

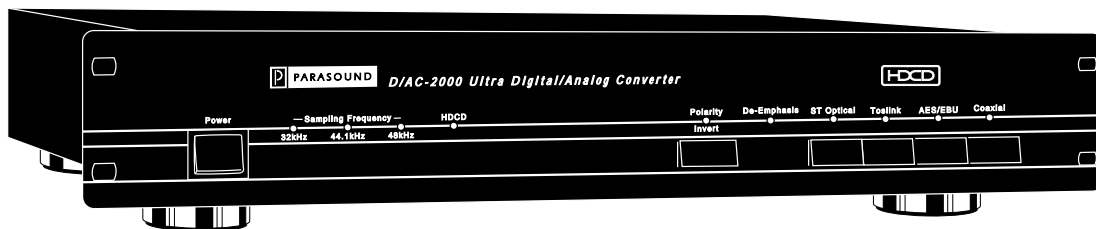


# PARASOUND

## *D/AC-2000 Ultra Digital to Analog Converter*

Congratulations on the purchase of this precision audio component and thank you for your selection of Parasound. Your new D/AC-2000 features a state-of-the-art 20 bit D20400A dual digital to analog converter and custom AES 21 digital interface receiver designed and manufactured by UltraAnalog, Inc. The D/AC-2000 also incorporates the High Definition Compatible Digital® PMD-100 HDCD® process decoder developed by Pacific Microsonics. This 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 new digital to analog converter.



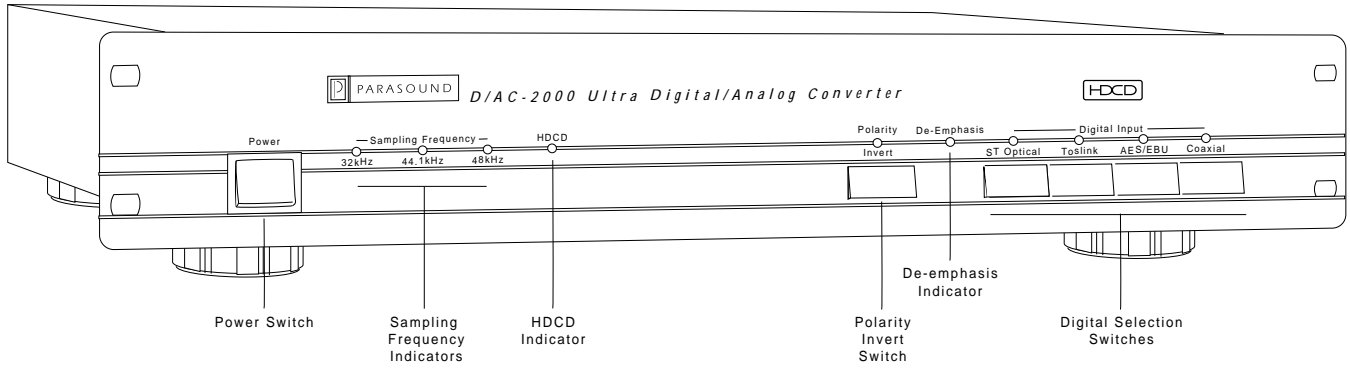
### Unpacking and Placement

Open the carton of your D/AC-2000 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.

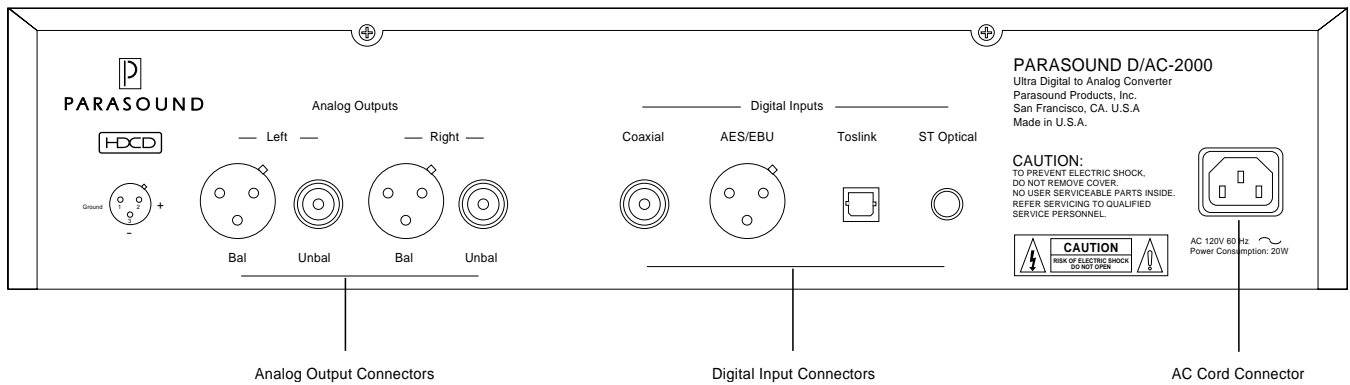
Save your plastic bag, inserts, and carton. You may need these later for transporting the D/AC-2000 or for shipment in the event it ever requires factory service. Record the serial number (on rear panel) here for future reference: \_\_\_\_\_

Place your D/AC-2000 as close as possible to your digital source. Keep it out of direct sunlight, and away from heat sources such as a hot air vent or radiator. If you are stacking your components, avoid placing your D/AC-2000 on top of heat producing components, such as power amplifiers or tube-type preamplifiers. Keep it as far away from your tuner or receiver as possible to avoid RF interference.

## D/AC-2000 Front and Rear Panel Drawings



**Figure #1 D/AC-2000 Front Panel Controls**



**Figure #2 D/AC-2000 Rear Panel Connections**

## Connecting Your D/AC-2000

When you make connections, be careful to avoid tension on digital and audio interconnects that might cause damage to the connectors or cause them to pull loose. Do not 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-2000 has four digital inputs: Coaxial, AES/EBU, ST Optical, and TOSlink. It is possible to connect four separate digital sources to your D/AC-2000 and select among them from the front panel. However, radiation from 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 until you are ready to listen to it.

#### Coaxial: RCA Connector - 75 $\Omega$ Unbalanced

75  $\Omega$  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 such as the Stereophile recommended Parasound DataBridge. Cables designed for audio frequencies are not suitable for digital signals and will not give you satisfactory results.

#### AES/EBU: XLR Connector - 110 $\Omega$ Balanced

AES/EBU (Audio Engineering Society/European Broadcast Union) 110  $\Omega$  balanced connections have become the standard digital connection for professional digital audio equipment and are 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 such as the recommended Parasound Balanced DataBridge. Cables designed for audio frequencies are not suitable and will not give you satisfactory results.

#### Optical: ST Fiber Optic

The ST module employs the AT&T data transmission standard. ST fiber optic connections are considered by some to be superior to either TOSlink or coaxial connection for data transmission. Use care when connecting the ST connector to the D/AC-2000. ST connectors are more fragile than other connectors. Pay special attention to the guide pins when making an ST connection; never try to force the connector.

#### 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 in selecting an appropriate optical cable with TOSlink connectors.

## **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: RCA jacks for unbalanced line output and XLR connectors for balanced line output. The pin configuration for the XLR connector is: Pin 1 Ground, Pin 2 + signal, and Pin 3 - signal.

## **AC Power Cord**

Your D/AC-2000 has an IEC standard detachable power cord especially selected for its contribution to the sound quality of this unit. Try to connect 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-2000**

### **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: ST, TOSlink, AES/EBU and Coaxial. Press one 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. Absolute polarity means the compression from an instrument or voice in the original recording corresponds to a compression from the loudspeaker. Conversely, a rarefaction from an instrument or voice in the recording should correspond to a rarefaction from the loudspeaker. 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 hear the difference; not everyone can identify absolute polarity and not every recording will reveal it.

### **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, but the HDCD PMD-100 will continue to operate as a superior digital filter and improve the sound of standard recordings.

### **Sampling Frequency LEDs**

Your D/AC-2000 will recognize the digital signal of whatever type of digital source you connect and will automatically switch to the correct sampling rate automatically. The 44.1 kHz sampling rate is standard for compact discs. 32 kHz is for digital broadcast; 48 kHz is for DAT.

### **De-Emphasis LED**

Some digital recordings are encoded with pre-emphasis contouring. Your D/AC-2000 automatically recognizes and processes them. This LED will indicate that the recording is being de-emphasized.

## **“Burning-In” Your D/AC-2000**

Like most other great audio components, your D/AC-2000 will start sounding its best after having music played through it for at least 72 hours. 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-2000**

Your D/AC-2000 requires no routine maintenance. We do recommend that you remove and clean the various connections once a year to remove any corrosion buildup on plugs and jacks. Make sure the power is turned off before attempting this. 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, turn off your audio system and recheck all your connections. If one channel is inoperative, the trouble may be caused by another component or a defective hookup cable. If only one channel remains inoperative, try reversing the left and right cables to your preamplifier. If the same channel stays out, it indicates the trouble could be other than your D/A converter. We suggest you contact your authorized Parasound dealer or call Parasound Technical Services if you suspect a problem. We will suggest other diagnostic tests you can easily perform that may save you a lot of trouble.

If we determine that your D/AC-2000 requires service, we will refer you to your local Authorized Parasound Warranty Center. If you choose to return the unit to Parasound, we will give you a 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 with evidence of improper internal packing will be refused. We do not accept collect shipments. After repair under warranty, the unit will be returned to you via prepaid UPS.

## **D/AC-2000 Special Features**

- Four Digital Inputs
- Balanced Analog Outputs
- Low Jitter UltraAnalog Receiver
- UltraAnalog 20 Bit DAC
- HDCD® Process Decoder
- Made In the U.S.A.
- Gold-Plated Audiophile Jacks
- Gold-Clad Contact Precision Relays
- Two Separate Power Transformers
- Regulated Power Supplies
- Polarity Inversion Switch
- Switchcraft XLR Connectors
- De-Emphasis Circuit
- FR4 Glass Circuit Boards
- Heavy-Duty Chassis
- Precision Resistors
- Precision Capacitors
- Removeable IEC AC Cord

## D/AC-2000 Specifications

<b>Frequency Response:</b>	DC - 20 kHz, +0/-0.5 dB
<b>Signal to Noise Ratio:</b>	> 108 dB
<b>Channel Separation:</b>	> 104 dB @ 20 kHz; > 110 dB @ 1 kHz;
<b>Total Harmonic Distortion:</b>	< 0.0015% @ 1 kHz Full Scale Output < 0.0008% @ 1 kHz -20 dB Output
<b>Phase Linearity:</b>	+/- 0.1° Typical
<b>Maximum Jitter:</b>	< 40 picoseconds RMS, (10 Hz - 40 kHz) using selected low jitter Custom Ultra Analog AES 21 Digital Interface Receiver
<b>D-A Converters:</b>	Ultra Analog DAC 20400A Dual 20 Bit Digital to Analog Converter
<b>Oversampling Rate:</b>	8 X (352.8-kHz @ 44.1 kHz)
<b>Digital Input:</b>	32 kHz, 44.1 kHz, 48 kHz; SP/DIF and AES/EBU
<b>Digital Filters:</b>	PMD-100 High Definition Compatible Digital Process Decoder
<b>Absolute Polarity:</b>	0° or 180° switchable
<b>Digital Inputs:</b>	Coaxial: 75 Ω RCA (unbalanced) AES/EBU: 110 Ω XLR (balanced) ST Fiber Optic: AT&T Standard (820 nm typical wavelength) TOSlink Fiber Optic: EIAJ Standard (660 nm typical wavelength)
<b>Outputs:</b>	Unbalanced Analog Line Out: 2.75 V nominal, 600 Ω Balanced Analog Line Out: 5.5 V nominal, 1.2 k Ω
<b>Power Requirement:</b>	120 V, 60 Hz, 18W; may be re-wired for 220 - 240 V, 50 Hz
<b>Dimensions:</b>	19" W x 3" H (3 5/8 with feet) x 13 1/8" D
<b>Net Weight:</b>	12.5 lb.

**For Returns:** Contact 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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