.

■ Quiet operation with sound level reduced to 1/2

Even very slight eccentricities or warping of media discs often can lead to various types of vibrations and wind noise when spinning at high speed. The viscous dampers of the DP-750 prevent the propagation of such vibrations, and the large bridge covering the disc cuts down on wind noise. As a result, operation noise is reduced to about one half as compared to earlier designs, making listeners forget that there is a rotating mechanism at all.

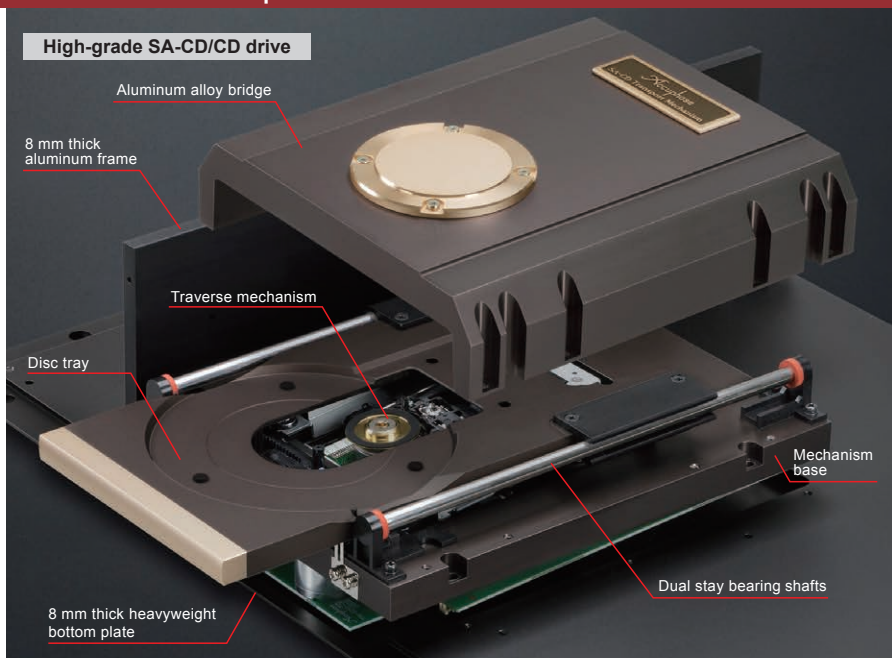
■ Silky smooth loading

The disc loading mechanism features a dual stay construction with steel bearings for the shafts. This ensures that the aluminum disc tray opens and closes with a super-quiet and smooth motion.



Traverse mechanism supported by viscous dampers

Viscous dampers



Features and Functions of Digital Processor Section

■ MDSD principle

Because the DSD signal comprises a high amount of noise at frequencies beyond the audible range, a digital filter is necessary to remove these noise components. In conventional designs, the DSD signal is first converted to PCM before being routed to a digital filter. The DP-750 by contrast employs the MDSD principle where eight time-shifted DSD signals are generated and supplied straight to eight MDS++ type D/A converters arranged in a parallel configuration. The entire circuitry thereby functions as a moving average filter with perfectly linear phase characteristics. This revolutionary approach enables thorough removal of noise components without having to convert the DSD signal into PCM form at all.

■ MDS++ topology with eight devices

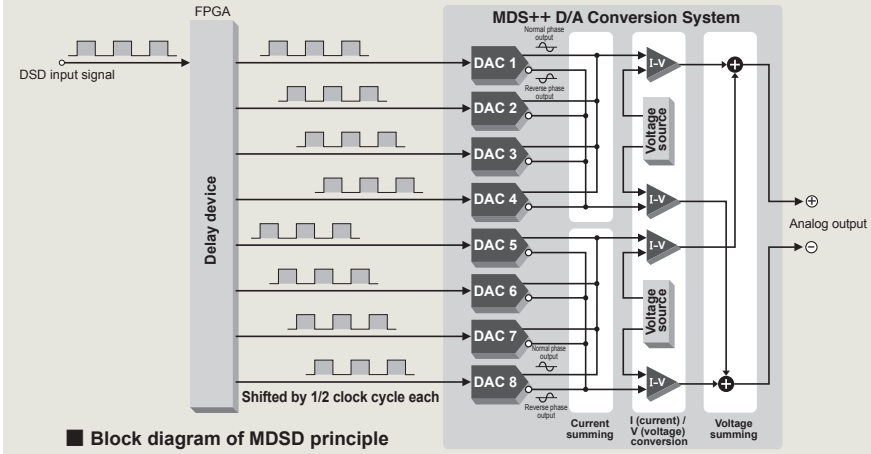
Eight high-performance DAC chips (ES9028PRO from ESS Technology Inc.) are driven in parallel, thereby improving overall performance by a factor of about 2.8 (=$\sqrt{8}$), as compared to a single converter circuit. Because the performance improvement afforded by the MDS++ principle is independent of signal frequency and signal level, output signal noise at very low levels is also successfully minimized, a feat that is very difficult to achieve with conventional delta-sigma converters.

■ Direct Balanced Filter circuit

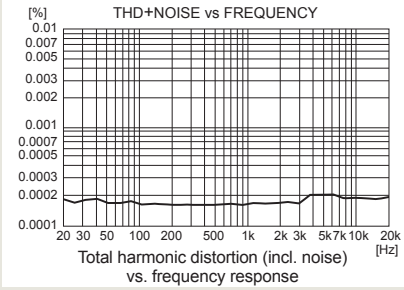
Because the Direct Balanced Filter provides completely separate circuits for the line and balanced outputs, no unwanted interaction will occur, even if both are connected at the same time. (In order to prevent noise, the same equipment should not be connected via both the line output and balanced output.)

■ Glass fluorocarbon resin PCB

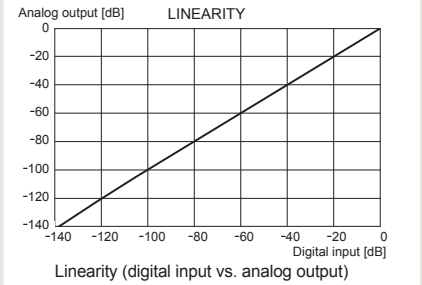
For optimum sound quality, the printed circuit board for the Direct Balanced Filter circuitry is made from glass cloth fluorocarbon resin with low dielectric constant and minimum loss.



■ Block diagram of MDSD principle



Total harmonic distortion (incl. noise) vs. frequency response



Linearity (digital input vs. analog output)

■ Assembly with digital signal processing circuits, D/A converter, transport control circuits etc.

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■ **Strong power supply**
Two separate power transformers for the analog and digital sections, along with four smoothing capacitors (15,000 µF / 25 V) developed specifically for the DP-750 and designed for optimum sound quality ensure highly accurate and stable signal output.

■ **Sampling frequency and quantization bit display**
In addition to track numbers and elapsed playing time, the display can also show the sampling frequency and the number of quantization bits.

■ **Digital level control allows adjustment down to –80 dB**
This capability is useful for example to precisely match the output level to other components in the system.

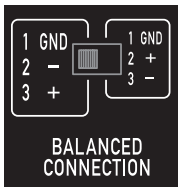
■ **Data disc support**
The DP-750 can also play CD-R/-RW, DVD-R/-RW/+R/+RW discs. Supported file formats are WAV, FLAC, DSF, and DSDIFF.

■ **Versatile digital inputs**
The array of digital inputs includes HS-LINK (Ver. 1 and Ver. 2), COAXIAL, OPTICAL, and USB.

■ **Elegant wood cabinet**
The exquisite wood cabinet with natural grain finish creates an air of sophisticated elegance that complements any listening room.

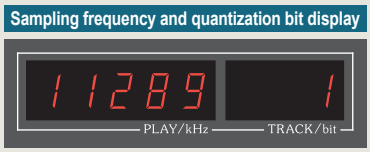
■ **Insulators designed for sound quality**
The "Advanced High Carbon" cast iron insulator feet possess superior damping characteristics for blocking external vibrations.

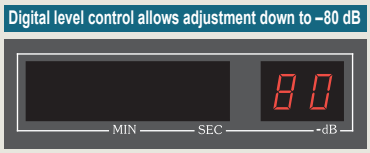
■ **Balanced output phase selector**
This allows matching the polarity to that of connected equipment.

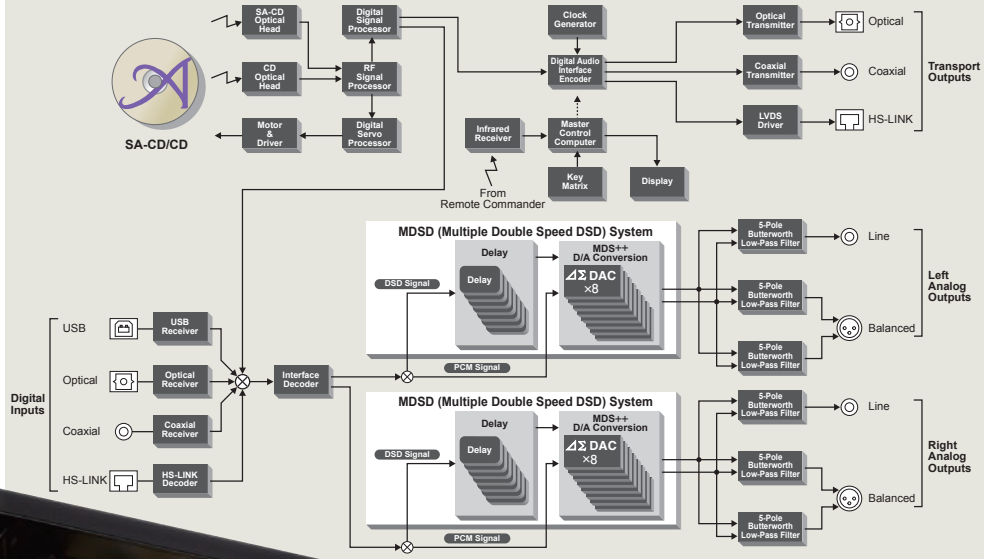


Phase selector


Strong power supply







■ DP-750 Block Diagram

■ **Supplied remote commander RC-120**
Gives access to various functions including direct play, repeat play, input switching, and level control.

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About HS-LINK Ver. 2

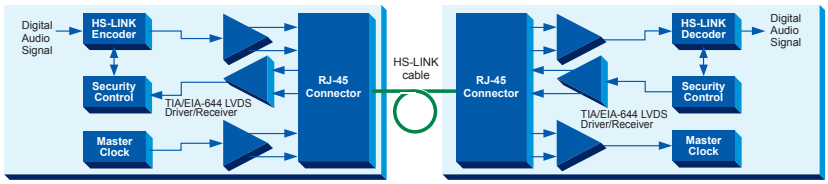
HS-LINK Version 2 is a further enhanced version of the Accuphase HS-LINK interface, providing expanded sampling frequency and quantization support.

● The DP-750 supports both HS-LINK Ver. 1 and HS-LINK Ver. 2 signal transmission.

Input	Format (2-channel)	Sampling frequency	Number of bits
HS-LINK (Ver.1)	DSD	2.8224 MHz	1
	PCM	32 / 44.1 / 48 / 88.2 / 96 / 176.4 / 192 kHz	16 to 24
HS-LINK (Ver. 2)	DSD	2.8224 MHz / 5.6448 MHz	1
	PCM	32 / 44.1 / 48 / 88.2 / 96 / 176.4 / 192 / 352.8 / 384 kHz	16 to 32

∗ HS-LINK cable can be used both for HS-LINK Ver. 1 and HS-LINK Ver. 2 signal transmission.

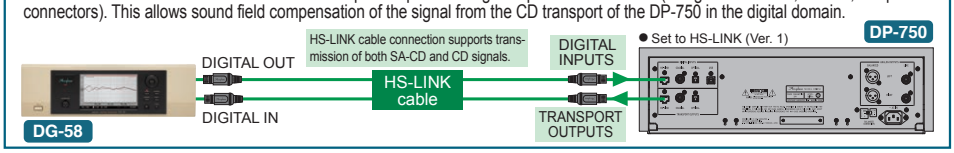
∗ With HS-LINK Ver. 2, the data and clock signal are transmitted separately, and high sampling frequencies up to 5.6448 MHz 1-bit DSD and 384 kHz 32-bit PCM are supported.



HS-LINK Ver. 2 Signal Transmission Block Diagram

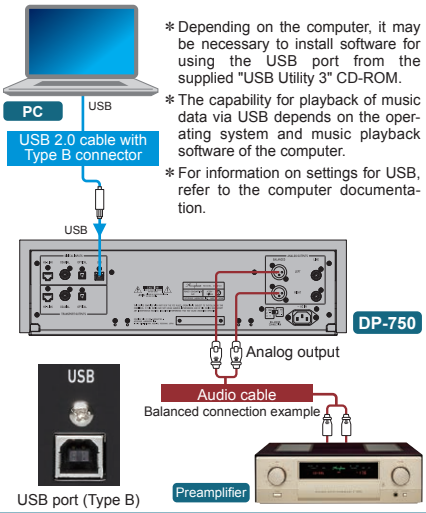
DG-58 connection example

The DG-58 can be connected between the transport outputs and digital inputs of the DP-750 (using the HS-LINK, coaxial, or optical connectors). This allows sound field compensation of the signal from the CD transport of the DP-750 in the digital domain.



Using the USB port

The USB port (Type B) of the DP-750 allows connection to a computer via USB cable, for reproduction of music library data. Because sampling frequencies up to 384 kHz / 32-bit and 11.2896 MHz / 1-bit DSD (ASIO only) are supported, even very high-resolution music files can be reproduced with impeccable sound quality.

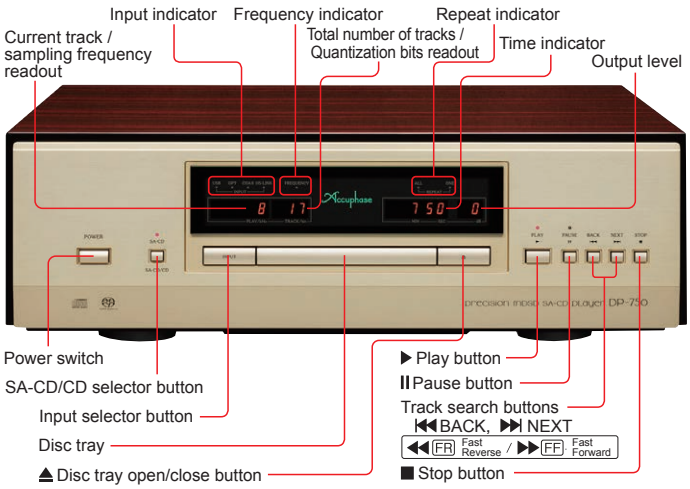


∗ Depending on the computer, it may be necessary to install software for using the USB port from the supplied "USB Utility 3" CD-ROM.

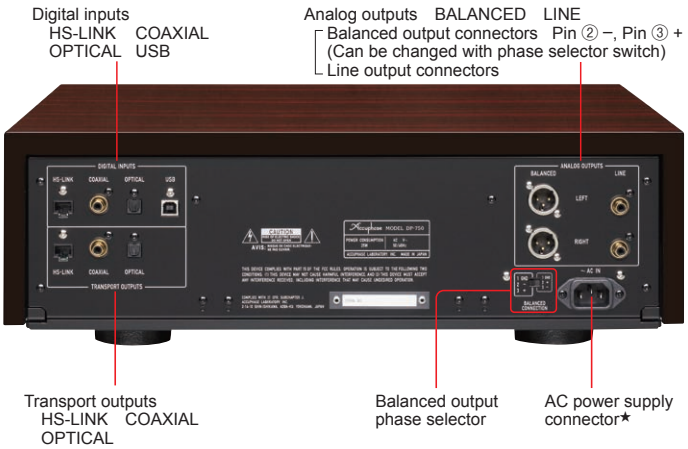
∗ The capability for playback of music data via USB depends on the operating system and music playback software of the computer.

∗ For information on settings for USB, refer to the computer documentation.

Front Panel



Rear Panel



DP-750 Guaranteed Specifications

[Guaranteed specifications measured according to JEITA standard CP-2402A / Measurement disc: PHILIPS 3122-783-00632]

Transport Section

Compatible Disc Formats 2-channel Super Audio CD
CD
DSD disc DVD-R/-RW/+R/+RW (DSF file format)
Data disc CD-R/-RW, DVD-R/-RW/+R/+RW
(Supported formats: WAV, FLAC, DSF, DSDIFF)

Data Read Principle Non-contact optical pickup

Laser Diode Wavelength SA-CD: 655 nm
CD: 790 nm

Transport Outputs

Output	Format	Suitable cable
HS-LINK	Proprietary standard	Dedicated HS-LINK cable
OPTICAL	JEITA CP-1212 compliant	JEITA standard optical fiber cable
COAXIAL	IEC 60958 compliant	75-ohm coaxial digital cable

Digital Processor Section

Digital Inputs

Input	Format	Suitable cable
HS-LINK	Proprietary standard	Dedicated HS-LINK cable
USB	USB 2.0 Hi-Speed (480 Mbps) compliant	USB 2.0 cable with Type B connector
OPTICAL	JEITA CP-1212 compliant	JEITA standard optical fiber cable
COAXIAL	IEC 60958 compliant	75-ohm coaxial digital cable

Supplied accessories

- **AC power cord**
- **Audio cable with plugs ASL-10**
- **Remote Commander RC-120**
- **USB Utility 3 CD**
- **USB Utility 3 Setup Guide**
- **Cleaning cloth**

Sampling Frequencies

Input	Format	Sampling frequency	Number of bits
HS-LINK (Ver.1)	DSD	2.8224 MHz	1
	PCM	32 / 44.1 / 48 / 88.2 / 96 / 176.4 / 192 kHz	16 to 24
HS-LINK (Ver.2)	DSD	2.8224 / 5.6448 MHz	1
	PCM	32 / 44.1 / 48 / 88.2 / 96 / 176.4 / 192 / 352.8 / 384 kHz	16 to 32
USB	DSD	2.8224 / 5.6448 / 11.2896 MHz (ASIO only)	1
	PCM	44.1 / 48 / 88.2 / 96 / 176.4 / 192 / 352.8 / 384 kHz	16 to 32
OPTICAL	PCM	32 / 44.1 / 48 / 88.2 / 96 kHz	16 to 24
COAXIAL	PCM	32 / 44.1 / 48 / 88.2 / 96 / 176.4 / 192 kHz	16 to 24

D/A Converter D/A Converter CD playback and external input (PCM): 8 MDS++ type
SA-CD playback and external input (DSD): 8 MDSD type

Frequency Response 0.5 to 50,000 Hz +0, –3.0 dB

THD + Noise 0.0005% (20 to 20,000 Hz)

Signal-to-Noise Ratio 120 dB

Dynamic Range 117 dB

Channel Separation 118 dB (20 to 20,000 Hz)

Output Voltage and Impedance BALANCED : 2.5 V 50 ohms, balanced XLR type
LINE: 2.5 V 50 ohms, RCA phono jack

Output Level Control 0 dB to –80 dB in 1-dB steps (digital)

General

Power Requirements 120 V, 220 V, 230 V AC (voltage as indicated on rear panel), 50/60 Hz

Power Consumption 26 W

Maximum Dimensions Width 477 mm (18.8")
Height 156 mm (6.1")
Depth 394 mm (15.5")

Mass 28.2 kg (62.2 lbs) net
35.0 kg (77.2 lbs) in shipping carton

Remarks

★ *This product is available in versions for 120/220/230 V AC. Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.*

★ *The 230 V version has an Eco Mode that switches power off after 120 minutes of inactivity.*

★ *The shape of the AC inlet and plug of the supplied power cord depends on the voltage rating and destination country.*

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