



**The Leader in Audio Engineering**

Krell  
Audio + Video Standard

100

S-VIDEO  
1 2 3 4  
COMPOSITE  
1 2 3 4  
MASTER CENTER SIDE REAR SUBS BALANCE

ANALOG IN  
S1 S2 S3 S4 S5  
DIGITAL IN  
T1 T2 XLR  
TAPE  
C1 C2  
POLITY  
AOS PRO  
THX  
MUSIC  
MOVIE  
PREAMP  
RECALL

**ImagingScience**  
FOUNDATION, INC.



## Audio+Video Standard

### Surround Preamp/Processor

## Lights.Camera.Krell.

Since 1980, Dan D'Agostino and the Krell Engineering Group have introduced a myriad of audio products that have redefined categories and established higher standards throughout the industry. Krell® has always brought forth serious products that delivered serious performance...and now we have decided to go to the movies.

The Krell Audio+Video Standard represents an all out assault on home theater. Every aspect of this surround preamp/processor is approached from a high performance perspective, one deserving of the *Standard* designation. When a Class A preamplifier, Krell digital processing, and an ISF certified video stage are encapsulated in one unit, the audio and video experience is elevated to a new standard, the Krell Audio+Video Standard.

# Audio+Video Standard

## Surround Preamp/Processor

### Loaded for Bear

Based on legendary Krell preamplifier technology, the Audio+Video Standard includes nine channels of Class A, direct coupled, discrete complementary circuitry; all with balanced outputs. A comprehensive array of audio inputs includes one balanced and five single-ended analog inputs, one tape loop, five digital inputs, and one RF input for Dolby Digital AC-3®. The Audio+Video Standard also has two digital outputs for recording either analog or digital signals onto a CD or DAT recorder. Video is equally extensive with four inputs and three outputs in both the composite and S-video formats.

### Unraveling the Signal

For high performance surround sound processing, the only choice is the digital domain. This necessitates an analog-to-digital converter when an analog source is chosen. The Audio+Video Standard features a highly buffered 20-bit Crystal A/D converter utilizing a 128x sampling rate to perform this critical task. Digital sources bypass this section and proceed directly to the surround processing stage. In the Preamp mode, analog signals bypass the digital processing stage and the Audio+Video Standard operates as a two channel, Class A preamplifier.

For Dolby Pro Logic®, Dolby Digital AC-3®, and dts surround processing, a Motorola DSP-56009 running at 80MHz extricates the four channels of information, determines proper steering locations, and performs crossover filtering in the digital domain. The Motorola DSP-56009 processes this information using 24-bit words and a 56-bit accumulator. This 24-bit data path and 56-bit worktable guarantee an exact unraveling of the Dolby matrix, an astonishing 55dB of adjacent channel separation, and a surgical cutting of bass frequencies for seamless integration of subwoofers.

At present, Dolby Digital AC-3® encoded information is only available on laser discs and DVDs. This signal must be demodulated before any Dolby Digital AC-3® processing is initiated. The Audio+Video standard performs this critical task internally, eliminating unnecessary connections and outside interference that an external demodulation unit invites. The demodulated S/PDIF signal is then fed to a Motorola DSP-56009 microprocessor. This 24-bit 80MHz racehorse extracts more Dolby Digital AC-3® information than the pedestrian 20-bit 66MHz chip sets other manufacturers utilize for Dolby Digital AC-3® processing. The additional bits and higher operating speed provide an audible 20dB increase in signal-to-noise ratio and an order of magnitude reduction in total harmonic distortion. The 5.1 signal is now ready to be directed to the appropriate speaker. This direction is based on individual system configuration and the advanced Krell Bass

Redirection™ algorithm. The Audio+Video Standard features two independent subwoofer outputs that may be configured in mono, left and right stereo, or as a front and rear pairing. The Krell Bass Redirection™ circuitry determines the ideal frequency content that will be delivered to each speaker.

Each channel of information is treated to Krell oversampling software. This advanced software calculates additional data points to guarantee the smoothest reconstructed wave possible. This job is performed by an additional two Motorola DSP-56009 mini-computers, each crunching through 40 million instructions per second. This extraordinary volume of data is then sent to the individual channel DACs. For the critical left, center, and right channels, 20-bit Burr Brown PCM-63P DACs are employed, while 18-bit Burr Brown DACs are used for the side, rear, and subwoofer channels.

### You Won't Believe Your Eyes

The first product to come from Krell® that incorporates a video signal, the Audio+Video Standard presented a new design challenge. Like an audio preamplifier, the video preamplifier takes the video signal, accurately amplifies it, and sends it to a powerful video output stage. Video monitors display vibrant colors and intricate details when driven by this robust signal. So technically advanced is the video stage of the Audio+Video Standard that it has been certified by the Imaging Science Foundation for video accuracy and purity. A different signal, the same result: video performance equal to that of unsurpassed Krell audio performance.

### The Final Credits

The Audio+Video Standard is equipped with many specialty options that allows the system to match the personal preferences of the user. System parameters, speaker configurations, and input linking variations are virtually limitless. These choices are easily accessed through the remote controlled on-screen menu system of the Audio+Video Standard, insuring a simplistic guide to setup and operation options. The user may fine tune the Audio+Video Standard so that it functions in a manner that is both practical and engaging. As installations become more complex, the ability to personalize the central piece in a system cannot be overstated. The capabilities of this unit are remarkable, and the ability for customization allows for a seamless interface between the operator and the Audio+Video Standard's environment.

The daunting combination of digital processing power, endless system configurations, simplistic use and unrivaled audio and video performance has created a new standard for home theater...the Krell Audio+Video Standard.

### The Gallery

#### ANALOG AUDIO INPUTS

- 5 single-ended via RCA
- 1 balanced via XLR
- 1 single-ended tape input

#### DIGITAL AUDIO INPUTS

- 2 coaxial, 2 Toslink
- 1 AES/EBU
- 1 RF input for Dolby Digital AC-3®

#### VIDEO INPUTS

- 4 S-Video
- 4 Composite
- 1 BNC

#### ANALOG CHANNEL OUTPUTS

- Left, center, right, side surrounds, rear surrounds, 2 subwoofers
- Balanced via XLR, or single-ended via RCA

#### ANALOG TAPE OUTPUTS

- 1 audio via RCA
- 2 video via RCA

#### DIGITAL OUTPUTS

- 1 coaxial
- 1 Toslink

#### VIDEO OUTPUTS

- 3 S-Video (1 with on-screen graphics)
- 3 Composite (1 with on-screen graphics)
- 1 BNC (with on-screen graphics)

#### LISTENING MODES

- Dolby Digital AC-3®
- DTS®, Dolby Pro Logic®, Music, Mono, Preamp

KRELL® Industries, Inc., 45 Connair Road, Orange, CT 06477  
TEL 203-799-9954 • FAX 203-799-9796 • E-MAIL krell@krellonline.com

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