KRELL
DIGITAL INC.

STUDIO
OWNER'S REFERENCE

A. INTRODUCTION

Thank you for your purchase of the Krell STUDIO Digital-to-Analog processor and welcome to the Krell family of audio components. You have joined a select group of discriminating listeners who enjoy the finest in music reproduction.

Krell Digital is dedicated to the development of technologically advanced components for the reproduction of digitally recorded music. These designs continue the Krell tradition of uncompromising performance through leading-edge technology.

To obtain the best performance from your STUDIO processor, careful attention should be paid to its placement, installation and operation. A thorough understanding of these details will help insure satisfactory operation and long life for the STUDIO and related system components.

This Owner's Reference is divided into several sections, each designed to perform a different function. As you read through this Owner's Reference you will become better acquainted with the features and functions that make the STUDIO a superb value. A Question and Answer section is also included where answers to common questions are provided. Should you have any questions or suggestions please feel free to contact your authorized dealer or the KRELL staff for assistance.

In the unlikely event that your STUDIO should require service, you will be pleased to know that it is backed by a comprehensive Customer Satisfaction policy and one of the most advanced service facilities in the industry. For detailed information on the terms and conditions of service, please consult your warranty registration card or your authorized KRELL Distributor.

B. TABLE OF CONTENTS

INTRODUCTION

C. UNPACKING INSTRUCTIONS

1. Open the box and remove the top layer of foam. The following items will now be visible:

1   STUDIO D/A Processor
1   AC power cord
1   Packet containing the Owner's Reference and
     warranty card

NOTE: If any of these items are not included, please contact your authorized dealer immediately for assistance.

2. Carefully remove the unit and accessories from the box and remove the protective plastic wrap from the unit.

NOTE: Save all packing materials. If you must ship your STUDIO in the future, repack the unit in its original packaging to prevent transit damage.

3. Remove the voltage identification sticker on the back of the unit.

D. BASIC INSTALLATION
AND OPERATION

Before you install the STUDIO into your system we recommend that you follow these guidelines in choosing the location. This will facilitate a clean, trouble-free installation.

CAUTION: When making connections to this component or any other, make sure the power amplifier is OFF and the preamplifier is in the MUTE or STANDBY mode.

1. Although well shielded, the processor should not be placed in close proximity to hum-sensitive components (i.e. preamps, turntables, tuners, etc.)

2. As with any high quality component, ensure that the vent openings in the chassis are free from obstruction, allowing the processor to dissipate heat created by its highly regulated power supply and high-bias, Class A output stage.

3. Place the unit on a clean, level surface away from excessive heat or moisture.

4. Connect the AC power cord to the back of the unit. Once the power cord is secured, plug the other end into an AC outlet.

NOTE: While the STUDIO has superb regulation and does not require a dedicated AC circuit, we strongly advise against any connections through extension cords or multiple AC adaptors. High quality 15 amp grounded AC strips are acceptable.

CAUTION: Do not remove or bypass the ground pin on the end of the AC cord. This may cause RFI (radio frequency interference) to be induced into your playback system.

E. INPUT AND OUTPUT CONNECTIONS

1. Connect the STUDIO analog output to the line level input of your preamplifier.

The STUDIO is equipped with two analog output configurations: Single-ended via RCA connectors and Balanced via XLR connectors. If your preamplifier has high level balanced inputs, we recommend the balanced outputs of the processor be used. There are considerable sonic benefits associated with the use of this type of interconnection. High quality tri-axial cable should be used for balanced interconnects. This type of cable is considerably different from cable normally used for single-ended interconnects.

NOTE: The two outputs can be used to simultaneously feed two different systems.

NOTE: If you decide to use the single-ended analog outputs, the type of interconnect cable should be chosen carefully. High quality shielded cable is suggested. The red banded connector indicates the right channel and the white indicates the left channel.

Care should be taken to insure that the channel orientation between the processor and the high level inputs of your preamplifier are maintained.

2. Connect the digital output of your CD transport and other digital sources to the inputs of the STUDIO; Coax 1, Coax 2, Optic or XLR/ST If you are using multiple digital sources, take note of where each input and corresponding switch setting is located.

The STUDIO is equipped with two coaxial digital inputs, an AT&T wide bandwidth fibre optic, a standard fibre optic digital input and an AES/EBU digital input for use with Compact Disc players, Laser Disc players, DATs or satellite receivers. All of the inputs can accept a signal from any digital source. When a powered digital source is introduced to an input and that input is selected with the Input switch, the corresponding signal LED will illuminate.

NOTE: If the digital source is ON and the signal LED does not illuminate, check to make sure the digital interconnect cable is secure at both ends or is not in need of repair.

NOTE: Care should be taken in selecting the type of cable used to link the digital source to your processor. If coaxial cable is to be used, it should be non-capacitive and have a bandwidth in excess of 10MHZ to prevent drop-out errors.

NOTE: If an optical cable is selected we strongly recommend that it be an AT&T wide bandwidth fibre optic or high quality Quartz fibre cable. A benefit of using a fibre optic interconnect is that it reduces ground loop problems often associated with quality audio systems.

3. Connect the digital output of the STUDIO to the input of a digital recording device. Then connect the digital output of the recorder to the TAPE input on the STUDIO.

Digital Tape Record Outputs are provided via two RCA connectors and an optical output. This output is used to feed the digital input of a digital recording device. The Tape input is provided for any digital source and can be used as an additional input. It should be used for the output of a digital recording device to avoid the possibility of creating a feedback loop.

4. Once you have completed the necessary input and output connections, select the input of your choice. For each input selected, the corresponding LED will illuminate when the digital input source (must have its power ON) and the processor have linked.

F. PROCESSOR OPERATION AND DIGITAL TAPE LOOP

1. Select an input with the Input switch. Notice the Signal LED will illuminate when the digital source is turned on and has linked with the processor. Once this link is complete the processor is ready to pass a signal.

2. Be sure that your preamplifier's volume control is completely turned to the OFF (lowest volume) position.

3. Turn ON your components, remembering that the last component to be energized should be your amplifier. The amplifier should only be turned ON after all other components in the system have been on for at least two minutes. This will insure that there will not be any large pulse created when the amplifier is turned on.

4. Switch the selector source of your preamp to the position correlating to your chosen input connection for the STUDIO.

5. You may now start playing your digital source, DAT, CD or satellite.

6. Slowly turn the volume control up to the lowest level you can hear. Check to see that both channels are working correctly before advancing the volume.

NOTE: While your STUDIO will perform beautifully from the moment you turn it on, it requires a minimum warm up period of 8 hours before it will reach its full sonic potential. Discrete components are utilized in the analog output stage and the warm-up period allows them to reach thermal equilibrium.

Your installation is now complete. Should you have any further questions which are not covered in the remainder of this reference, contact your authorized Krell dealer. We wish you many hours of listening fulfillment.

STUDIO FEATURES

DIGITAL TAPE LOOP

The Tape outputs are used as a direct digital output for a digital recording system. The digital source you want to record is selected by the Input switch. To listen to the digital source select Source on the Source/Monitor switch. To listen to the Tape output during or after the recording, select Monitor on the Source/Monitor switch.

NOTE: The Tape input can also be used as an additional source input, without use of the digital record output.

CAUTION: The Tape output is a digital signal and can not be used as an analog output to drive front end components such as a preamplifier.

PHASE SWITCH

The Phase Switch can reverse output phase. In some studio recordings the master tape was recorded out of phase, creating unusually poor sounding recordings. The STUDIO can reverse the normal 0 degree output phase 180 degrees to correct for this anomaly. Utilizing the Phase Switch can, in some instances, restore life to a previously dull sounding recording.

EMPHASIS LED

You will notice that some discs, or tracks within a disc, activate the Emphasis LED. This signifies that the recorded material had emphasis filtration used during the recording process. Emphasis is a recording industry equalization network, similar to phono RIAA equalization, intended for noise reduction.

G. QUESTIONS AND ANSWERS

Q. My CD player has both fibre optic and coaxial outputs. Which one should I use?

A. Given a choice, we prefer the AT&T optical link due to its ability to completely isolate the grounds between the digital source component and the Processor. This minimizes the possibility of ground loops in the digital components. The AT&T format also has the added benefit of substantially higher bandwidth than coax or the standard fibre optic interface. If the source does not have an AT&T, use the Toslink standard fibre optic interface.

Q. Will I damage my STUDIO if I leave the power "ON" all the time?

A. No. The Class"A" discrete analog circuits perform more consistently once they reach thermal equilibrium. This processor has been designed to be left on at all times. The STUDIO draws less than 25 watts out of the AC mains socket.

NOTE: For the protection of your processor we recommend disconnecting the AC cord from the wall outlet before any electrical storms or if you plan on being away from home for prolonged periods of time.

Q. Do I have to switch the Sampling Frequency when I go between my CD and DAT?

A. No. Your STUDIO automatically senses the input frequency and does all necessary switching.

Q. I am not getting any sound through the processor. What could be wrong?

A. Most likely there has been a simple mistake in installation. Check all connections IN and OUT from the processor. Check all power connections. Have you selected the correct source on your preamp? Check the front panel LED's for power supply stability. If you still have no sound, turn off the power and contact your dealer.

Q. I have some very fine audiophile interconnect cable which has superior sonic characteristics. Can I use this for my coaxial digital input?

A. You may experiment with any high quality cable. Do note most audio interconnect cable is not designed to carry the ultra high frequency information of the digital bit stream.

NOTE: For the STUDIO, we recommend non-capacitive coaxial cable which has a bandwidth in excess of 10MHZ and excellent shielding properties.

Q. While listening to my STUDIO I experience occasional periods of silence through my speakers. Is my processor malfunctioning?

A. Drop outs are caused by two primary reasons. First, drop outs can be caused by data corruption. Corruption in the data may be due to a poor input connection, damaged or dirty source material, or interconnects which do not have a wide enough bandwidth. The second item that causes the processor to reset is the presence of a transient spike on the incoming AC power line. The processor is resetting all of its digital processing circuits so that it can be assured that all are properly synchronized. Try changing your source material and check your connections. If these are not the cause, speak with your dealer about obtaining different cabling. If you are using fiber optics, and source material and connections are not the problem, speak with your authorized dealer.

Q. Since I installed the processor in my system I have a low level hum that increases as I turn up the volume. There was no hum in my system until I added the processor. Is the processor malfunctioning?

A. The fact that there was no hum in your system until you added the processor indicates that you have a ground-loop problem. Often changing the interconnect to a fibre optic cable will eliminate this problem. The way the digital processor and digital source are connected to the AC mains often can be the cause of grounding problems. Lifting the ground on a specific component by means of a three prong to two prong AC adaptor(cheater plug) will often solve the problem. Check for loose interconnect cables and or bad electrical connections. Consult your dealer or Krell for individual system suggestions if this hum persists.

H. FRONT AND REAR PANEL DESCRIPTIONS

1. FRONT PANEL

a. Input Selection:

Coax 1	Coaxial input
Coax 2	Coaxial input
Optics	Standard fibre optic input
XLR/ST	Balanced AES/EBU digital input or AT&T fibre optic input

b. Source and Monitor selection:

Source	Plays the selected input
Monitor	Plays the source connected to the Digital Tape Input, LED illuminates

c. Analog Balanced Output Phase selection:

0 degree	In phase
180 degree	Out of phase,LED illuminates

2. REAR PANEL

a. Digital Inputs:

Coaxial Input 1	To Coax 1 Input
Coaxial Input 2	To Coax 2 Input
Fibre Optic Input	To Optics Input
AT&T Fibre Optic Input	To ST Input
AES/EBU XLR Input	To XLR Input
Digital Tape Input	To Monitor Input

b. Digital Tape output: Output of selected Input

Two Coaxial Outputs
Standard Fibre Optic Output

c. Processor Analog Outputs:

Single-ended RCA outputs	Input or Monitor
Balanced XLR outputs	

d. Balanced XLR output pin configuration

pin 1	Ground (shield)
pin 2	0 degrees (non-inverting)
pin 3	180 degrees (inverting)

I. SPECIFICATIONS

FREQUENCY RESPONSE

20 Hz-20 KHz +/- .1 dB

DIGITAL-TO-ANALOG CONVERTER

Dual Push-Pull 20 bit

ANALOG OUTPUT VOLTAGE

2.1 volts R.M.S.

DIMENSIONS

19"   WIDE
14.5" DEEP
2.75" TALL with fcct

SHIPPING WEIGHT

20 pounds

SPECIFICATIONS

J. WARRANTY AND SERVICE INFORMATION

There are no user-serviceable parts inside the STUDIO. The STUDIO has a limited warranty of five years parts and labor on electronic parts including return freight. The warranty period begins on the date of purchase and is activated with the return of the enclosed Warranty Card and a copy of the Sales receipt. Please return the completed warranty card immediately after successful installation and operation are completed.

The warranty for Krell products is valid only in the country to which they were originally shipped and at the factory. If you think there are problems with your unit, please contact your dealer, distributor or the factory immediately.

Please do not return any unit to KRELL for repair without first calling to discuss the problem and to obtain a Return Authorization number. Freight to the factory or distributor is your responsibility. Return freight to you will be paid by the factory or distributor.

Any unauthorized updates or modifications performed to the unit will void the warranty.

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