

## Instructions for Use



## Owner's Reference

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**FBI**  
**Fully Balanced Integrated Amplifier**  
**Instructions for Use**  
v 06.0

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**INFORMATION**

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This product complies with the EMC directive (89/336/EEC) and the low-voltage directive (73/23/EEC).

**IMPORTANT SAFETY INSTRUCTIONS**

1. *Read Instructions.*
2. *Keep these Instructions.*
3. *Heed all Warnings.*
4. *Follow all Instructions.*
5. *Do not use this apparatus near water.*
6. *Clean only with dry cloth.*
7. *Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.*
8. *Unplug this apparatus during lightning storms or when unused for long periods of time.*
9. *Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as a power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.*
10. *The FBI must be placed on a firm, level surface where it is not exposed to dripping or splashing.*
11. *The ventilation grids on the top and bottom of the FBI must be unobstructed at all times during operation. Do not place flammable material above or beneath the preamplifier.*
12. *Before making connections to the FBI, ensure that the power is off and other components are in mute or stand-by mode. Make sure all cable terminations are of the highest quality, free from frayed ends, short circuits, or cold solder joints.*
13. **THERE ARE NO USER SERVICEABLE PARTS INSIDE A FULLY BALANCED INTEGRATED AMPLIFIER.**

Please contact Krell if you have questions not addressed in this guide.



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## Introduction

Thank you for your purchase of the Krell FBI Remote Control Integrated Amplifier. This fully integrated amplifier and preamplifier has a fully balanced signal path from input to output and employs a wide bandwidth design with low negative feedback for sonic accuracy throughout the frequency spectrum. All circuits, including the amplifier output stage, operate in pure Class A mode.

The Fully Balanced Integrated Amplifier is a large-format integrated, and as such offers all the power and control afforded by big Krell amplifiers in a convenient, integrated package that is simple to operate. The remote control accesses all functions, while a 12 V trigger connection allows the Fully Balanced Integrated Amplifier to interface easily with other components. The Theater Throughput feature provides easy integration into a home theater system.

This owner's reference manual contains important information on the placement, installation, and operation of the Fully Balanced Integrated Amplifier. Please read this information carefully. A thorough understanding of these details will help ensure satisfactory operation and long life for your Fully Balanced Integrated Amplifier and related system components.

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## Revolutionary Krell CAST Technology

Current Audio Signal Transmission, termed CAST, is a revolutionary method of connecting analog audio components for unparalleled sonic performance. Innovative engineering combines the new Krell CAST circuitry with existing Krell Current Mode technology to create entire CAST systems that reproduce music with incredible range, tonality, and precision.

### **The Voltage Signal Transmission and the Traditional Audio System**

Traditionally, signal is transmitted in the voltage domain between two components. In an audio system, each component is a discrete entity with unique characteristics that act upon the musical signal independently. Each component is unaware of the other components in the system. The cables that connect the components also have their own electrical characteristics, which affect the sonic presentation of the entire system. CAST transmission unifies individual components and interconnects into an electrically-linked whole. The original signal remains unaltered from source to speaker.

### **CAST Basics**

Here is how a CAST audio system works. Internally, each CAST source transfers, or amplifies, current using Krell Current Mode circuitry. This current signal is then output using CAST circuitry. When the signal is received by a CAST input, Krell Current Mode circuitry again takes over until the signal reaches the loudspeaker. By maintaining the musical signal in the current domain from beginning to end, an entire CAST system behaves as if it is one component. With CAST, circuit board properties and signal transmission aberrations between components are eliminated. Cable impedances and their effects on the transmitted signal are non-existent.

### **How CAST and Krell Current Mode Interact**

While CAST is a new method of transferring the musical signal between components, its origin stems from Krell Current Mode, the technology developed to transfer the musical signal within a component. CAST combined with Krell Current Mode takes circuitry signal transmission to the next evolutionary level. In essence, Krell Current Mode

maintains the integrity of the signal within the component and CAST preserves the transmitted signal between components. Together, CAST and Krell Current Mode technologies unify separate Krell components into a *single global circuit*. Krell Current Mode technology enjoys bandwidth increases up to an order of magnitude greater than their voltage based counterparts. This dramatic increase in circuit bandwidth delivers near perfection in the audible band that typically suffers from phase distortions in voltage circuits.

### **CAST Cable Construction**

A CAST system uses cables manufactured by Krell and other manufacturers specially licensed by Krell. Thin and flexible CAST cables are constructed with the same build quality as other Krell components and are aesthetically matched to the components that Krell manufactures. An all-metal body and locking connectors with gold contacts are part of the standard no-compromise specification developed for every CAST cable made.

### **Evolution CAST**

By employing revolutionary current mirror circuitry, the Evolution 222 components elevate the CAST technology to another level. This advanced use of the technology increases the linearity, transient speed, and bandwidth of the Evolution components while reducing the distortion by an order of magnitude.

### **The Best Musical Performance**

When you operate a CAST system, you will hear significant improvements in every performance area: speed, precision, dynamic range, depth and width of the sound stage, transient impact, tonal balance, harmonic distortion, and more. The goal for CAST is the same company goal used for all Krell products. Krell strives for the delivery of the best performance of a musical event for you, using the full expression of technology to date.

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## Definition of Terms

Following are the definitions of key terms used in your owner's reference manual.

### CONFIGURATIONS

#### **Theater Throughput**

Theater Throughput is a Krell configuration option that allows the signal from a surround preamp/processor to pass through a Krell preamplifier or integrated amplifier input at unity gain and suspends operation of the preamp volume control. When Theater Throughput is employed, control of the volume is accomplished through the home theater processor.

### INPUT AND OUTPUT CONNECTIONS

#### **Balanced**

A symmetrical input or output circuit that has equal impedance from both input terminals to a common ground reference point. The industry standard for professional and sound recording installations, balanced connections have 6 dB more gain than single-ended connections and allow the use of long interconnect cables. Balanced connections are completely immune to induced noise from the system or the environment.

#### **CAST and Evolution CAST**

Krell Current Audio Signal Transmission, or CAST, is a proprietary Krell circuit technology for connecting analog components, transmitting the audio waveform between components in the current domain rather than in the voltage domain. The speed and bandwidth provided by Krell CAST and its circuitry update, Evolution CAST, yield accurate, realistic music reproduction, enabling connected components to perform as if they are all part of a single circuit.

#### **Single-ended**

A two-wire input or output circuit. Use care when using single-ended connections as the ground connection is made last and broken first. Turn the system off prior to making or breaking single-ended connections. Single-ended connections are not recommended for connections requiring long cable runs.



## OPERATION

### **Off**

The component is off when the AC power cord is unplugged from the wall receptacle.

### **Stand-by Mode**

A low power consumption status that keeps the audio circuits at idle. When you plug the AC power cord into the wall receptacle, and turn on the rear panel breaker switch, the red stand-by LED illuminates. The component is now ready to be switched to the operational mode. Krell recommends leaving the component in the stand-by mode when it is not playing music.

### **Operational Mode**

When the component is in the stand-by mode, and you press the power button on the front panel or the power key on the remote control, the blue power LED illuminates. The component is in the operational mode and is ready to play music.

## TECHNOLOGY

### **Krell Current Mode**

A proprietary Krell circuit topology in which the audio gain stages of a component operate in the current rather than voltage domain. This unique technology provides the component with exceptional speed and a wide bandwidth.

See also *Revolutionary Krell CAST Technology*, on pages 6-7.

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## Unpacking

Two people are needed to remove the Fully Balanced Integrated amplifier from its shipping box safely and easily.

1. Open the shipping carton and remove the top layer of foam. The carton contains :
  - 1 Fully Balanced Integrated Amplifier
  - 1 AC power cord
  - 1 12 VDC (12 V trigger) cable
  - 1 T-10 Torx wrench
  - 1 FBI remote control
  - 2 AAA 1.5 V batteries
  - 1 Packet containing the Quick Setup Guide and the warranty registration card
2. Orient the shipping box so that one person stands at the front of the amplifier and one person stands at the back of the amplifier. Both people need to grab a pair of the cardboard handle cutouts (one pair located at the front of the amplifier and one pair located at the back of the amplifier) and simultaneously lift the amplifier straight up, out of the carton. Bend and lift with your knees, not your back.
3. Place the amplifier in a safe location and remove the protective plastic wrapping.

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### Notes

*If any of the listed items are not included in the shipping box, please contact your authorized Krell dealer or distributor.*

*Save all packing materials. If you need to ship your FBI in the future, repack the unit in its original packaging to prevent shipping damage. See **Return Authorization Procedure**, on page 29, for more information.*

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## Placement

Before you install the FBI into your system, please review the following guidelines to choose the proper location for the FBI. This will facilitate a clean, trouble-free installation.

The FBI does not require any type of special rack or cabinet for installation. For the dimensions of the FBI, see **Specifications**, on the back cover.

Place the FBI on a firm, level surface, away from excessive heat, humidity, or moisture. The FBI requires at least two inches (5 cm) of clearance on each side and at least eight inches (20 cm) of clearance above and below the component to provide adequate ventilation. The ventilation grids on the FBI must be unobstructed.

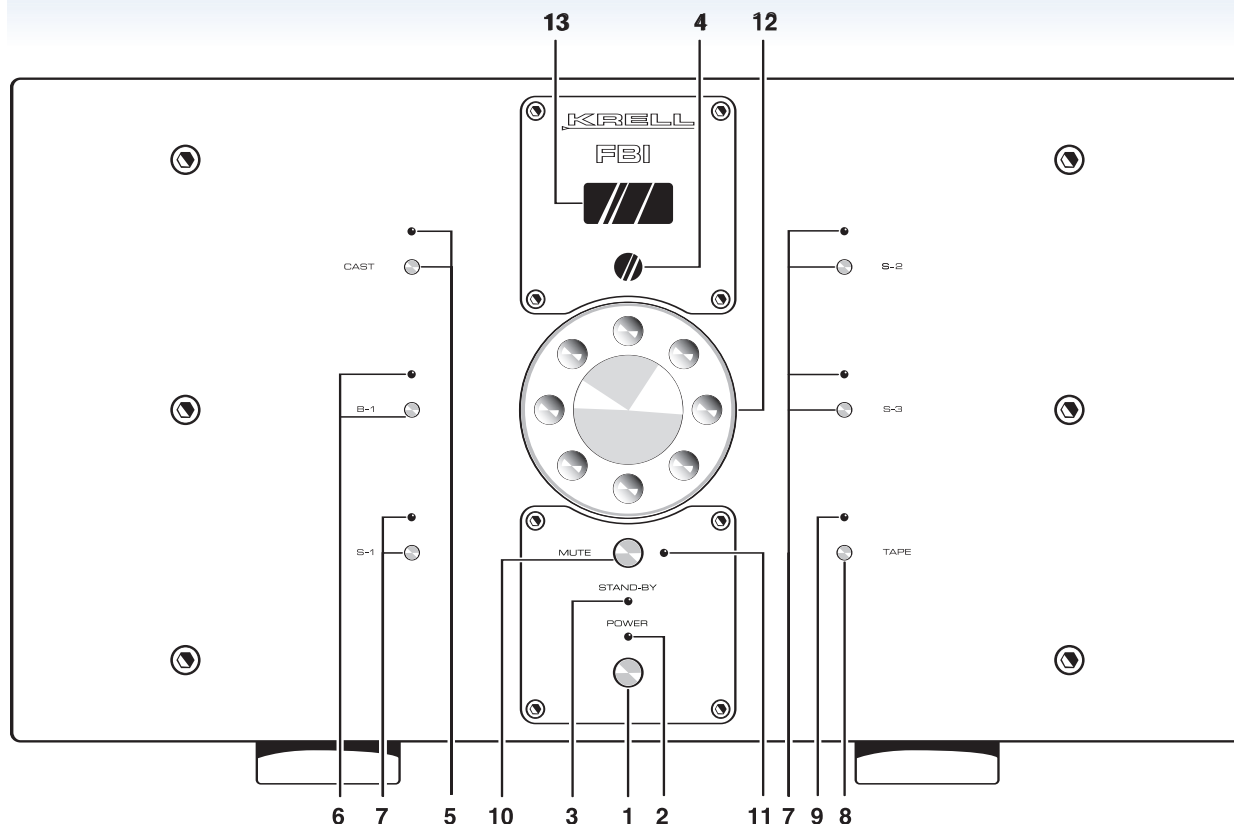
If the amplifier is placed in a closed cabinet, more than eight inches (20 cm) of clearance may need to be provided above and below the component, or small fans may be needed to increase ventilation. The air space between the chassis and shelf must be unobstructed.

The Fully Balanced Integrated amplifier drives the lowest impedances with ease. When impedance is added due to long speaker cable lengths, amplifier power is wasted in the cable. Long speaker cables reduce the maximum power that is delivered in the speakers.

The Fully Balanced Integrated amplifier needs to be operated from a dedicated AC power line rated at a minimum of 20 amps. Use only the power cord provided with the Fully Balanced Integrated amplifier to make this connection. Operation with a power cord other than the one supplied by Krell can induce noise, limit current, and otherwise impair the amplifier's ability to perform optimally. The use of the Fully Balanced Integrated amplifier with devices designed to alter or stabilize the AC power also may impair the amplifier's ability to perform optimally.

## AC Power Guidelines

**Figure 1 The FBI Front Panel**



**Power**

- 1 Power Button or Key
- 2 Power Indicator
- 3 Stand-by LED
- 4 Infrared Sensor

**Analog Devices**

- 5 C-1 Button, Key and LED
- 6 B-1 Button, Key and LED
- 7 S-1, S-2, S-3, and B-1, Buttons, Keys and LEDs
- 8 Tape Button or Key
- 9 Tape LED

**Mode Indicators**

- 10 Mute Button or Key
- 11 Mute LED

**Volume**

- 12 Level Knob or Keys

**Display**

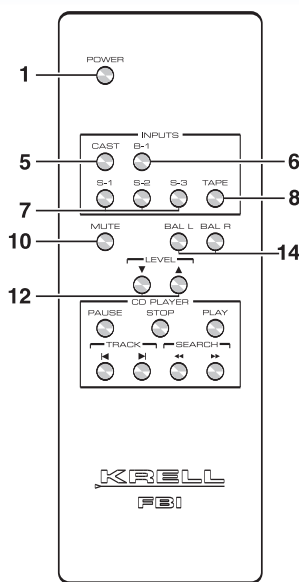
- 13 Front Panel Display

**Volume Adjustment**

**Functions (remote only)**

- 14 Bal (Balance) keys

**Figure 2 The FBI Remote Control**



**Note**

The numbered remote control keys function with the FBI. The CD player keys on this remote control activate some Krell source components.

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## Front Panel/Remote Control Description

See Figures 1 and 2 on page 12

Power, analog input selections, and volume control accessed via the FBI front panel buttons or remote control keys are described below. The front panel display shows volume and balance levels, and Theater Throughput status. Most front panel functions also are activated via the keys on the remote. The volume adjustment function, a special operational feature of the remote control only, is described on page 16:

### POWER

#### **1 Power Button or Key**

Use this button or key to switch the FBI between the stand-by and the operational modes.

#### **2 Power Indicator**

The blue power indicator illuminates when the FBI is in the operational mode. The blue power indicator also flashes when any remote control key is pressed.

#### **3 Stand-by LED**

The amplifier is in the stand-by mode and ready to be switched to the operational mode, when the FBI is plugged into a standard AC wall receptacle, the back panel power breaker switch (24) is in the up position, and the red stand-by LED illuminates.

#### **4 Infrared Sensor**

The infrared sensor receives commands from the FBI remote control. For proper remote control operation, make sure that nothing is obstructing the infrared sensor.

### ANALOG SOURCE COMPONENTS

#### **5 C-1 Button, Key, and LED**

Selects a CAST source component (C-1) via a CAST connector. When the button or key is selected, the red LED illuminates.

#### **6 B-1 Button, Key, and LED**

Selects a balanced analog source component via an XLR connector. When the button or key is selected, the red LED illuminates.

#### **7 S-1, S-2, and S-3 Buttons, Keys, and LEDs**

Selects a single-ended analog source component via single-ended RCA connectors. When the button or key is selected, the red LED illuminates.

**8 Tape Button or Key**

Use this button or key to playback pre-recorded tapes and compare the output signal of an analog tape recorder to an audio source. See *Tape Input and Output*, on page 22.

**9 Tape LED**

The red tape monitor LED illuminates when the tape monitor is activated. The LED does not illuminate when an audio source is activated.

**MODE INDICATORS**

**10 Mute Button or Key**

Use this button or key to interrupt the signal of the input you have selected. To unmute, press the mute button or key again.

**11 Mute LED**

The red mute LED illuminates when you press the mute button or key.

**VOLUME ADJUSTMENT  
FUNCTIONS**

**12 Level Knob / Level Keys**

The level knob on the front panel or the level keys on the remote control adjust the amplifier output level. The output level is indicated numerically on the front panel display (13), with a range from 0-151.

**13 Front Panel Display**

The front panel display shows volume and balance levels and Theater Throughput status.

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## Remote Control Only

See Figure 2 on page 12

### Battery Installation and Removal

The remote control uses 2 AAA-size 1.5 Volt batteries. Batteries are included with the shipment. To install the batteries:

1. Remove the remote control backplate, using the supplied T-10 Torx wrench.
2. Install the batteries, following the battery position diagram on the plastic battery receptacle.
3. Replace and secure the backplate.

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#### Notes

*Replace batteries when remote control function becomes intermittent.*

*Remove batteries if the remote control is not used for a long period of time. Battery leakage can damage the remote control.*

## Remote Control Only Functions

The FBI remote control accesses complete power amplifier and preamplifier functions. The volume adjustment function is unique to the FBI remote control.

### VOLUME ADJUSTMENT FUNCTION

#### 14 Bal (Balance) Keys

Use these keys to shift the balance to the left or the right channel. Balance level is indicated in the front panel display (13). To display balance, push any key on the remote.

The front panel display indicates:

-C-

when the system is balanced. If the system is not balanced, the front panel display indicates that the balance is right or left of center and by how much, on a scale of 1 (least out of balance) to 5 (most out of balance).

Example: A display of:

- - 3

means that the balance is moderately right of center. A display of:

5 - -

means the balance is severely left of center.

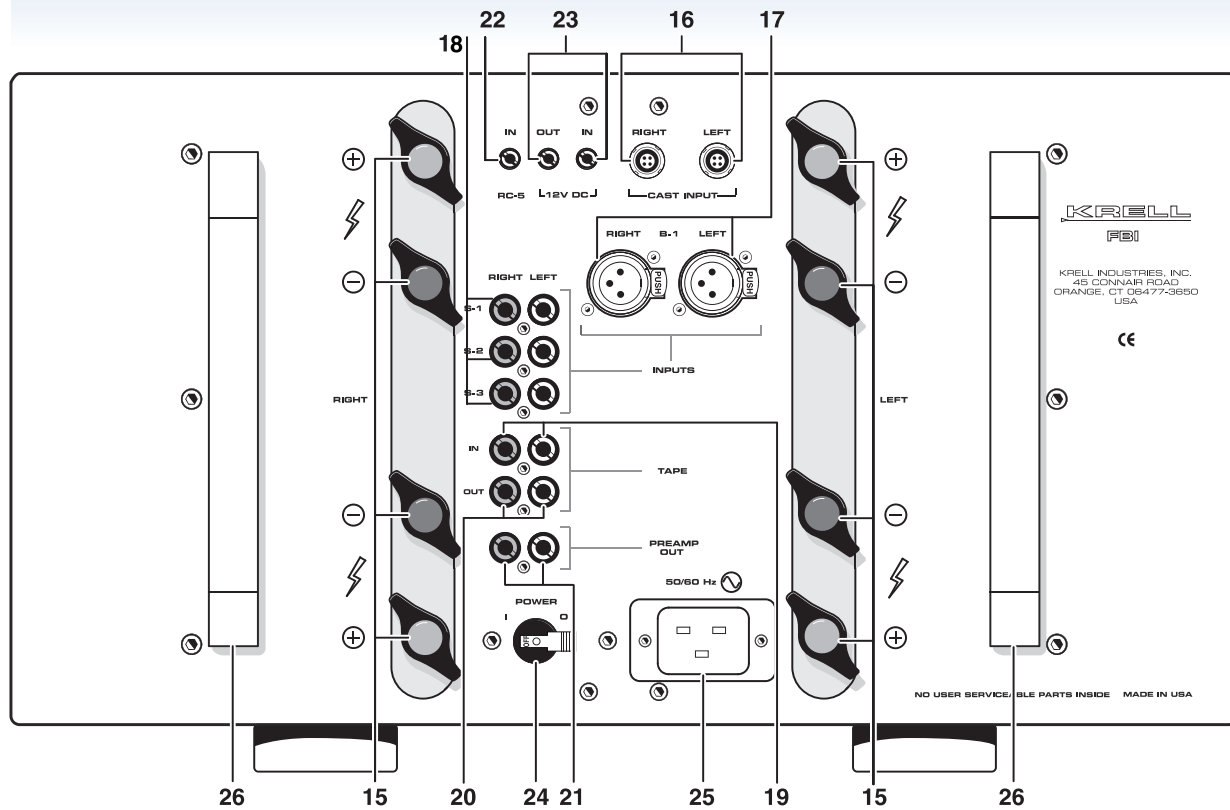
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#### Note

*The numbered remote control keys function with the FBI. The CD player keys on this remote control activate some Krell source components.*



**Figure 3 The FBI Back Panel**



**Amplifier Channel Outputs**

- 15 Left and Right Loudspeaker Outputs

**Analog Inputs**

- 16 Left and Right CAST Inputs
- 17 Left and Right Balanced Analog Inputs
- 18 Left and Right Single-ended Analog Inputs
- 19 Left and Right Tape Inputs

**Analog Outputs**

- 20 Left and Right Tape Outputs
- 21 Left and Right Preamplifier Outputs

**Remote Back Panel Connections**

- 22 RC-5 In
- 23 12 VDC In/Out (12 V Trigger)

**Power**

- 24 Back Panel Power Breaker Switch
- 25 IEC Connector

**Convenient Lifting Device**

- 26 Handles

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## Back Panel Description

See Figure 3 on page 17

The FBI back panel provides connections for all inputs and outputs, power on/off, and additional remote connections.

### AMPLIFIER CHANNEL OUTPUTS

#### 15 Left and Right Loudspeaker Outputs

Two pairs of loudspeaker binding posts are available for each channel of amplification, facilitating a power-bi-wire connection to the loudspeaker. Each pair of binding posts is connected internally via copper buss bars. When only one set of binding posts is used, the connection can be made from either pair of binding posts. See the loudspeaker and/or cable manufacturer's instruction manual for more information about power-bi-wire connections.

The loudspeaker binding posts accept spade lugs only. Bare wire, banana lugs, or pins will not work. Use the red terminal for the positive connection and the blue terminal for the negative connection.

### ANALOG INPUTS

#### 16 Krell CAST Inputs

The FBI is equipped with one pair of Krell CAST inputs via 4-pin bayonet connectors. Krell CAST inputs allow the Fully Balanced Integrated amplifier to be connected to any Krell CAST-equipped component.

#### 17 Left and Right Balanced Analog Inputs

The FBI is equipped with one pair of balanced (B-1) inputs via XLR connectors.

#### 18 Left and Right Single-Ended Analog Inputs

The FBI is equipped with three pairs of single-ended (S-1, S-2, or S-3) inputs via RCA connectors.

#### 19 Left and Right Tape Inputs

The FBI is equipped with a pair of single-ended tape inputs via RCA connectors.

### ANALOG OUTPUTS

#### 20 Left and Right Tape Outputs

The FBI is equipped with a pair of single-ended tape outputs via RCA connectors.

#### 21 Left and Right Preamp Outputs

The FBI is equipped with a pair of single-ended pre-amplifier outputs.

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## REMOTE CONNECTIONS

### 22 RC-5 In

The FBI is equipped with an RC-5 input that makes custom installation easy and secure by accepting baseband RC-5 input commands from hardwired remote controllers.

### 23 12 VDC In/Out (12 V Trigger)

The FBI has one output that sends, and one input that receives 12 VDC power on/off (12 V trigger) signals to and from other Krell components, and other devices that incorporate a 12 V trigger. This allows you to turn other components on or off, or to and from stand-by. When an amplifier is switched to operational mode and is connected to other components through the 12 V trigger, it sends a signal that will switch other components, allowing whole systems or parts of systems to be easily coordinated. Mono 3.5 mm connectors are used in the following configuration: Tip = +12 V, Sleeve = GND.

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#### Notes

*When the FBI is in the operational mode, the 12 V trigger provides 12 Volts of DC output. When the FBI is in the stand-by mode or off, the DC output is 0 Volts. A maximum of 30 mA is available from the 12 V trigger output.*

*Consult the owner's reference of the components used in a custom installation to take full advantage of the remote capabilities of the FBI.*

## POWER

### 24 Back Panel Power Breaker Switch

Place the back panel power breaker switch in the up position to put the FBI in stand-by mode. Krell recommends that the amplifier remain on, in stand-by mode, when not in use.

### 25 IEC Connector

The connector is for use with the provided AC power cord.

## CONVENIENT LIFTING DEVICE

### 26 Handles

The FBI is equipped with two handles to help to move the integrated amplifier easily and safely.

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## Connecting the FBI to Your System

### USING BALANCED CONNECTIONS

Krell recommends using balanced interconnect cables. Balanced interconnect cables not only can minimize sonic loss but are also immune to induced noise, especially with installations using long cables. Balanced connections have 6 dB more gain than single-ended connections. When level matching is critical, keep this gain value in mind.

### Connection Steps

Follow these steps to connect the FBI to your system.

1. Make sure all power sources and components are off before connecting inputs and outputs.
2. Neatly organize the wiring between the FBI and all system components. Separate AC wires from audio cables to prevent hum or other unwanted noises from being introduced into the system.
3. Connect the left and right outputs of your source components to the appropriate analog inputs (15, 16, 17) on the FBI. The FBI is equipped with one CAST input (C-1) (16), one balanced input (B-1) (17), three single-ended inputs (S-1, S-2, or S-3) (18), and one tape input (19). The C-1, B-1, S-1, S-2, and S-3 inputs can be configured for Theater Throughput. See **Optional Configurations**, on page 23 for information on configuring an input for Theater Throughput.

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### Pin assignments for the XLR connectors

- Pin 1 Shield (ground)
- Pin 2 Non-inverting (hot) (0°)
- Pin 3 Inverting (cold) (180°)

4. Connect the loudspeaker cables to the loudspeaker binding posts (15) of the FBI, located on the back panel. Loudspeaker binding posts accept spade lugs only.
6. Plug the AC power cord into the IEC connector (25) on the back panel of the FBI. Plug the other end of the power cord into the AC wall receptacle.

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## Operating Your FBI

This section provides information about operating the Fully Balanced Integrated amplifier. The FBI provides basic input selection and volume control operation from the front panel. The remote control includes additional preamplifier and volume functions as well as compact disc transport and amplifier controls. See **Remote Control Functions**, on page 16, for more information.

### Amplifier Operation

The FBI is easy to operate. However, great care should be exercised when operating a system that includes the FBI, because of the amplifier's power output. Switching between active sources without muting the preamplifier output, or bumping/misusing a device, can generate large transients at low frequencies. The FBI may generate enough power with these transients to damage most loudspeakers. To avoid damage, be sure to switch all sources with the preamplifier level either muted or fully attenuated. Do not change inputs to the amplifier while it is on.

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#### Note

*Krell amplifiers have large reserves of clean power and can safely drive loudspeakers to higher sound pressure levels than other amplifiers. However, use care when setting high playback levels and lower the volume level at any sign of loudspeaker distress.*

### ON/OFF AND STAND-BY OPERATION

When powering up any system, always turn amplifiers on last. When powering down, always turn amplifiers off first.

1. After the FBI is connected to AC power, place the back panel power breaker switch in the up position. The red stand-by LED (3) on the front panel is illuminated.
2. When the amplifier is in stand-by mode, turn the FBI on by pressing the power button on the front panel or the power key on the remote control (1). There is a short wait period, while the amplifier power stages are started. The front panel display counts down the wait period and shows 000 (zero volume). The blue power LED (2) illuminates, and the red stand-by LED (3) turns off. The FBI is now in the operational mode.
3. With the amplifier in the mute position, or the volume control fully attenuated, select a source from the front panel or the remote control (5, 6, or 7).
4. Start playing the source.

**ON/OFF AND STAND-BY  
OPERATION, continued**

5. Set the volume to a comfortable listening level using the level knob on the front panel or the level keys on the remote control (12).
6. To turn the FBI off, press the power button on the front panel or the power key on the remote control (1). The red stand-by LED (3) illuminates, and the FBI is in the stand-by mode. It is now safe to turn off the rest of the system.

## Tape Input and Output

The FBI has a discrete tape input and output. The tape output is used to send an input signal from C-1, B-1, S-1, S-2, or S-3 to a recording device or processor. You can use the tape feature in three ways:

1. Use the tape button on the front panel or the tape key on the remote (6) to playback pre-recorded tapes.
2. Use the tape input to compare the output signal of a three-head analog tape recorder to the output signal of an audio source, when making a recording. To activate this function, select an audio source for recording using the C-1, B-1, S-1, S-2, or S-3 analog input buttons or keys (5). Press the tape button on the front panel or tape key on the remote on the to switch between the tape recorder output (red tape monitor LED [7] illuminated) and the input source (red tape monitor LED not illuminated).
3. Use the tape output to create a processor loop, when the FBI is connected to a graphic equalizer or other ancillary equipment. To activate this function, connect the equipment to the FBI tape outputs (18) as described in the equipment manufacturer's manual. Press the tape button on the front panel or tape key on the remote to switch between the processor output (red tape monitor LED [7] illuminated) and the input source (red tape monitor LED not illuminated).

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**Note**

*When changing sources, lower the volume to off or mute the output. This ensures that the next source played does not damage your system with a high output transient.*

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## Optional Configurations

### Configuring the FBI for Theater Throughput

To simplify the integration of an audio/video surround sound processor into your system, set any input on the FBI (C-1, B-1, S-1, S-2, or S-3) to operate as a unity gain stage. Krell calls this configuration Theater Throughput.

When you configure a FBI input for Theater Throughput, the FBI volume and balance controls are transferred to the audio/video surround sound processor, for integrated volume and balance management as well as ease of operation. As long as the FBI input is configured for Theater Throughput and connected to the audio/video surround sound processor's input configured for Theater Throughput, all FBI volume and balance adjustments are made through the surround sound processor. When you disengage the FBI input from Theater Throughput, the volume and balance controls revert to the FBI.

#### HOW TO ACTIVATE AN INPUT FOR THEATER THROUGHPUT

1. Turn on the FBI power.
2. Press and release the button on the front panel or the key on the remote for the device you wish to configure for Theater Throughput. The LED illuminates.
3. Press the button or key again and hold it for 4 seconds. The front panel display (13) shows "thr."

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#### IMPORTANT

*Make sure the level on the source component is set to zero when configuring the FBI input set for Theater Throughput. Source components without level controls should not be connected to an input configured for Theater Throughput. Doing so can result in excessive and possibly damaging volume levels when the source is played. Always turn off the source component before you configure any input on the FBI for Theater Throughput.*

#### HOW TO DISENGAGE AN INPUT FOR THEATER THROUGHPUT

When you disengage the Fully Balanced Integrated amplifier input from Theater Throughput, the volume and balance controls revert to the Fully Balanced Integrated amplifier.

1. Turn on the FBI power.
2. Press and release the button on the front panel or the key on the remote for the device you wish to disengage from Theater Throughput. The LED illuminates.
3. Press the button or key again and hold it for 4 seconds. The phrase "thr" disappears from the front panel display (13), indicating that Theater Throughput is disengaged.

## **Preamplifier Outputs**

The FBI is equipped with a pair of single-ended preamplifier outputs (19). These outputs enable the FBI to be used as a preamplifier when it is connected to a separate amplifier.

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### **Note**

*The amplifier channel outputs are always active, even when the FBI is being used only as a preamplifier.*



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## How to Troubleshoot System Noise

AC grounding becomes critical when connecting high performance audio components. When you mix and match audio components, each with its own ground potential, a low frequency hum may occur in one or both loudspeakers. This sometimes occurs when introducing a new component into a system.

If a low frequency hum emanates from the loudspeakers when you place the FBI amplifier into the system, follow these simple troubleshooting steps:

1. Check all cable terminations, making sure they have solid solder joints and are of sound construction.
2. With the amplifier off, remove the interconnect cables, then turn the amplifier on. If the hum disappears, turn the amplifier off and reinsert one of the interconnect cables. Turn the amplifier back on. If the hum reappears with one or both cables reinserted, there may be a defective cable. Have the interconnect cables checked before proceeding.
3. If the interconnect cables are sound, you may be experiencing a ground loop. Please contact your authorized Krell dealer, distributor, or Krell for suggestions on how to solve this problem.

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## Questions and Answers

- Q.** Should I leave my FBI on at all times?
- A.** Krell recommends leaving the amplifier in the stand-by mode, ready to play music. If you are not going to play music for a long time, you may disconnect the amplifier from AC power supply.
- Q.** When I turn on the amplifier there is a loud hum through the loudspeakers. What should I do?
- A.** When a new component is introduced into a system, a low frequency hum may occur in one or both loudspeakers. Check all input and output connections, making sure they are of sound construction. See ***How to Troubleshoot System Noise***, on page 25. If the interconnects and cables are sound, you may be experiencing a ground loop. This can often be easily eliminated. Please contact your authorized Krell dealer, distributor, or Krell for suggestions on how to solve this problem.
- Q.** When I use the FBI's Theater Throughput capability with my surround sound processor, where should I set the volume on the FBI?
- A.** You do not need to set the volume on the FBI because the amplifier's volume and balance controls are not active in the Theater Throughput mode. When using the FBI's Theater Throughput capability, the surround sound processor controls the system volume. See ***Optional Configurations***, on page 23.

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## Warranty

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*To register your product for warranty benefits, please complete and return the Warranty Registration Card enclosed in the shipping box within 15 days of purchase. Thank you.*

Krell products have a limited warranty. Amplifiers, preamplifiers, preamp/processors, and receivers carry a limited warranty of five years for parts and labor on circuitry. Loudspeakers carry a limited warranty of five years for parts and labor. CD and DVD players carry a limited warranty of five years for parts and labor on circuitry, and three years for parts and labor on mechanical parts.

Should the product fail to perform at any time during the warranty, Krell will repair it at no cost to the owner, except as set forth in this warranty.

This warranty does not apply to damage caused by acts of God or nature.

This warranty shall be in lieu of any other warranty, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose. There are no warranties which exceed beyond those described in this document, if the product does not perform as warranted herein, the owner's sole remedy shall be repair. In no event will Krell be liable for incidental or consequential damages arising from purchase, use, or inability to use the product, even if Krell has been advised of the possibility of such damages.

Proof of purchase in the form of a bill of sale or receipted invoice substantiating that the product is within the warranty period must be presented to obtain warranty service. The warranty begins on the date of the original retail purchase, as noted on the bill of sale or receipted invoice from an authorized Krell dealer or distributor. Previously owned equipment, when re-purchased from an authorized Krell dealer or distributor, has the balance of the original warranty, based on the original date of manufacture.

The warranty for a Krell product is valid only in the country to which it was originally shipped, through the authorized Krell distributor for that country, and at the factory. There may be restrictions on or changes to Krell's warranty because of regulations within a specific country. Please check with your distributor for a complete understanding of the warranty in your country.

If the product is serviced by a distributor who did not import the unit, there may be a charge for service, even if the product is within the warranty period.

Freight to the factory is your responsibility. Return freight within the United States (U.S.A.) is included in the warranty. If you have purchased your Krell product outside the U.S.A. and wish to have it serviced at the factory, all freight and associated charges to the factory are your responsibility. Krell will pay return freight to the U.S.A.-based freight forwarder of your choice. Freight and other charges to ship the product from the freight forwarder to you are also your responsibility.

Krell is not responsible for any damage incurred in transit. Krell will file claims for damages as necessary for a product damaged in transit to the factory. You are responsible for filing claims for shipping damages during the return shipment.

Krell does not supply replacement parts and/or products to the owner of the product. Replacement parts and/or products will be furnished only to the distributor performing service on this product on an exchange basis only; any parts and/or products returned to Krell for exchange become the property of Krell.

No expressed or implied warranty is made for any Krell product damaged by accident, abuse, misuse, natural or personal disaster, or unauthorized modification.

***Any unauthorized voltage conversion, disassembly, component replacement, perforation of chassis, updates, or modifications performed to the product will void the warranty.***

The operating voltage of the product is determined by the factory and can only be changed by an authorized Krell distributor or at the factory. The voltage for this product in the U.S.A. cannot be changed until six months from the original purchase date.

In the event that Krell receives a product for warranty service that has been modified in any way without Krell authorization, all warranties on that product will be void. The product will be returned to original factory layout specifications at the owner's expense before it is repaired. All repairs required after the product has been returned to original factory specifications will be charged to the customer, at current parts and labor rates.

All operational features, functions, and specifications and policies are subject to change without notification.

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# Return Authorization Procedure

## HOW TO EXPEDITE SERVICE

If you believe there is a problem with your component, please contact your dealer, distributor, or the Krell factory to discuss the problem *before* you return the component for repair. To expedite service, you may wish to complete and e-mail the Service Request Form in the Service section of our website at:

<http://www.krellonline.com>

### To contact the Krell Service Department:

TEL	203-298-4020 Monday-Friday, 9:00 am to 5:00 pm EST
FAX	203-795-2287
E-MAIL	<a href="mailto:service@krellonline.com">service@krellonline.com</a>
WEBSITE	<a href="http://www.krellonline.com">http://www.krellonline.com</a>

## HOW TO RETURN A PRODUCT

To return a product to Krell, please follow this procedure so that we may serve you better:

1. Obtain a Return Authorization Number (R/A number) and shipping address from the Krell Service Department.
2. Insure and accept all liability for loss or damage to the product during shipment to the Krell factory and ensure all freight (shipping) charges are prepaid.

The product may also be hand delivered if arrangements with the Service Department have been made in advance. Proof of purchase will be required for warranty validation at the time of hand delivery.

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### IMPORTANT

*Use the original packaging to ensure the safe transit of the product to the factory, dealer, or distributor. Krell may, at its discretion, return a product in new packaging and bill the owner for such packaging if the product received by Krell was boxed in nonstandard packaging or if the original packaging was so damaged that it was unusable. If Krell determines that new packaging is required, the owner will be notified before the product is returned.*

## HOW TO PURCHASE ADDITIONAL PACKING

To purchase additional packaging, please contact your authorized Krell dealer, distributor, or the Krell Service Department for assistance.

Krell Industries, Inc.  
45 Connair Road  
Orange, CT 06477-3650 USA

TEL 203-298-4000, FAX 203-891-2028  
E-MAIL krell@krellonline.com  
WEB SITE www.krellonline.com

**FBI**  
**Remote Control**  
**Integrated Amplifier**  
v 06.0

## Specifications

*All operational features, functions, specifications, and policies are subject to change without notification.*

### FREQUENCY RESPONSE

20 Hz–20 kHz

+0.0 -0.05 dB

### SIGNAL-TO-NOISE RATIO

"A" weighted

-108 dB

### TOTAL HARMONIC DISTORTION (THD)

1 kHz <0.04%

20 kHz <0.3%

### GAIN

36.4 dB

### INPUT SENSITIVITY

0.741 V rms

### INPUT IMPEDANCE

210 kOhms

### POWER CONSUMPTION

Stand-by 70 W

Idle 185 W

Max. 1,800 W

### INPUTS

All with Theater Throughput

1 pair CAST via 4-pin bayonet connectors.

1 pair balanced via XLR connectors

3 pair single-ended via RCA connectors

### OUTPUTS

4 loudspeaker via 5-standard binding posts

1 pair single-ended preamp via RCA connectors

### TAPE INPUT AND OUTPUT

1 pair single-ended via RCA connectors

### OUTPUT VOLTAGE

Peak to peak 138 V

### OUTPUT POWER

8 Ohms 300 W

4 Ohms 600 W

12 Ohms....1200 W

### REMOTE CONTROL

1 handheld wireless IR remote

1 12 VDC Out/In (12 V trigger)

1 remove IR sensor input via 1/8" mini stereo connector

1 RC-5 input via a DC power connector

### DIMENSIONS

17.3 in. W x 10.3 in. H x 20.5 in. D

483 mm W x 260 mm H x 521 mm D

### WEIGHT

#### Shipped

124 lb., 56.3 kg

#### Unit only

104 lb., 47.2 kg

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