

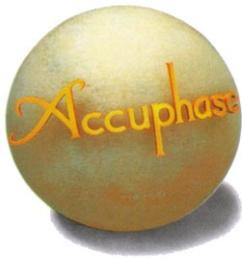
# Accuphase

*PRECISION COMPACT DISC PLAYER*

## *DP-75V*

- Separate CD transport and processor sections
- MDS type D/A converter assures phenomenal conversion precision
- Compatible with next-generation digital sources
- Ultra jitter-free PLL circuit topology
- Two sets of digital inputs and outputs
- Option board slots allow adding digital input and output boards
- Fully digital control of CD mechanism
- Balanced actuator drive circuitry





**A new-generation CD player that reproduces even the most subtle musical details – Revolutionary MDS (Multiple Delta Sigma) converter with 24-bit ultra high precision. Separate CD transport and processor sections. Ready for handling input from new-generation digital sources such as SACD and DVD-Audio. Fully digital control of CD mechanism.**

The DP-75V incorporates the latest advances in digital technology. Processing performance was upgraded to handle the new generation of super high resolution audio sources such as SACD and DVD-Audio. Enhanced sound quality is also available with existing CDs. Although the DP-75V may look like a conventional integrated Compact Disc player, it really consists of a separate transport section and a digital processor each of which can be used on its own.

The processor features a revolutionary MDS (Multiple Delta Sigma) converter with superb 24-bit precision. This ensures ultra low distortion and outstanding signal-to-noise ratio. All other performance aspects have also been significantly improved. Digital inputs allow the routing of external digital sources through the converter of the DP-75V, for playback of any format source with exceptional sound quality. To ensure future upgradability, the unit has option board slots that support the ADB 2 (Accuphase Digital Bus 2) interface which accommodates next-generation formats such as SACD and DVD-Audio. The EXT DSP option board slot allows connection of the DG-28 Digital Equalizer for sound field compensation in the digital domain.

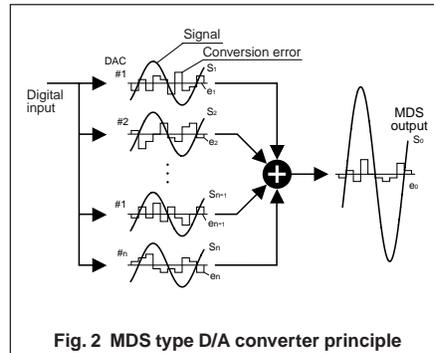
The simple, refined design of the DP-75V complements its technological prowess. The overall result is music reproduction of such clarity and detail definition that you will discover a whole new dimension of enjoyment even in long-familiar CDs.



**[Digital Processor Section]**

**Innovative MDS (Multiple Delta Sigma) converter reduces distortion to theoretical limits and assures outstanding S/N ratio**

The output signal is generated by a newly developed D/A converter that provides excellent performance and sound quality. The MDS (Multiple Delta Sigma) principle employs several delta sigma type converters in a parallel configuration, resulting in a dramatic enhancement of precision. The delta sigma principle combines oversampling with noise-shaping (a kind of digital feedback) to project the amplitude information of the digital signal onto a time axis for precise conversion. Figure 2 shows several delta sigma converters that are fed the same signal and whose outputs are combined to arrive at the overall waveform.



**Fig. 2 MDS type D/A converter principle**

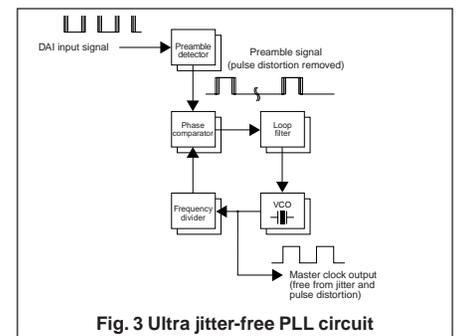
In the DP-75V six delta sigma converters are operated in parallel, resulting in a performance improvement by a factor of 2.45 ( $=\sqrt{6}$ ). An important characteristic of the MDS

principle is that the performance benefits are achieved regardless of signal frequency and signal level. Thus noise at very low signal levels, that was difficult to contain with conventional delta sigma converters, can now be drastically reduced. The audible result is music reproduction emerging from complete silence with an impressive sense of clarity and nuance.



**Ultra jitter-free PLL circuit**

For synchronizing the 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 a system reference. As shown in Figure 3,

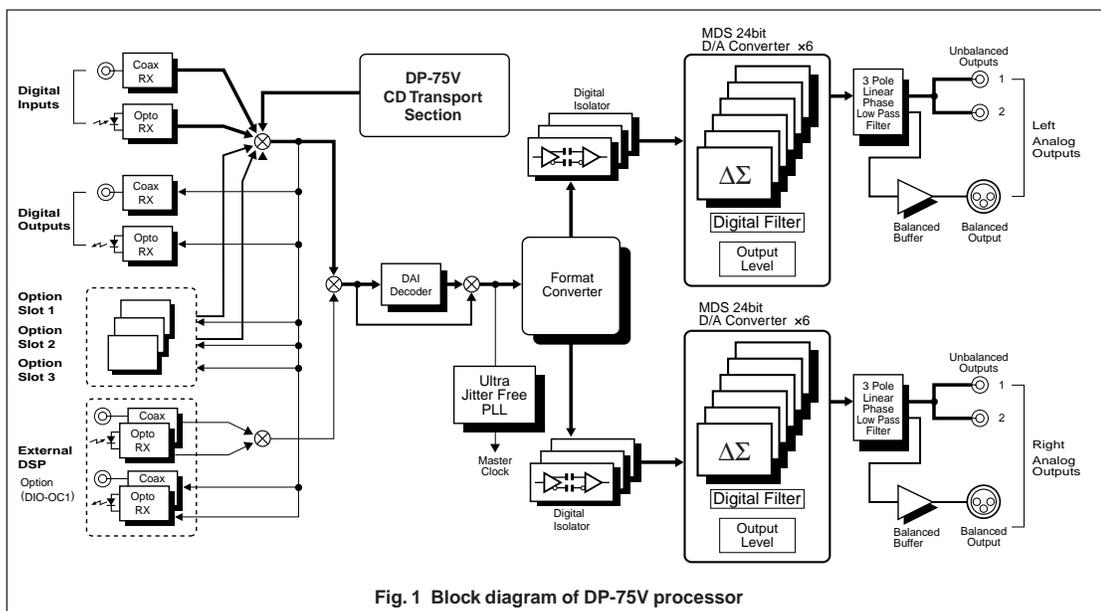


**Fig. 3 Ultra jitter-free PLL circuit**

the Ultra Jitter-Free PLL Circuit of the DP-75V 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 free from the effects of pulse distortion and jitter.

**Separate processor section with coaxial and optical input for digital signals**

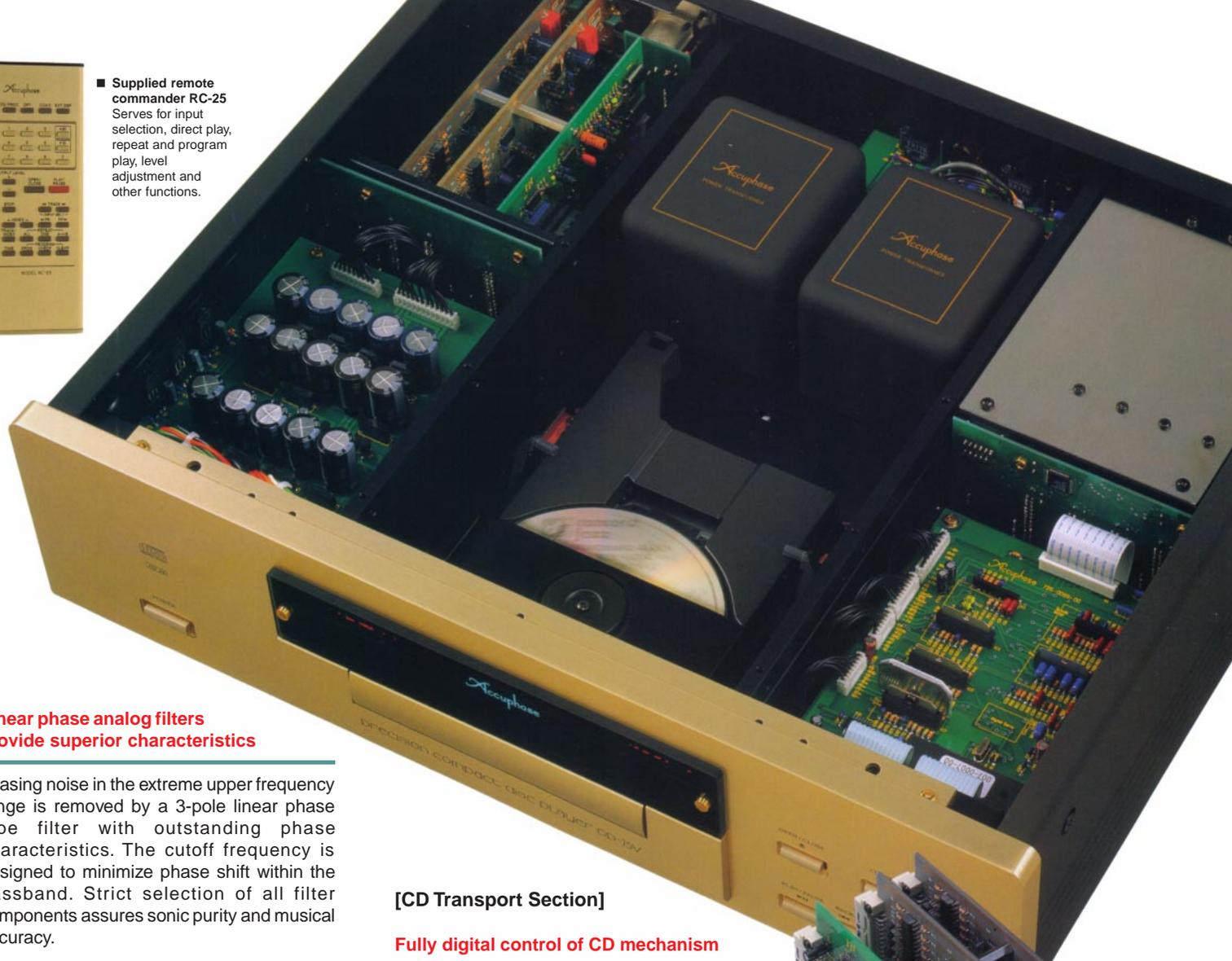
A digital input allows the user to enjoy the top-level performance of the processor section with other components that can supply a digital signal. In addition, a digital output lets the user connect a DAT recorder, MiniDisc recorder, or other component capable of recording a digital signal, so the output of the CD transport or the signal from connected external sources can be recorded. A direct connection from the digital output of the CD transport section to the Digital Pre-amplifier DC-330 is also possible.



**Fig. 1 Block diagram of DP-75V processor**



■ **Supplied remote commander RC-25**  
Serves for input selection, direct play, repeat and program play, level adjustment and other functions.



### Linear phase analog filters provide superior characteristics

Aliasing noise in the extreme upper frequency range is removed by a 3-pole linear phase type filter with outstanding phase characteristics. The cutoff frequency is designed to minimize phase shift within the passband. Strict selection of all filter components assures sonic purity and musical accuracy.

### Digital level control prevents sound quality deterioration

The 24-bit MDS D/A converter in the DP-75V is not subject to the deterioration of resolution and allows precise level attenuation down to -60 dB.

### D/A converter with printed circuit boards made from Teflon (glass fluorocarbon resin) with low dielectric constant and low loss

The D/A converter boards use a substrate of glass fluorocarbon resin which has a stable, low dielectric constant as well as superior heat resistance and high-frequency characteristics. Using this material for the audio circuitry assures signal transmission with the highest purity, resulting in a clear improvement in perceived signal-to-noise ratio. In the DP-75V, gold-plated copper traces further contribute to sonic purity.

\* Teflon is a registered trademark of DuPont USA.

### Fully balanced analog output circuitry

The audio output section features balanced circuitry which is isolated from the ground line. To match any system configuration both a set of balanced XLR connectors and a set of RCA type unbalanced connectors are provided.

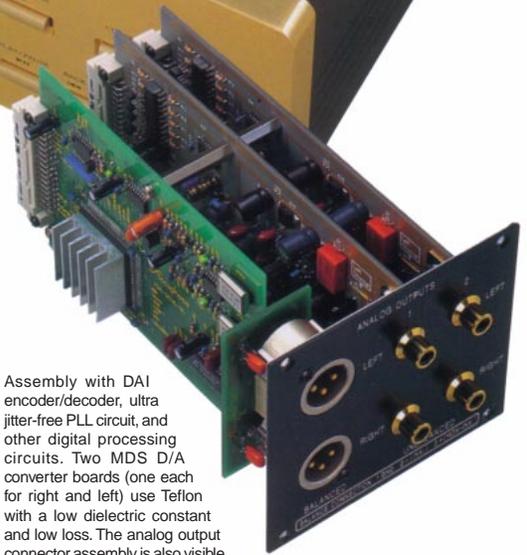
### [CD Transport Section]

#### Fully digital control of CD mechanism

The control circuitry of the mechanism section is fully digital, allowing the use of adaptive filters to optimize servo performance for each individual disc. This assures enhanced operation stability and a drastic reduction in error rate.



■ Assembly with DA1 encoder/decoder, ultra jitter-free PLL circuit, and other digital processing circuits. Two MDS D/A converter boards (one each for right and left) use Teflon with a low dielectric constant and low loss. The analog output connector assembly is also visible.



#### Balanced drive circuitry for CD actuators

The motors and actuators that move the disc tray, spindle, sled, and the focusing and tracking assembly are driven by two amplifiers arranged in a balanced configuration. Because there is no current flowing in the ground line, the operation of other circuits in the player remains entirely unaffected.

#### Tray lock prevents resonance

**Power-on play and frame display capability (1 frame = 1/75 second)**

#### Laser pickup with integrated RF amplifier for error-free operation

The pickup used in the DP-75V employs an RF amplifier which is so compact that it can be directly integrated in the photo detector pickup assembly. This assures that the high-level output signal remains free from noise interference, which in turn reduces the error rate.

## Option Boards

### Three option board slots provide flexibility for input and recording output configurations

In addition to the standard digital inputs and outputs, the option board slots provide additional ways to utilize the high performance of the digital processor section of the DP-75V. To assure compatibility with the next generation of source formats, such as SACD and DVD-Audio, the option board slots support the ADB2 interface standard.

- A digital input/output board with optical and coaxial connectors (DIO-OC1) can be used. BNC, HC optical (ST), and HPC balanced input is also possible.
- An HS (High Speed) Link option board can be installed for connection of the SACD transport DP-100.
- The EXT DSP option board slot allows connection of the DG-28 Digital Equalizer .



**The ADB 2: Accuphase Digital Bus 2**  
Interface standard for Accuphase option boards supporting sampling rates above 48 kHz, such as those used by SACD and DVD-Audio.

- Any option board can be used in any slot.
- All option boards designed for the DC-330, DC-300, DG-28, DP-65V, DP-75V, and DF-35 can be used.

#### HPC Coaxial Input Board DI-BNC1

uses 75-ohm coaxial cable with BNC plug.

#### Digital Input/Output Board DIO-OC1

provides two sets of coaxial and optical connectors, for input and output of digital signals.

#### HPC Optical Input/Output Board DIO-ST1

serves for connection of an HPC optical fiber link corresponding to the ST standard.

- \* ST is a registered trademark of AT&T.
- \* HPC optical fiber cables (HLG-10, etc.) are available from Accuphase.

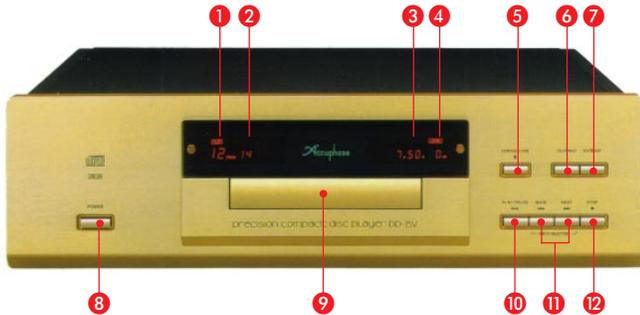
#### AES/EBU Input/Output Board DIO-PRO1

provides a set of XLR input and output connectors conforming to AES/EBU professional digital standards.

- \* HPC balanced cables (HLC-10, etc.) are available from Accuphase.

- \* A digital input board can act as an additional input for the processor section.
- \* A digital output board can act as an additional output for the CD transport section or external components connected to the unit.

### FRONT PANEL



### REAR PANEL



- |                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>1 Play track indicator</li> <li>2 TRACK/INDEX indicator</li> <li>3 TIME indicator</li> <li>4 Output level/frame indicator</li> <li>5 Disc tray OPEN/CLOSE button</li> <li>6 CD transport/processor selector button</li> <li>7 External digital component ON/OFF button</li> <li>8 POWER switch</li> <li>9 Disc tray</li> <li>10 PLAY/PAUSE button</li> </ul> | <ul style="list-style-type: none"> <li>11 Track search buttons<br/>(Processor operation: external input selector buttons)</li> <li>12 STOP button</li> <li>13 Analog outputs<br/>2 sets of unbalanced connectors, 1 set of balanced connectors</li> <li>14 Digital inputs (coaxial, optical)</li> <li>15 Digital outputs (coaxial, optical)</li> <li>16 AC inlet (for supplied power cord)*</li> </ul> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 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 depends on the voltage rating and destination country.

#### Supplied accessories

- AC power cord
- Audio cable with RCA plugs
- Remote Commander RC-25

### DP-75V Guaranteed Specifications

[Guaranteed specifications are measured according to the EIAJ standard CP-2402. Measurement disc: CP-2403]

#### [CD Transport]

- **Format**  
Standard CD format

Quantization: 16 bits  
Sampling frequency: 44.1 kHz  
Error correction principle: CIRC  
Number of channels: 2  
Revolution speed: 500 - 200 rpm  
(constant linear velocity)  
Scan velocity: 1.2 - 1.4 m/s, constant  
Non-contact optical pickup (semiconductor laser)  
GaAlAs (double heterodyne diode)

- **Data read principle**
- **Laser type**

#### [Digital Processor]

- **Input format**  
EIAJ CP-1201 compatible

Quantization: 16 - 24 bits, linear  
Sampling frequency (automatic detection):  
32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz,  
176.4 kHz, 192 kHz, 2.8224 MHz  
(implemented through option board)

- **Digital input format and level**  
(EIAJ CP-1201)

Format: Digital audio interface  
OPTICAL: Input -27 to -15 dBm  
COAXIAL: 0.5 Vp-p, 75 ohms

- **Digital output format and level**  
(EIAJ CP-1201)

Format: Digital audio interface  
OPTICAL: Output -21 to -15 dBm  
Wavelength 660 nm  
COAXIAL: 0.5 Vp-p, 75 ohms

- **Frequency response**
- **D/A converter**
- **Total harmonic distortion**
- **Signal-to-noise ratio**
- **Dynamic range**
- **Channel separation**
- **Output voltage and impedance**
- **Output level control**
- **Power requirements**
- **Power consumption**
- **Dimensions**

0.5 to 50,000 Hz +0, -3 dB  
MDS type, 24 bits  
0.0008% (20 - 20,000 Hz)  
116 dB  
112 dB (24-bit input; LPF OFF)  
108 dB  
BALANCED: 2.5 V into 50 ohms, balanced XLR type  
UNBALANCED: 2.5 V into 50 ohms, RCA-type phono jack  
0 to -60 dB in 1-dB steps (digital)  
120V/230V (Voltage as indicated on rear panel) AC, 50/60 Hz  
26 W  
Width 475 mm (18-11/16")  
Height 150 mm (5-7/8")  
Depth 397 mm (15-5/8")

- **Weight**

19.8 kg (43.7 lbs) net  
25.0 kg (55.1 lbs) in shipping carton

- **Supplied Remote Commander RC-25**

Remote control principle: infrared pulse  
Power requirements: 3 V DC, IEC R4 (size AAA) batteries x 2  
Dimensions: 66 (W) x 175 (H) x 20 (D) mm  
Weight: 225 g (including batteries)

