



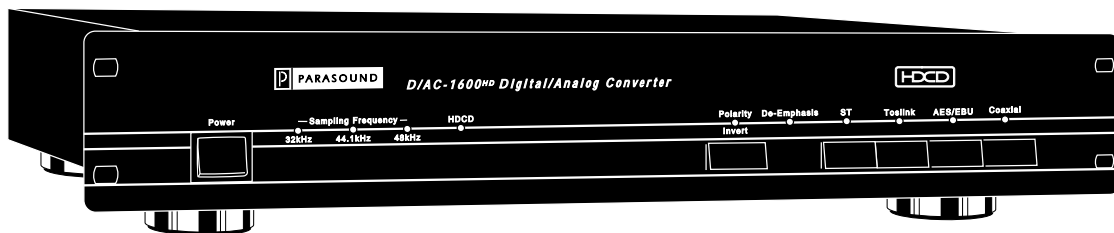
PARASOUND

D/AC-1600^{HD} Digital to Analog Converter

Congratulations on your purchase of this precision audio component and thank you for your selection of Parasound. The D/AC-1600 HD is designed to deliver incomparable musical detail from any digital source. You will enjoy the warmth and depth that are usually associated only with the finest analog sources.

In addition to its high-quality components, triple power supplies, high current analog drive stages, your D/AC-1600HD incorporates the High Definition Compatible Digital[®] PMD-100 HDCD[®] process decoder developed by Pacific Microsonics. This state-of-the-art decoder performs precise decoding of HDCD encoded recordings and also functions as a superb digital filter that will enhance the sonic quality of non-HDCD encoded recordings.

Please take a few moments to read these instructions so you may fully understand how to maximize the performance capabilities of your D/AC-1600 HD.



Unpacking and Placement

Open the carton of your D/AC-1600 HD carefully and inspect the unit for possible shipping damage. Report any damage to your dealer immediately. You will find the detachable AC line cord packed separately inside the carton.

Save the plastic bag, inserts, and carton. You may need these later for transporting the D/AC-1600 HD or for shipment in the event it ever requires factory service. Record the serial number (on rear panel) here for reference: _____

Locate your D/AC-1600 HD as close as possible to your digital source. Keep it out of direct sunlight, and away from heat sources such as a hot air register or radiator.

If you are stacking your components, avoid placing your D/AC-1600 HD on top of heat producing components, such as power amplifiers or tube-type preamplifiers. Keep it as far away as possible from your tuner or receiver to avoid RF interference.

Connecting Your D/AC-1600 HD

When you make connections, be careful to avoid tension on digital and audio interconnects which might cause damage to the connectors or cause them to pull loose. Do not attempt to bend either coaxial or optical digital cables at an angle; this could permanently damage them. Be sure to turn off the power of your preamplifier and power amplifier while making connections. As an additional safeguard, turn your preamplifier's volume control to minimum.

Digital Inputs

Your D/AC-1600 HD has four digital inputs: 75 Ω Coaxial, TOSlink, AES/EBU, and ST Optical. It is possible to connect four separate digital sources to your D/AC-1600 HD and select among them from the front panel. However, radiation from the unused digital inputs may "contaminate" the sound of the selected input source. If you have more than one digital source connected, make sure you turn off the power of the unused source(s) until you are ready to listen to it.

Coaxial: RCA jack - 75 Ω standard

75 Ω Coaxial output connections are provided on many high quality CD players. You should use only good quality cables which have been designed for digital data transmission. Cables designed for audio frequencies are not suitable and will not give you satisfactory results.

Optical: TOSlink Fiber Optic

TOSlink fiber optic connections are also popular and are found on most high-quality video laser disc players as well as older CD players and CD transports. Your dealer can assist you to select an appropriate optical cable with TOSlink connectors.

Optical: ST Fiber Optic

ST module glass fiber optics are considered state-of-the-art in fiber optic transmission. They are superior to TOSlink connectors for data transmission. The ST module employs the AT&T standard; both plastic and glass fiber optic connectors are available for ST modules connectors.

AES/EBU: Balanced XLR Connection

AES/EBU (Audio Engineering Society/European Broadcast Union) balanced connections have become the standard digital connection for professional digital audio equipment. Balanced AES/EBU XLR connectors are also becoming increasingly popular with high-end consumer equipment. AES/EBU connections are thought to be superior to coaxial, TOSlink, and even ST connections because of their inherent noise rejection capability. When you use the AES/EBU connection, be sure to use one designed for digital transmission. Cables designed for audio frequencies are not suitable and will not give you satisfactory results.

Analog Output Connections

Analog output jacks connect to any line level input on your preamplifier or even directly to your power amplifier provided it is equipped with level controls. Use only high-quality interconnects to preserve detail and clarity. Make sure your preamplifier is either turned off or its volume is set to minimum whenever making connections. There are two analog output connections: Unbalanced RCA jacks for unbalanced line output and balanced XLR connectors for balanced line output Pin 1: Ground, Pin 2: + signal, Pin 3: — signal

Digital Output Connection

The digital output jack passes your digital source's data stream directly to a digital recorder like a Mini Disc, DAT, DCC or CD-R. Use only digital quality cable for this RCA connection.

AC Power Cord

Your D/AC-1600HD has an IEC standard detachable power cord that has been specially selected for its contribution to the sound quality of this unit. Try to connect only this cord directly to a nearby AC wall outlet and avoid extension cords or connection to accessory outlets on your preamp.

Operating Your D/AC-1600 HD

Power Switch

Push the upper section of the button to turn on; lower section for off.

Input Select Buttons and LEDs

The four input select buttons correspond to the four input connectors on the rear panel: Coaxial, ST, TOSlink, and AES/EBU. Press any of these buttons to select the desired digital source. An LED will illuminate to indicate which digital source is selected.

Polarity Invert Button and LED

This button allows you to select between 0° normal operation and 180° inverted polarity. Even if you know if your preamplifier and power amplifier are inverting or non-inverting designs, you have no way to know which of your CD's may have been recorded with inverted absolute polarity. Absolute polarity means the + and — of both channels are reproduced so the compression wave of an initial musical attack correlates to the compression wave (+) from outgoing speaker diaphragm motion rather than rarefaction (—) of in-going speaker diaphragm motion. Your choice of 0° or 180° polarity will be strictly a matter of taste. It may be easier to detect differences between 0° and 180° polarity with some recordings than with others. Don't be discouraged if you cannot bear the difference; not everyone can identify absolute polarity.

HDCD[®] LED

If you play a CD that has been encoded with the HDCD[®] process, this LED will illuminate. This LED will remain off on standard recordings.

Sampling Frequency LEDs

Your D/AC-1600HD will recognize the digital signal of whatever type of digital source you connect and will switch to the correct sampling rate automatically. The 44.1 Hz sampling rate is standard for compact discs. 32 Hz is for digital broadcast; 48 Hz is for DAT.

De-Emphasis LED

Some digital recordings are encoded with pre-emphasis contouring. Your D/AC-1600 HD automatically recognizes and processes them. An LED will indicate that the recording is being de-emphasized.

“Burning-In” Your D/AC-1600HD

Like most other great audio components, your D/AC-1600 HD needs to operate for at least 72 hours before it will start sounding its best. This allows the materials of various internal parts to “form” so they can better process the complexities of musical waveforms. While your unit will sound spectacular right out of the carton, you will find it worthwhile to listen again after a few days. You will discover details in your music you may not have guessed were there.

Maintaining Your D/AC-1600 HD

Your D/AC-1600HD requires no routine maintenance. We do recommend that you remove and twist the various RCA connections once a year to remove any corrosion buildup on plugs and jacks. Make sure the power is turned off before attempting this. It's not a bad idea to do this to each of your other components while you are at it. Never use any abrasive cleaner on the front panel or top cover that may scratch or disfigure them. Use only a soft cloth moistened with clear water or Windex to remove fingerprints.

In Case of Trouble

If you suspect a problem with your unit, first recheck all your connections. If one channel is inoperative, the trouble may be caused by another component or even a defective hookup cable. If only one channel remains inoperative, try- reversing the Left and Right cables to your preamplifier (turn it off before moving wires). If the same channel stays out, it indicates trouble could be other than your D/A converter itself. We suggest you contact your authorized Parasound dealer or call Parasound Technical Service if you suspect a problem. We will suggest other diagnostic tests you can easily perform and which will save you a lot of trouble.

If we determine that your D/AC-1600 HD requires service, we will recommend a local Authorized Warranty Center. If you choose to return the unit to Parasound, we will give you Return Authorization Number. You will be asked to carefully pack the unit in its original carton and cardboard packing plus an additional outer box for protection in transit. The Return Authorization number must be clearly marked on the outer carton only. You should ship the unit by UPS with adequate insurance specified. You must include a copy of your purchase receipt to validate your ownership.

Units that arrive without your specific Return Authorization number, without a suitable shipping carton or evidence of improper internal packing or collect will be refused. We do not accept collect shipments. After repair under warranty, the unit will be returned to you via prepaid UPS. In the case of an out of warranty repair, we will advise you repair charges before you ship the unit. The same packing requirements and RA requirement apply.

D/AC-1600 HD Special Features

- Four Digital Inputs
- Balanced Analog Outputs
- Low Jitter Crystal Receiver
- HDCD[®] Process Decoder
- 4 Burr-Brown PCM 63-K DACs
- IEC removable AC cord
- Gold-plated audiophile jacks
- Gold-clad precision relays
- Three Separate Power Transformers
- Regulated Power Supplies
- Polarity Inversion Switch
- Silver-plated wiring
- De-Emphasis Circuit
- FR4 glass circuit boards
- Digital Record Output Jack
- Precision Resistors
- Precision Capacitors
- Heavy-duty chassis

Notes:

D/AC-1600 HD Specifications

Frequency Response:	2 Hz - 20 kHz, 10.25 dB
Signal to Noise Ratio:	> 108 dB, 113 dB typical
Channel Separation:	> 100 dB @ 1 kHz
Total Harmonic Distortion:	< 0.0015% @ 1 kHz
Amplitude Linearity:	>100 dB; 102 dB typical
Phase Linearity:	+/- 0° @ 20 kHz
Maximum Jitter (HF):	< 50 picoseconds RMS, using selected low jitter Crystal 8412 Digital Interface Receiver
D-A Converters:	Four Burr-Brown PCM 63P-K (highest grade) 20 bit, push-pull for each channel and fully balanced digital operation
Oversampling Rate:	8 X (352.8-kHz)
Digital Input:	32 kHz, 44.1 kHz, 48 kHz; Consumer standard SPDIF
Digital Filters:	PMD-100 High Definition Compatible Digital Digital Process Decoder
Absolute Polarity:	0° or 180° switchable
Digital Inputs:	Coaxial: 75 Ω RCA TOSlink fiber optic: EIAJ Standard CP-340/RC-5720, 660 nm typical wavelength ST module fiber optic: AT&T Standard, 820 nm typical wavelength AES/EBU Balanced XLR
Outputs:	Balanced Analog Line Out: 6.0 V nominal, 1.2 kΩ Unbalanced Analog Line Out: 3.0 V nominal, 600 Ω, Digital: 750 RCA coaxial, 0.5 V peak-to-peak
Power Supplies:	3 separate transformers and nine regulators for digital circuits and for each analog channel
Power Requirement:	120 V, 60 Hz, 18W; may be re-wired for 220-240 V, 50 Hz
Dimensions:	19" W x 3" H (3 5/8 with feet) x 13 1/8" D
Net Weight:	13.5 lb.

Specifications subject to change or improvement without notice

Rewiring for 220-240 V 50 Hz Operation

The D/AC-1600 HD can be rewired for operation abroad. Please refer this conversion to a skilled electronics technician to avoid injury or possible harm to the unit.

The main power supply printed circuit board has three separate power transformers. Nearby the transformers you will find jumper wires that correspond to the various primary windings of each power transformer.

A total of six jumper wires are connected to the circuit board for 120 V operation. Two jumpers are connected near each transformer; each jumper has 120 V printed alongside it on the circuit board.

Only 3 jumpers are connected to the circuit board for 220-240 V operation. One jumper is connected near each transformer; each jumper has 220 V printed alongside it on the circuit board.

For 220-240 V operation, you must also disconnect the six 120 V jumpers.

Parasound Limited Warranty (USA only)

Parasound Products, Inc. warrants products purchased from authorized Parasound Dealers and Custom Installers to the original owner for two years from the date of purchase. In the event of a defect in materials or workmanship, the product will be repaired promptly without charge. At Parasound's option, product may be replaced with new product of equal or superior value to the defective product according to the condition that it was received by Parasound.

The warranty excludes parts subject to normal wear such as fuses, laser pickups, or cosmetic parts.

The warranty also excludes damage resulting from abuse, shipping damages, failure to use products within specifications or instructions.

The warranty is void in the event of unauthorized repair or modification, removal or defacing of the serial number.

Dealer stock will be warranted to a maximum of 2 years from date of purchase.

In no case will Parasound accept warranty claims for any purchaser's unit after 38 months from date of original dealer's purchase from Parasound.

For Returns: Call, write, or fax Parasound's Technical Services Department. If it is decided that the unit should be returned for inspection at Parasound, it must be packed in its original carton as well as an additional outer carton. An RA number will be issued which must appear on the outer carton. A note stating the nature of the defect should accompany the unit. Units that arrive with evidence of mispacking (internal rattling, damaged carton) will be refused by Parasound.



PARASOUND

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