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# Owner's Manual

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## Model DAC7

DIGITAL-ANALOG CONVERTER

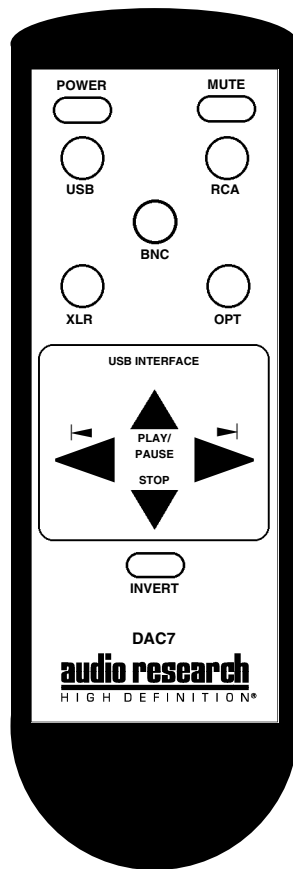
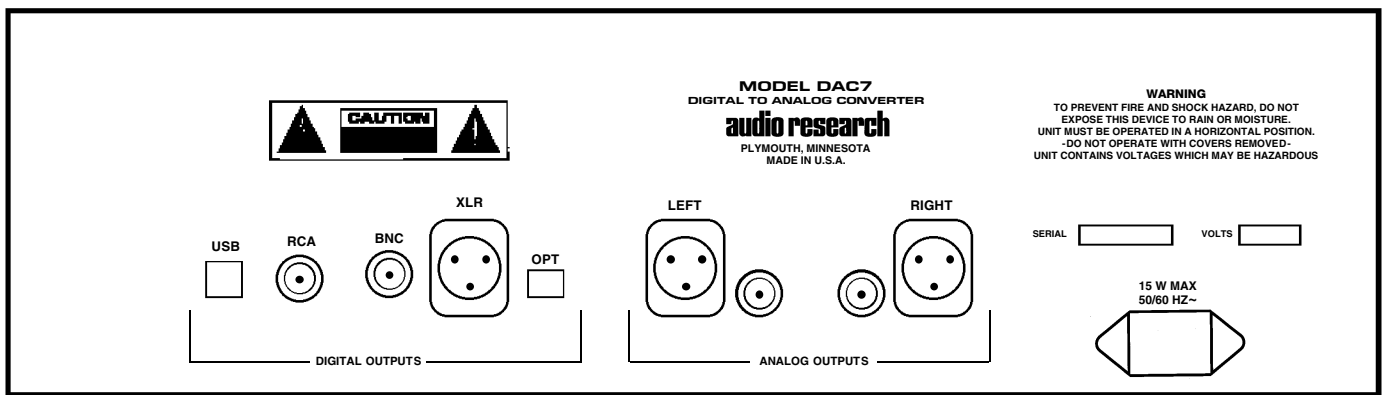
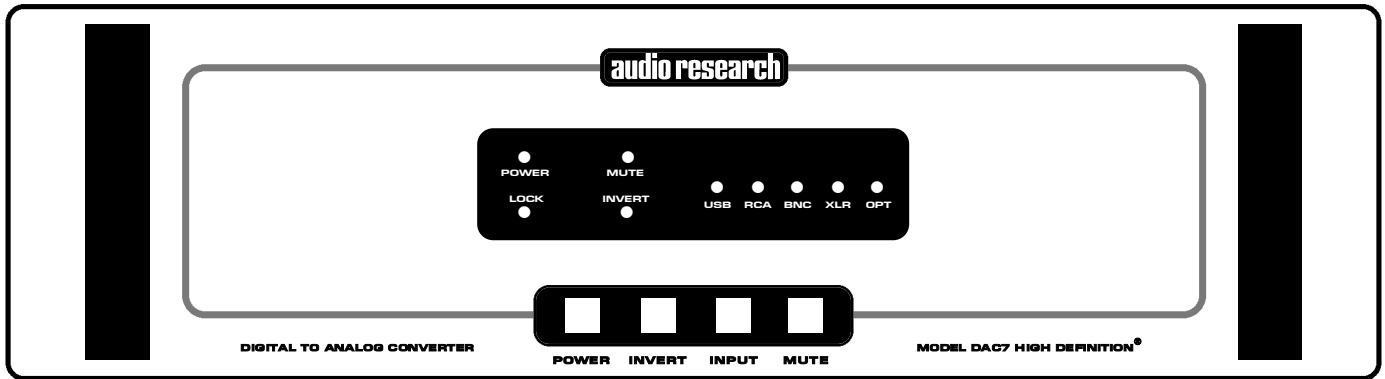
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DAC7 Manual / 8-08 / 6-11-08



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## Preface

Please take time to carefully read and understand the following instructions before you install or attempt to operate this equipment. Becoming familiar with the product and its correct operating procedures will help assure you of maximum musical enjoyment and reliable operation. The effort you invest now will be well rewarded in the years ahead.

## Warnings

1. Note: This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment of and on, the user is encouraged to try to correct the interference by one or more of the following measures.
  - Re-orient or relocate the receiving antenna.
  - Increase the separation between the equipment and the receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/TV technician for help.
2. To prevent fire or shock hazard, do not expose this product to rain or moisture.
3. This unit operates on voltages which can cause serious injury or death. Do not operate with covers removed. Any necessary servicing should be carried out by your authorized Audio Research dealer or other qualified electronics technician.
4. The power cord on this unit is safety-tested and is equipped with a proper grounding plug. If used normally, it will provide a safe earth ground connection of the chassis. Defeat of the grounding plug or replacement of the plug or power cord, or any unauthorized modification of the active circuitry or controls of this unit, automatically voids warranty coverage, and could cause injury or death.
5. For safe operation and protection against fire hazard, replace fuses only with those of the same type and rating as those supplied with this unit.

## Packaging

Save all packaging accompanying this product. You have purchased a precision electronic instrument, and it should be properly cartoned any time shipment becomes necessary. It is very possible that this unit could be damaged during shipment if repackaged in cartoning other than that designed for it. The original packaging materials help protect your investment from unnecessary damage, delay and added expense whenever shipment of this unit is required.

## Description of Front Panel Controls

**POWER ON/OFF:** Supplies power from AC wall outlet to DAC7 when in "On" position, as indicated by illuminated green "Power" LED.

**INPUT SWITCH/LOCK LED:** Allows user to select one of five possible digital sources indicated by front panel input LEDs (USB, RCA, BNC, XLR, OPT). When a digital source is connected properly, the "Lock" LED will light when that input is selected.

**MUTE:** Selecting Mute (indicated by illuminated Mute LED) mutes output of DAC7. When turned on, the DAC7 defaults to mute setting.

**INVERT:** Inverts absolute phase of output signal.

## Description of Remote Control Functions

The remote control duplicates all of the DAC7 front panel control functions, including Power, Invert (phase), and Mute. Whereas the Input button on the front panel toggles through the five inputs, the remote control has individual input buttons (USB, RCA, BNC, XLR, OPT) allowing direct access to each input.

The remote control also features (HID) USB Interface controls. When the DAC7 is connected to a USB source component (Apple or PC, for example) which is configured with appropriate software or programs (iTunes®, windows Media Player, etc.), the remote control should be able to control the USB source component to PLAY/PAUSE, STOP, TRACK-ADVANCE (▶) and TRACK-BACK (◀).

Because of the wide variety of operating systems and software programs, Audio Research cannot guarantee that the USB Interface will control your particular USB source product.

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## Connections

### OUTPUT CONNECTORS:

- RCA output connectors: for connection to unbalanced (RCA) inputs of your preamplifier or line stage.
- XLR output connectors: for connection to balanced (XLR) inputs of your preamplifier or line stage.

### INPUT CONNECTORS:

USB, RCA, BNC, XLR, OPT (TOSLINK FIBER).

## Installation Instructions

While the DAC7 does not dissipate an unusual amount of heat, it is important that it be provided with reasonable air-flow to assure long, trouble-free operation. In addition, the following installation guidelines will help insure maximum sonic performance as well as reliable service.

1. Upright and horizontal mounting is suggested if extended operation (longer than one hour) is contemplated.
2. Do not “stack” the DAC7 on top of a power amplifier.
3. Do not place or operate your DAC7 on a soft or irregular surface such as a rug. This will prevent proper ventilation.
4. Never operate your DAC7 without the top and bottom covers installed. These are required both for safety as well as shielding from interference (except in service operations).

## Operating/Start-Up Procedure

1. Make sure power switch is set to “Off” position.
2. Secure all rear-panel connections between DAC7, preamplifier, and digital input source(s).
3. Plug 3-prong power cord from the rear of the DAC7 into a grounded AC wall receptacle.
4. Turn power switch to “On.” The green “Power” LED will glow dimly for approximately 60 seconds while the power supply stabilizes, indicating operation of the automatic muting circuit. After this warm-up period, the LED will brighten, indicating that your DAC7 is ready for operation.

## Servicing

Because of its careful design and exacting standards of manufacture, your DAC7 should normally require only minimal routine service to maintain its high level of performance.

**CAUTION:** Your DAC7 contains sufficient levels of voltage and current to be lethal. Do not tamper with a component or part inside the unit. Refer any needed service to your authorized Audio Research dealer or other qualified technician.

Should service be necessary, please contact your Audio Research dealer, or Audio Research Customer Service at (763) 577-9700 (CST).

## Cleaning

To maintain the new appearance of this unit, occasionally wipe the front panel and top cover with a soft, damp (not wet) cloth to remove dust. A mild, non-alkaline soap solution or dilute isopropyl alcohol may be used to remove fingerprints or similar smudges. Cleaners containing abrasives should **not** be used as they will damage the anodized finish of the front panel. A small, soft paint brush is effective in removing dust from bevels, the recessed nameplate and other features of the front panel.



## Disposal and Recycling Guidelines

To dispose of this electronic product, do not place in landfill. In accordance with the European Union Waste Electrical and Electronic Equipment (WEEE) directive effective August 2005, this product may contain regulated materials which upon disposal require special reuse and recycling processing.

Please contact your dealer or importing distributor for instructions on proper disposal of this product in your country. Or, contact Audio Research Corporation (763-577-9700) for the name of your importing distributor and how to contact them.

Packing and shipping materials may be disposed of in a normal manner.

## FCC Rules

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause

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harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Use interconnect cables of no more than one meter in length.

Increase the separation between the equipment and receiver.

Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help.

## Limited Warranty

Audio Research Corporation products are covered by a 3-Year Limited Warranty or a 90-Day Limited Warranty (vacuum tubes). This Limited Warranty initiates from the date of purchase, and is limited to the original purchaser, or in the case of demonstration equipment, limited to the balance of warranty remaining after original shipment to the retailer or importer.

In the United States, the specific terms, conditions and remedies for fulfillment of this Limited Warranty are listed on the warranty card accompanying the product in its shipping carton, or may be obtained from the authorized retailer or from the Audio Research Customer Service Department. Outside the United States, the authorized importing retailer or distributor has accepted the responsibility for warranty of Audio Research products sold by them. The specific terms and remedies for fulfillment of the Limited Warranty may vary from country to country. Warranty service should normally be obtained from the importing retailer or distributor from whom the product was purchased.

In the unlikely event that technical service beyond the ability of the importer is required, Audio Research will fulfill the terms and conditions of the Limited Warranty. Such product must be returned at the purchaser's expense to the Audio Research factory, along with a photocopy of the dated purchase receipt for the product, a written description of the problem(s) encountered, and any information necessary for return shipment. The cost of return shipment is the responsibility of the purchaser.

## Specifications

### OUTPUTS, ANALOG: (Stereo)

1. Balanced XLR 5.2V RMS (+14.3dBv) max.
2. Single-Ended RCA 2.6V RMS (+8.3dBv) max.

### OUTPUT IMPEDANCE: (Analog)

500 ohms BAL, 250 ohms SE.

### FREQUENCY RESPONSE:

0.5–20,000Hz +0 -1dB.

### SIGNAL TO NOISE RATIO:

BAL 114dBA below 20kHz. SE 110 dBA.

### DISTORTION: .03% 1kHz.

### RESOLUTION: 24 BIT DAC.

### CHANNEL SEPARATION: BAL 120dB 1kHz.

### INPUTS, DIGITAL: (5) GALVANICALLY ISOLATED

USB: Spec 1.0 or 2.0 16 BIT 32kHz to 48kHz, MAC or PC.

RCA: 75 ohm SPDIF 16/32 to 24/192.

BNC: 75 ohm SPDIF 16/32 to 24/192.

XLR: 110 ohm AES/EBU 16/32 to 24/192.

OPT: 660 NM TOSLINK FIBER 16/32 to 24/192.

**JITTER REDUCTION:** High-stability crystal-controlled re-clocking for all outputs.

**POWER SUPPLY:** 2 transformers, 7 Regulators.

### POWER REQUIREMENTS (detachable power cord):

100-135VAC 60Hz (200-270VAC 50/60Hz), 15 watts maximum (8 watts SLEEP.)

**COMPLIANCE:** RF Interference complies with FCC and CE MARK.

### FRONT PANEL CONTROL FUNCTIONS:

POWER: on/off

INVERT: output polarity

INPUT: select (advance)

MUTE: outputs

### INFRARED REMOTE CONTROL FUNCTIONS:

POWER: on/off

MUTE: outputs

USB: input select

RCA: input select

BNC: Input select

XLR: Input select

OPT: Input select

USB PLAY/PAUSE

USB PREV ◀

USB NEXT ▶

USB STOP

INVERT: output polarity

**DIMENSIONS :** 19" (48 cm) W x 5<sup>1</sup>/<sub>4</sub>" (13.4 cm) H x 10" (25.4 cm) D. Handles extend 1<sup>1</sup>/<sub>2</sub>" (3.8 cm) forward of the front panel. Rear connectors extend 3<sup>3</sup>/<sub>4</sub>" (1.9 cm).

**WEIGHT:** 11.5 lbs. (5.2 kg) Net; 18 lbs. (8.2 kg) Shipping.

Specifications subject to change without notice.

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