

Accuphase

SUPER AUDIO CD PLAYER

DP-85

● Totally separate SCAD/CD transport and processor sections ● Single lens/twin pickup high-speed access mechanism ● Digital processor ready for new-generation source formats ● MDS type D/A converter with extraordinary conversion precision ● Transport section outputs and digital inputs ● Option board slots for added versatility





Integrated SACD/CD player with HS-Link. Ready for new-generation formats such as 2.8224 MHz/1 bit and 192 kHz/24 bits. Revolutionary MDS (Multiple Delta Sigma) converter. Transport section with dedicated DSP for digital servo control and single lens/twin pickup high-speed access mechanism. Entirely separate construction of transport and processor sections, with HS-Link and coaxial transport output and digital inputs.

The Super Audio CD (SACD) is now the pinnacle format of pure audio. Based on the expertise gained with the separate type SACD/CD player combo DP-100 and DC-101, Accuphase developed the DP-85 using the latest advances in digital technology. The result is an integrated SACD/CD player of the highest quality. The DP-85 lets you fully enjoy the amazing dynamic range of SACD/CD sources. The superb sound quality is sure to capture the heart of any audiophile.

The transport section of the DP-85 features a dedicated DSP for the digital servo circuitry and a single lens/twin pickup high-speed mechanism for totally accurate signal readout and almost instantaneous access time. The processor section is ready for the latest word in quality such as 2.8224 MHz/1-bit and 192 kHz/24-bit sources. The MDS (Multiple Delta Sigma) D/A converter employs multiple strictly selected delta sigma units in a parallel configuration, assuring unprecedented conversion precision.

Although housed in one enclosure, the SACD/CD transport section and the processor section of the DP-85 can be used entirely independent of each other, thanks to the HS-Link and coaxial outputs and the digital inputs. Slots for option boards are provided as well, resulting in unsurpassed versatility for no-compromise reproduction of music. The DP-85 represents digital audio at its best, allowing the audio connoisseur to rediscover what music is all about.

[SACD/CD Transport Section] Features and Functions

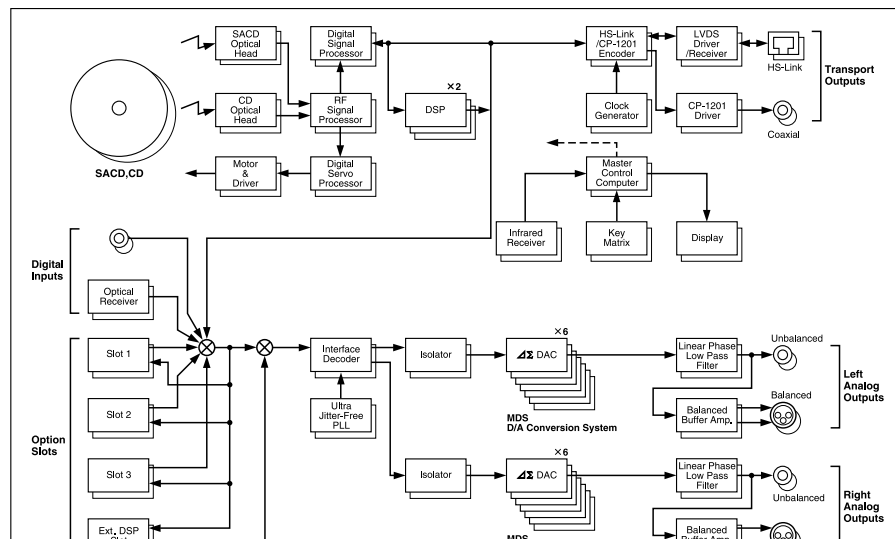
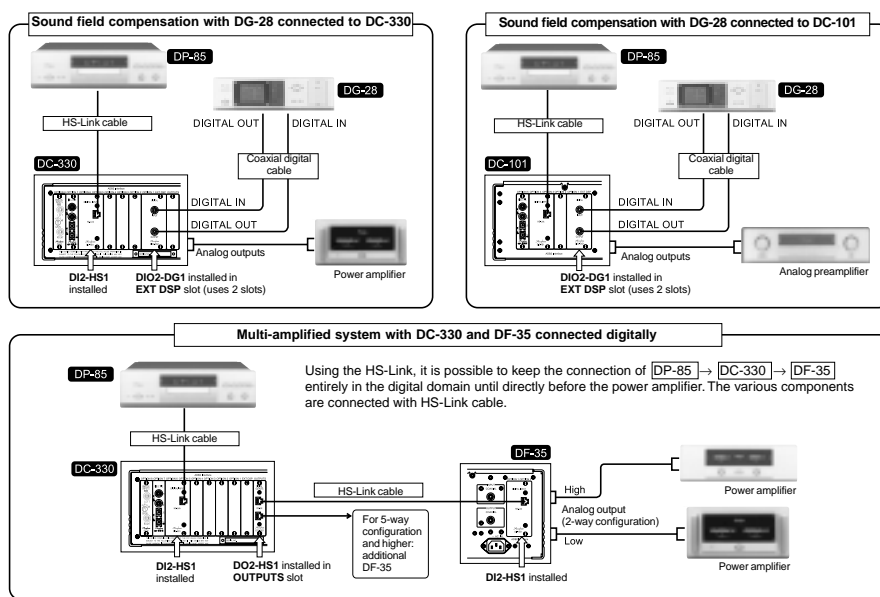
- Digital servo with dedicated DSP assures highly accurate signal pickup for SACD and CD
- Plays also regular CDs with impressive quality
- Single lens/twin pickup mechanism minimizes access time and SACD/CD switching time
- Compatible with super high quality digital audio interface HS-Link developed by Accuphase; one RJ-45 HS-Link output connector built in
- Dedicated coaxial connector for CD signal output
- Text data display shows disc and title name, artist name, and other information
- Strong chassis with resonance and vibration resistant construction
- "High Carbon" cast iron insulator feet with superior damping characteristics further enhance sound quality
- Multi-function remote commander RC-28 supplied as standard equipment



Assembly with transport outputs (HS-Link, coaxial) and digital inputs (optical, coaxial)

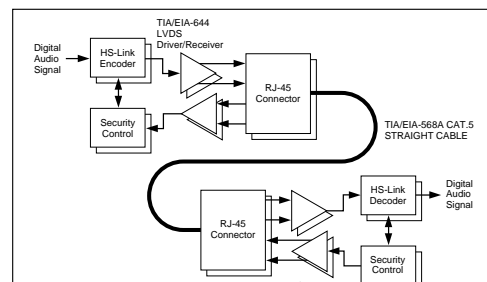
Connection examples for effective use of SACD/CD transport

The HS-Link output of the transport section can be used to combine the unit with a DC-330, DC-101, DG-28, etc., using dedicated HS-Link cable. With the DC-330 → DF-35 combination, a multi-amplified system entirely in the digital domain can be constructed.



New Generation Digital Interface HS-Link: High Speed Link

HS-Link is an ultra high-quality digital audio interface developed by Accuphase using latest digital signal transmission technology. It supports send/receive verification for copyright protection. The LVDS (Low Voltage Differential Signaling) principle allows a single dedicated HS-Link cable to transmit signals using advanced formats such as 2.8224 MHz/1 bit or 192 kHz/24 bits. Conventional digital formats are also supported. Because digital audio data are transmitted with utmost fidelity, the sound quality achieved by HS-Link is simply outstanding.



[Digital Processor Section] Features and Functions

- Supports new generation formats with high sampling rates such as 2.8224 MHz/1 bit and 192 kHz/24 bits
- MDS type D/A converter achieves stunning performance and sound quality
- D/A converter with printed circuit boards made from Teflon (glass fluorocarbon resin) with low dielectric constant and low loss
(* Teflon is a registered trademark of DuPont USA.)
- Ultra jitter-free PLL circuit topology
- Fully separate processor section with coaxial and optical digital inputs
- Ultra high-speed digital coupler ensures effective separation between digital and analog sections
- Digital level control with an adjustment range of 0 dB to -60 dB
- Balanced and unbalanced analog outputs

Further Improved MDS Type D/A Converter

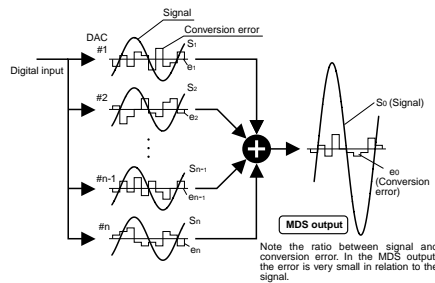
MDS (Multiple Delta Sigma) is a revolutionary design which employs several delta sigma type converters in a parallel configuration.

In the combined output of these multiple converters, conversion errors cancel each other out, resulting in a drastic improvement in all relevant aspects of converter performance: accuracy, S/N ratio, dynamic range, linearity, THD, etc.

For the DP-85, this principle has been further refined by enhancing the current-to-voltage converter in the signal adder section for even better stability and top-notch performance.



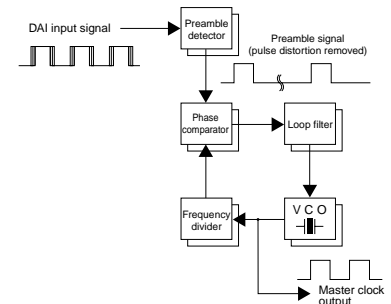
The DP-85 uses six delta sigma converters in parallel, which results in an overall performance improvement by a factor of 2.45 ($= \sqrt{6}$).



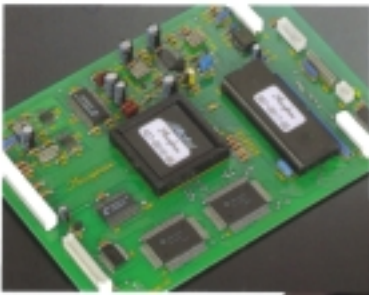
MDS type D/A converter principle

Ultra Jitter-Free PLL Circuit

For the purpose of synchronizing operation of the D/A converter with the digital audio interface (DAI), a phase-locked loop (PLL) circuit is used which generates a master clock to be used as system reference. As shown in the diagram, the Ultra Jitter-Free PLL Circuit of the DP-85 consists of a preamble detector and a voltage-controlled oscillator (VCO) using a quartz crystal element. The master clock produced by this PLL circuit is totally free from the effects of pulse distortion and jitter.



Principle of ultra jitter-free PLL circuit



- Assembly with HS-Link encoder, master clock generator, DAI encoder/decoder, ultra jitter-free PLL circuit, and other digital signal processing circuits

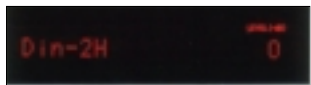
- MDS D/A converter and analog outputs assembly (with two Teflon PCBs for left & right channels, featuring low dielectric constant and low loss)



Option Boards

A total of four option board slots are provided on the rear panel (three for input/output boards and one for EXT DSP). This makes it possible to utilize the high-quality digital processor to reproduce the signal from other digital components as well. A wide variety of boards are available to suit the requirements of any system.

- Install HS-Link Input Board for connection to DP-100
- Use EXT DSP option board slot for connection to Digital Voicing Equalizer DG-28
- * For copyright reasons, the SACD signal from the DP-85 or a SACD/CD signal supplied via HS-Link does not appear at any other output (except HS-Link) and can therefore not be recorded digitally.
- * Any option board can be installed in any slot.
- * For details on board installation and usage, please refer to the instruction manual of the DP-85.
- * The input connectors on each board serve as digital input to the processor section.



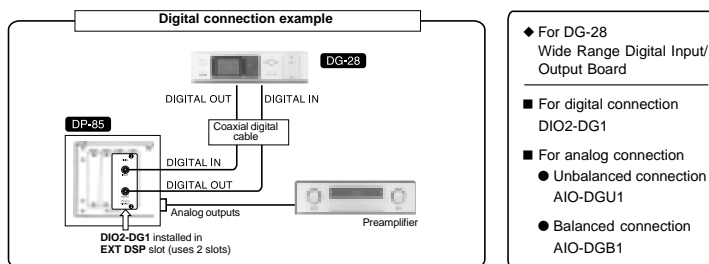
Display example with HS-Link connection



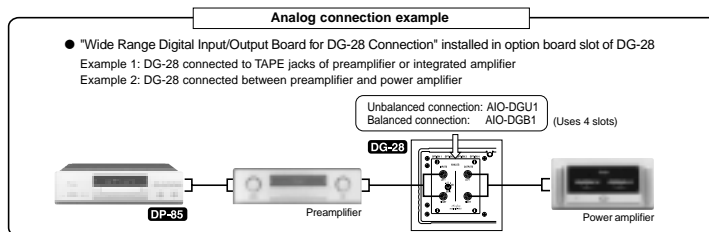
HPC Coaxial (BNC) Input Board	DI-BNC1
Digital Input/Output Board	DIO-OC1
HPC Coaxial (ST) Input Board	DIO-ST1
AES/EBU Input/Output Board	DIO-PRO1
HS-Link Input Board	DI2-HS1

Connection example for sound field compensation using DG-28 together with DP-85

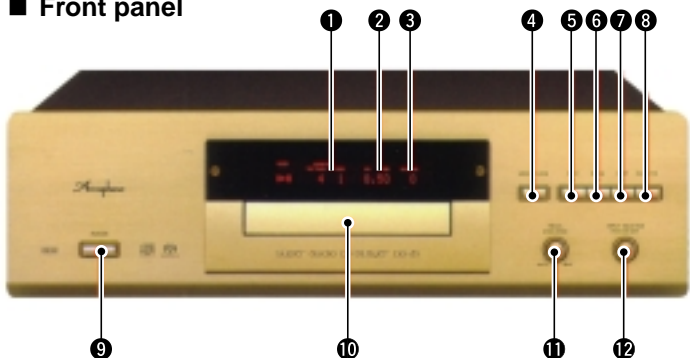
The DG-28 can handle 48-kHz/24-bit signals and perform equalization up to a threshold of 24 kHz. For high sampling frequency signals exceeding 48 kHz such as from SACD, the "Wide Range Digital Input/Output Board for DG-28 Connection" DIO2-DG1 or "Wide Range Analog Input/Output Board for DG-28" AIO-DGU1 or AIO-DGB1 are used.



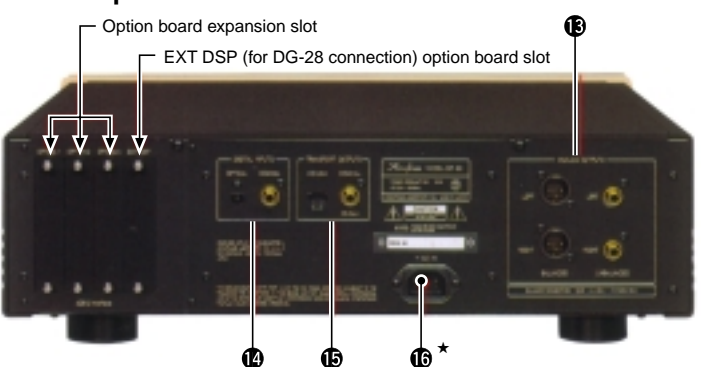
- ◆ For DG-28 Wide Range Digital Input/Output Board
- For digital connection DIO2-DG1
- For analog connection
 - Unbalanced connection AIO-DGU1
 - Balanced connection AIO-DGB1



Front panel



Rear panel



- Track/index indicator
- Time indicator
- Output level indicator
- Disc tray open/close button
- Play button
- Pause button
- Stop button
- SACD/CD selector button
- Power switch
- Disc tray
- Track search knob
- Input selector (PUSH: external digital component on/off)
- Analog output connectors (unbalanced/balanced)
- Digital input connectors (coaxial, optical)
- Transport output connectors (HS-Link, coaxial)
- AC inlet *

Remarks

- * This product is available in versions for 120/230 V AC. Make sure that the voltage shown on the rear panel matches the AC line voltage in your area.
- * The shape of the AC inlet and plug of the supplied power cord depend on the voltage rating and destination country.

Supplied accessories:

- AC power cord
- Remote commander RC-28
- Audio cable with plugs SL-10G

Guaranteed Specifications

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

[Transport Section]

- Compatible disc formats: 2-channel Super Audio CD, CD
- Data read principle: Non-contact optical pickup
- Laser diode wavelength:
 - SACD : 650 nm
 - CD : 780 nm
- Digital outputs:
 - HS-Link Connector type : RJ-45
 - Suitable cable : Dedicated HS-Link cable
 - COAXIAL Format : EIAJ CP-1201

[Digital Processor Section]

- Digital inputs:
 - COAXIAL Format : EIAJ CP-1201/AES-3 compliant
 - OPTICAL Format : EIAJ CP-1201 compliant
- Sampling frequencies:
 - 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz (16 to 24 bits, 2-channel PCM)
 - Implemented by option board:
 - 176.4 kHz, 192 kHz (24 bits, 2-channel PCM)
 - 2.8224 MHz (1 bit 2-channel DSD)
- D/A converter: 24-bit MDS converter
- Frequency response: 0.5 - 50,000 Hz +0, -3 dB
- Total harmonic distortion: 0.0008% (20 to 20,000 Hz)
- Signal-to-noise ratio: 116 dB
- Dynamic range: 112 dB (24-bit input, low-pass filter off)
- Channel separation: 108 dB (20 to 20,000 Hz)
- Output voltage and impedance:
 - BALANCED : 2.5 V at 50 ohms, balanced XLR type
 - UNBALANCED : 2.5 V at 50 ohms, RCA phono jack
- Output level control: 0 to -60 dB in 1-dB steps (digital)

[General]

- Power requirements: AC120 V/230 V (Voltage as indicated on rear panel) 50/60 Hz
- Power consumption: 25 W
- Maximum dimensions:
 - Width 475 mm (18-11/16") x Height 150 mm (5-7/8") x Depth 397 mm (15-5/8")
- Weight: 19.2 kg (42.3 lbs) net, 25.0 kg (55.0 lbs) in shipping carton

Optional Cables

- HS-Link cable: HDL-15 (1.5 m)
- Toslink optical fiber cable: LG-10 (1 m)
- HPC balanced cables: HLC-10 (1 m)
- HPC optical fiber cable (ST): HLG-10 (1 m)

* HDL-15 also available in 3 m, 5 m, 7.5 m, and 10 m lengths.
* LG-10, HLC-10, HLG-10 also available in 2 m, 3 m, 5 m lengths.

