



KRELL
THE LEADER IN AUDIO ENGINEERING

THERE ARE NO USER-SERVICEABLE PARTS INSIDE ANY KRELL PRODUCT.

Please contact your authorized dealer, distributor, or Krell if you have any questions not addressed in this reference manual.

WARNING: Do not place the component where it could be exposed to dirt or excessive moisture.

The ventilation grids on the top and bottom of the Evolution 707 must be unobstructed at all times. Do not place flammable material on top of or beneath the component.

When making connections to this or any other component, make sure all components are off. Turn off all system power before connecting the Evolution 707 to any other component. Make sure all cable terminations are of the highest quality, free from frayed ends, short circuits or cold solder joints.

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Table of Contents

Introduction (9)

Features and Functions (9)

Specifications (10)

Getting Started (13)

UNPACKING AND PLACEMENT (13)

1. Accessories included

AC Power guidelines (13)

Back Panel Description (Diagram) (14)

Front Panel and Remote Control Function (Diagram) (15)

Initial Setup (16)

OSD (On Screen Display) (16)

1. Connection and Operation of the OSD (16)

2. AC Power cord connection (16)

3. Video output Connection (16)

5. Power Button (16)

6. Menu Button (16)

Main Menu, Navigation and Setup (17)

CONFIGURE VIDEO OUTPUT (17)

1. Overview (17)

2. Analog Video Scaler (17)

A. Setting maximum Video output resolution (17)

B. Setting Zone 2 video output resolution (17)

LISTENING ROOM SETUP (18)

1. Overview (18)

2. Configure Speakers (18)

A. Quantity (18)

B. Full Range (18)

C. LIM (?) Hz (18)

D. Front (19)

E. Center (19)

F. Surround (19)

G. Back (19)

Table of Contents Cont...

H. 5.1 Surround (19)

I. Subwoofer (20)

3. Speaker Distance (21)

A. Left, Right (21)

B. Center, Center2 (21)

C. L Surr, R Surr (21)

D. L Back, R Back (21)

E. Sub1, Sub2, Sub3, Sub4 (21)

4. Calibrate Room Setup (22)

A. Auto Noise Sequence (22)

B. Manual Noise Sequence (22)

C. Program Material (22)

CONFIGURE DEVICES (23)

1. Overview (23)

A. Defining inputs and outputs for audio and video sources (23)

B. Video input and output connections (23)

1. Digital Video Options (23)

a. *HDMI*

2. Analog Video Options (23)

a. *Component Video*

b. *S-Video*

c. *Composite Video*

C. Audio Input and Output connections (24)

1. Digital Audio Options (24)

a. *HDMI*

b. *Optical S/PDIF*

c. *Coaxial S/PDIF*

2. Analog Audio Options (24)

a. *CAST*

b. *Balanced*

c. *Single-Ended*

d. *Multi-Channel*

- 2. Changing default input presets. (26)**
- 3. Configure Video (26)**
 - A. Assigning Video Inputs (26)
 - 1. Setting the Main Video Input (26)
 - 2. Setting the Zone 2 Video input (26)
- 4. Configure Audio (27)**
 - A. Assigning Audio Inputs (27)
 - 1. Analog (28)
 - 2. Digital (28)
 - 3. Lip Sync (28)
 - 4. EQ Memory (28)
 - B. Setting the Analog audio Input (28)
 - 1. Analog (28)
 - 2. Digital (28)
 - C. Choosing an Analog Decode Preference (28)
 - D. Auto Migration (29)
 - E. Choosing a Digital Decode Preference (29)
 - F. Assign Lip Sync Delay (31)
 - G. Assign EQ Memory (31)
- 5. Configure Trigger (32)**
 - A. Overview (32)
 - B. Configure Trigger (32)
 - C. Delay (32)

Table of Contents Cont...

CONFIGURE LEVEL ADJUSTMENT (33)

1. **Overview (33)**
2. **Device Trim (33)**
3. **Analog Input Trim (33)**
 - A. Anti-Clip
 - B. Input Gain
4. **Music Mode Sub Trim (33)**
5. **DTS Control Trim (33)**
6. **PLII Control Trim (34)**
7. **Maximum Volume Limit (34)**
8. **Zone 2 Level (34)**

OPERATION (35)

1. **Overview (35)**
2. **OSD Operation (35)**
 - A. OSD On Time (35)
 - B. Line Number (35)
 - C. Menu Back ground (35)
 1. Transparent
 2. Solid
 - D. LCD Contrast (35)
3. **Audio Operation (35)**
 - A. Mute Mode (35)
 - B. Dolby Hold Mode (35)
 - C. DTS Mode Hold (35)
 - D. EX Auto Switching (35)
 - E. Dynamic Range (35)
4. **5.1 Input Setup (36)**
5. **Program Remote (36)**
6. **System Information (36)**

Table of Contents Cont...

7. Room EQ Setup (37)

- A. Overview (37)
- B. Memory (37)
- C. Channel (37)
- D. Filter Parameters (37)
 - 1. Type (37)
 - a. *HPF* (37)
 - b. *LPF* (38)
 - c. *Notch* (38)
 - d. *Lshlf* (39)
 - e. *Hshlf* (39)
 - f. *Pking* (39-40)
 - 2. Frequency (40)
 - 3. Shape (40)
 - 4. Level (40)
- E. Apply (40)

Basic Operation of the Evolution 707 [41]

- 1. Power On/ Off and Stand-By (41)
- 2. Volume Control (41)
- 3. Quick level adjustment buttons (41)
 - A. Center
 - B. Surr
 - C. Back
 - D. Sub
 - E. Bal
 - F. EQ assignment
- 4. Zone 2 Output (41)
- 5. Tape/ VCR inputs and outputs (42)
- 6. Button Mode Presets (42)
- 7. Save and Recall (42)
- 8. Factory Reset (42)

Table of Contents Cont...

Evolution 707 Future Upgrades and Firmware (43)

1. ABCD Mode Options (43)
2. Mic Input (43)

RS-232 Control (44)

RS-232 Code Set

1. Preparing for RS-232 Connectiviity (44)
2. Settings (44)
3. Notes (44)
4. Code (Diagram) (44)

RS-232 Feedback (48)

RC-5 Control (58)

RC-5 Code Set (58)

1. Preparing for RC-5 Connectivity (58)
2. Settings (58)
3. Notes (58)
4. Code (Diagram) (59)

Questions and Answers (61)

Warranty (62)

Service (63)

Introduction to the KRELL Evolution 707

Thank you for your purchase of the Evolution 707 Surround Sound Preamplifier/ Processor. Coupling legendary KRELL preamplifier technology, state of the art digital processing, and the latest in HDMI 1.3 surround formats, the Evolution 707 is an uncompromising centerpiece for a reference music and home theater system. Housed in a chassis normally reserved for Krell amplifiers, each critical sub circuit is given unrestricted space for maximum circuit density. Designed to take full advantage of the lossless Dolby and DTS Master Audio sound tracks found on Blu-ray discs, the Evolution boasts the most advanced circuitry ever employed in a surround sound preamplifier/ processor. The Evolution 707 begins as a reference preamplifier utilizing discrete current based Class A, direct coupled circuitry for enhanced speed and ultra high signal bandwidth. All twelve Evolution 707 analog output stages are built to the same exacting standard and support Krell CAST, balanced and single-ended cable connections. At the heart of the Evolution 707 digital signal processing is a pair of dual core 32 bit Crystal CS497004 DSP's performing 1.8 giga operations per second. Video signals are treated with equal care and are afforded isolated circuitry for broadcast quality transmission of signals up to 1080p/60Hz. A massive toroidal transformer, larger than in many amplifiers, insures precise voltages for the individual audio, video, processing, and control stages. These advanced technologies pair elegantly to an interface configurable to a user's preferences.

Features and Functions

The Evolution 707 includes 8.4 channels of audio output. In addition to the standard 7.1 channels available in conventional surround sound processors, the Evolution 707 includes a second center channel for positioning above and below screen applications and three additional subwoofer outputs. Subwoofer options include multiple left/right, front/ back, and Low Frequency Effects (LFE) options. Individual crossover settings for each speaker provide seamless integration between subwoofer and main speakers. A powerful 1/3 octave digital equalizer completes the fine tuning by tailoring individual speaker performance to listening environments that are less than ideal.

The Evolution 707 video circuitry is fully HDMI 1.3 compliant, supports 24 bit Deep Color content, and is equipped with an onboard video scaler. With stunning clarity, this scaler up-converts incoming analog video signals to a maximum of 1080p/60Hz over HDMI output or 1080p/30Hz via component video output. A second video zone enables viewing of another video source simultaneously.

Evolution 707 software based core is readily updatable via a standard RS-232 computer connection if improvements become available. One future update is room correction. Included with the Evolution 707 is a sensitive calibration microphone that will gather information from the listening environment and suggest a set of calibrations for optimal performance. Once the software is completed, this will be made available to all Evolution 707 end users at no charge.

The Evolution 707 is a sophisticated product with many operational options. This manual is divided into several parts, detailing the various configurations and settings available in the Evolution 707.

Specifications

SIGNAL-TO-NOISE RATIO	"A" Weighted	96 dB
TOTAL HARMONIC DISTORTION (THD)	Unweighted	20 Hz-20 kHz, +0, -.5 dB
INPUTS	ANALOG AUDIO	(2) Pair CAST via CAST connectors (1) Pair Balanced via XLR connectors (5) Pairs Single-ended via RCA connectors (1) Discrete 7.1 via RCA connectors (1) Tape in via RCA connectors (1) VCR audio in via RCA connectors
	DIGITAL AUDIO	(4) HDMI via HDMI connectors (4) EIAJ optical via Toslink connectors (4) Coaxial via RCA connectors
	DIGITAL VIDEO	(4) HDMI via HDMI connectors
	ANALOG VIDEO	(3) Component Video via RCA connectors (4) S-video via DIN connectors (3) Composite Video via RCA connectors
OUTPUTS	ANALOG AUDIO	(12) CAST via CAST Connectors R, L, C1, C2, SR, SL, SBR, SBL, S1, S2, S3, S4 (12) Balanced via XLR Connectors R, L, C1, C2, SR, SL, SBR, SBL, S1, S2, S3, S4 (12) Single-ended via RCA Connectors R, L, C1, C2, SR, SL, SBR, SBL, S1, S2, S3, S4 (1) Tape out via RCA connectors (1) VCR audio out via RCA connectors (1) <i>Zone 2 out via RCA connectors</i>
	DIGITAL AUDIO	(1) EIAJ optical via TosLink connector (1) Coaxial via RCA connector
	DIGITAL VIDEO	(1) HDMI via HDMI connector
	ANALOG VIDEO	(1) Component Video via RCA connectors (1) <i>Zone 2 Component Video via RCA connectors</i> (1) S-video via DIN connectors (1) <i>Zone 2 S-video via DIN connector</i> (1) Composite Video via RCA connector (1) <i>Zone 2 Composite Video via RCA connector</i>

Specifications Cont...

CONTROL

- (1) IR Receiver for Remote Control
- (1) RS-232 via DB9 Female Connector Straight Wired
- (1) RC-5 via 1/8" stereo "trs" Receptacle
- (1) 12vdc Remote Trigger Input via 1/8" Mono receptacle
- (4) 12vdc Remote Trigger Outputs via 1/8 Mono receptacles
- (2) Proprietary KRELL CAN ports via RJ-45 Connectors

DIGITAL DECODING MODES

- Dolby TrueHD
- Dolby Digital Plus
- Dolby Digital
- Dolby Digital EX
- Dolby Pro Logic IIx

- DTS-HD Master Audio™
- DTS-HD High Resolution Audio™
- DTS Digital Surround | ES | Neo:6 | 96/24™

- PCM 5.1
- PCM 7.1

- PREAMP (Direct Analog Only)
- PREAMP 5.1 (Direct Analog Only)

SURROUND ENHANCEMENT MODES

- General Admission
- Front Row
- On Stage
- Enhanced Stereo
- Orchestra
- Mezzanine
- Full Range + Sub
- Monophonic
- Party

RS-232 DB9 Pin Out

1. Data Carrier Detect
2. Received Data
3. Transmitted Data
4. Data Terminal Ready
5. Signal Ground
6. Data Set Ready
7. Request To Send
8. Clear To Send
9. Ring Indicator

Specifications Cont...

RC-5 pin out	Tip = RC-5 data, Ring = +5 V, Sleeve = GND
XLR Pin Out	Pin 1 (ground) Pin 2 (non-inverting "Hot") Pin 3 (Inverting)
Maximum Input	Balanced 8.2 Vrms Single Ended 4.1 Vrms
Maximum Output	Balanced 17.8 Vrms Single Ended 8.9 Vrms
Audio Input Impedance	Balanced 475 K Ω Single Ended 47 K Ω
Audio Output Impedance	Balanced 150 Ω Single Ended 150 Ω
Power Consumption	Stand-by 178W Operation 196W
DIMENSIONS	Inches (L) 21.22 x (W) 17.25 x (H) 8.75 Centimeters (L) 53.90 x (W) 43.82 x (H) 22.23
WEIGHT	52lbs Unit only 23.59kg Unit only 64lbs Shipping Weight 29.03kg Shipping weight

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

Getting Started

UNPACKING AND PLACEMENT

The Evolution 707 is a precision instrument and should be handled with the utmost care when deciding where it is to be placed and while it is being unpacked and finally installed. Because of its physical size and weight, it is recommended that two people unpack and place the unit. Make sure the installation location is dry and level, and able to provide adequate ventilation. The Evolution 707 runs warm to the touch and requires the bottom and top of the unit be free from obstruction with good circulation of air. Allow a minimum of 3 inches above the unit for proper ventilation. Additional ventilation may be required when the unit occupies the same space with other electronics that generate heat like power amplifiers. Please consult an authorized KRELL dealer or KRELL industries to insure proper installation guidelines.

1. Accessories included

- A. 1 AC Power cord
- B. 1 Handheld Remote control
- C. 1 Trigger cable
- D. 1 Owner's reference
- E. 1 Quick start guide
- F. 1 Warranty registration card
- G. 2 AAA Batteries
- H. 1 T-10 torx wrench

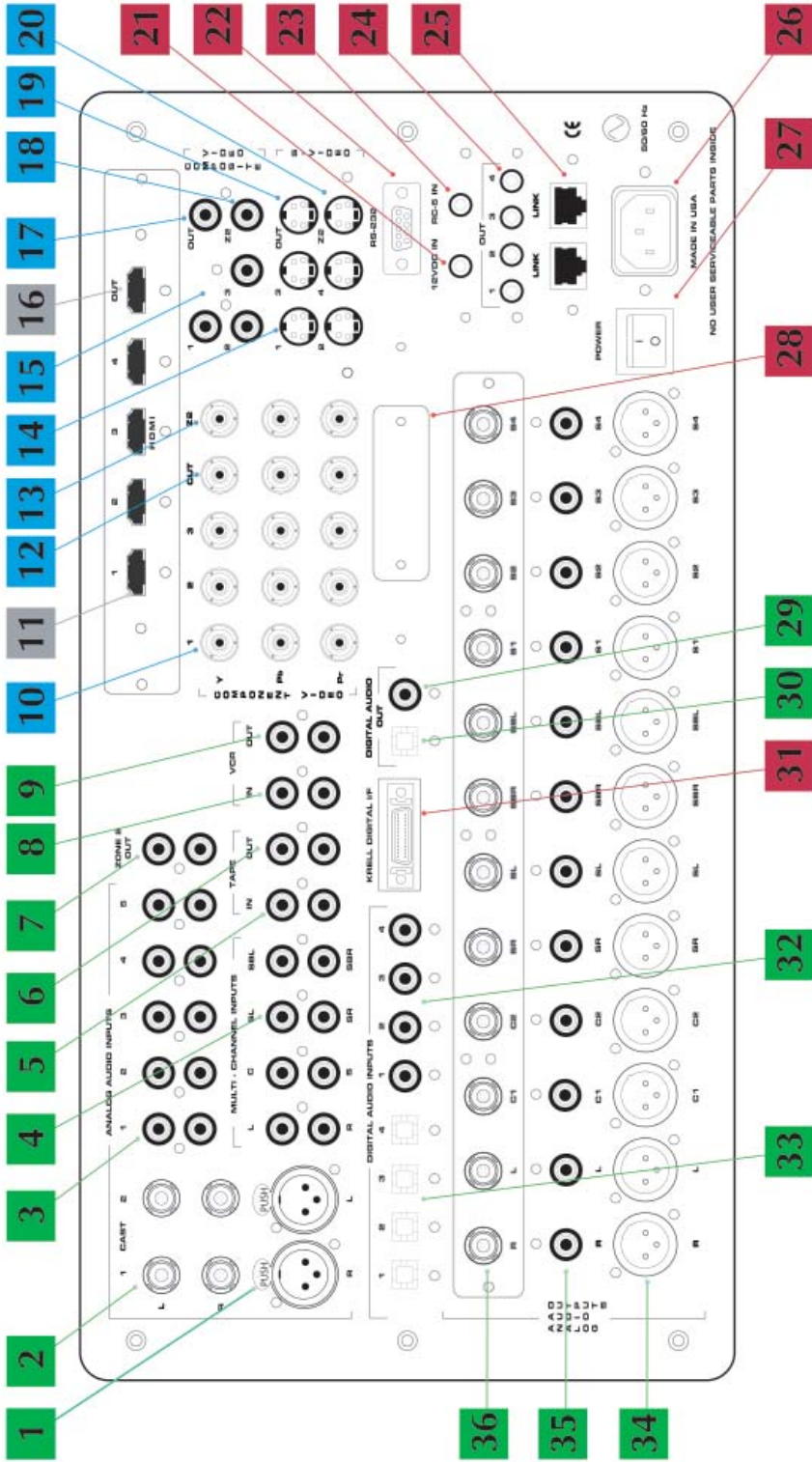
AC Power Guidelines

The Evolution 707 is designed to work all over the world. The operating voltage is determined at the factory and is specifically set to operate in the country of final destination. The Evolution 707 requires good clean power and doesn't require additional filtration. Make sure the AC line voltage is within plus or minus 10% of the specified AC line voltage setting for proper operation.

NOTE: The Evolution 707 may not operate correctly when AC regeneration or voltage conversion devices are utilized.

Getting Started

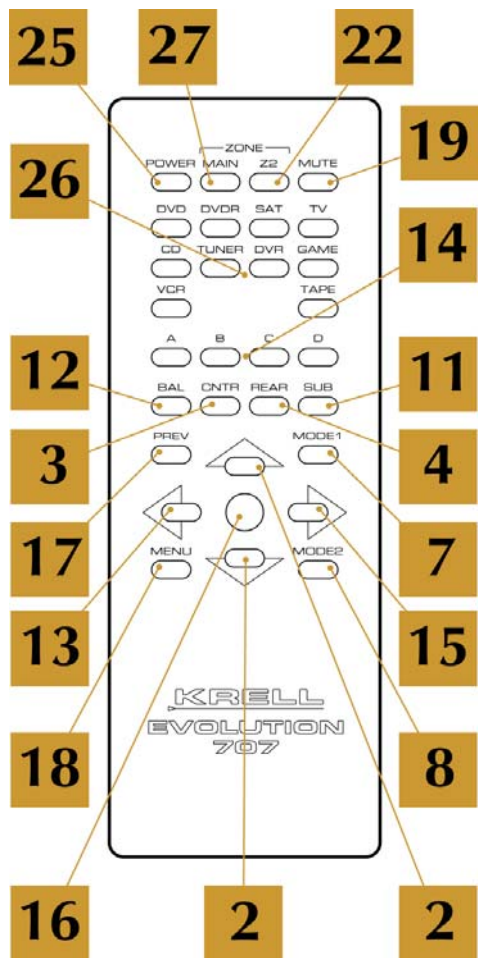
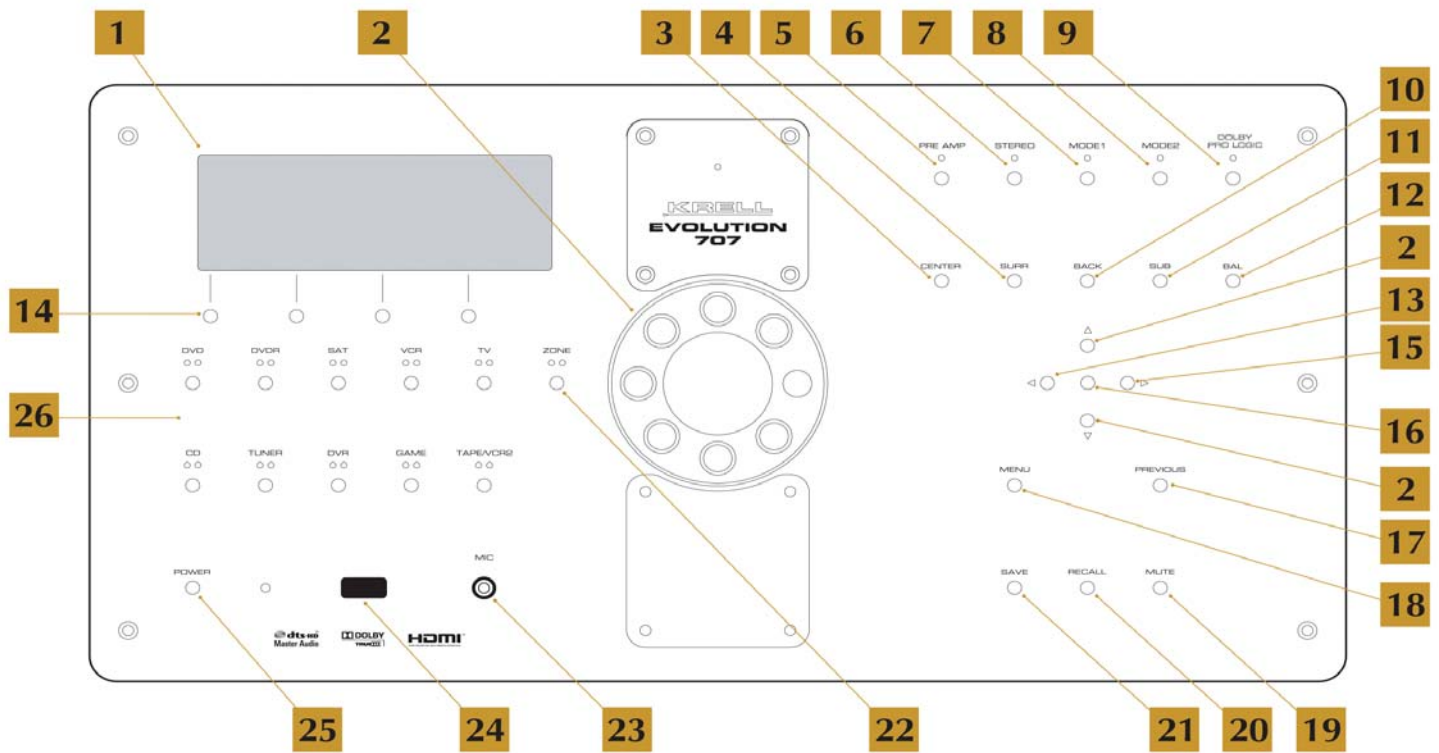
Back Panel Description



1	Balanced analog inputs	13	Zone 2 Component video output	25	KRELL can link
2	CAST inputs	14	S-video inputs	26	AC power cord receptacle
3	Single-ended analog inputs	15	Composite video inputs	27	Main Power Switch
4	Multichannel analog input	16	HDMI output	28	Auxiliary dock interface
5	Tape input	17	Composite video output	29	Coaxial digital output
6	Tape output	18	Zone 2 Composite video output	30	EIAJ optical digital output
7	Zone 2 analog audio outputs	19	S-video output	31	Auxiliary digital interface
8	VCR audio input	20	Zone 2 S-video output	32	Coaxial digital inputs
9	VCR audio output	21	12v Trigger input	33	EIAJ optical digital inputs
10	Component video inputs	22	RS-232 control port	34	Balanced audio outputs
11	HDMI 1.3 Inputs	23	RC-5 control port	35	Single-ended audio outputs
12	Component video output	24	12v Trigger outputs	36	CAST audio outputs

Getting Started

Front Panel and Remote Control Function



1	Display window	15	Navigate right adjustment
2	Volume Up/ Down adjustment	16	Enter button
3	Quick center channel adjust	17	Previous screen adjustment
4	Quick Surround channel adjust	18	Activate OSD Menu button
5	Quick Preamp Mode Button	19	Mute audio select
6	Quick Stereo Mode Button	20	Setup memory recall
7	Quick Mode 1 Button	21	Save system setup
8	Quick Mode 2 Button	22	Zone 2 PWR button
9	Quick Dolby Pro Logic Button	23	Microphone Input
10	Quick Surr Back channel adjust	24	IR receive window
11	Quick Sub channel adjust	25	Power Standby button
12	Balance adjust	26	Device input select
13	Navigate left adjustment	27	Main Zone Select
14	A, B, C, D Quick Select		

Initial Setup

OSD (On Screen Display)

1. Connection and Operation of the OSD

The OSD (On Screen Display) connection of the Evolution 707 to a video display is the single most important connection to the setup of this processor. The entire configuration and setup of the Evolution 707 is performed while viewing the OSD.

Note: Do not connect any inputs at this time.

2. **Attach the AC power cord to the receptacle on the back of the Evolution 707.**
3. **Plug the Power cord into an AC receptacle and turn on the rear power switch.**

The Evolution 707 will go through an initialization process and display the current software revision installed. Wait for the initialization to complete before proceeding.

4. Connect the Video Output of the Evolution 707 to a Video Monitor

The OSD can be displayed from any video output. HDMI, component, s-video and composite video are all supported. Care should be taken in selecting which video format to use. Older monitors, projectors and televisions do not have the ability to display some of the latest video output formats. Use composite video if you are uncertain as to the video display's capabilities.

NOTE: When using the HDMI output for OSD do not connect an HDMI input at this time. It can make initial setup more difficult as the Evolution 707 will be communicating with the source before the setup of inputs and outputs has occurred.

5. Press the Power button on the front panel.

Within a few seconds the video display will show a blue screen with white text.

NOTE: If you are using an analog output such as component or composite video, press cd on the front panel, this will go to an analog defaulted video setting and expedite your setup.

NOTE: If a blue screen with text does not occur, check the following:

- A. Video connections
- B. Input of the video display
- C. Evolution 707 is in operation mode

If a problem still persists, turn the Evolution 707 off via the rear panel switch and turn it back on.

6. Press the Menu Button

Now that a video connection has been established, press the Menu button, the set-up menu will appear on the video display. It is now possible to navigate the set-up menu using a combination of the up, down, left, right, enter, and previous buttons. These can be accessed via the Front panel of the Evolution 707 or the remote control.



CONFIGURE VIDEO OUTPUT

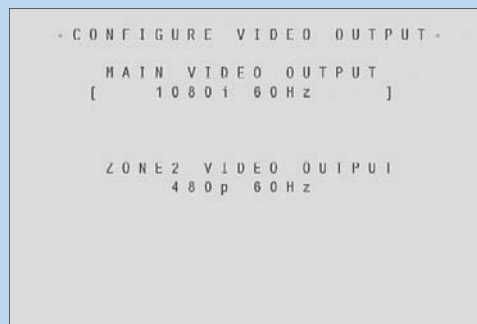
1. Overview

Configure video output sets the analog video scaler to an appropriate video output resolution. Analog video can be up-scaled up to 1080P 60Hz allowing video parity for all video sources. Once this has been set all analog video sources will be up-scaled and output to this resolution. HDMI inputs are NOT affected by this setting.

NOTE: Make sure your video display is capable of displaying the output resolution selected, a series of error messages requiring user response will appear if the output resolution is set incorrectly.

2. Analog Video Scaler

A. Setting maximum Video output resolution



These are the available analog scaler output formats

480i - 720 x 480 60Hz	720p - 1280 x 720 60Hz	1080p - 1920 x 1080 30Hz
480p - 720 x 480 60Hz	1080i - 1920 x 1080 50Hz (Outside the USA)	1080p - 1920 x 1080 50Hz (Outside the USA)
576i - 720 x 576 50Hz (Outside the USA)	1080i - 1920 x 1080 60Hz	1080p - 1920 x 1080 60Hz
576p - 720 x 576 50Hz (Outside the USA)	1080p - 1920 x 1080 24Hz	
720p - 1280 x 720 50Hz (Outside the USA)	1080p - 1920 x 1080 25Hz (Outside the USA)	

B. Setting Zone 2 video output resolution

The Evolution 707 has a separate set of video outputs available specifically to operate a second video system or zone. These signals can be routed to an entirely different system and operated separately from the main zone system. The second zone video can be output over component, s-video or composite video terminations.

NOTE: The zone two video can only utilize analog video sources, HDMI inputs cannot output zone 2 video, however any component, s-video or composite video can be output to zone 2 video.

Main Menu, Navigation and Setup Cont...

These are the available analog scaler output formats for Zone 2

480i - 720 x 480 60Hz	576p - 720 x 576 50Hz (Outside the USA)	1080i - 1920 x 1080 50Hz (Outside the USA)
480p - 720 x 480 60Hz	720p - 1280 x 720 50Hz (Outside the USA)	1080i - 1920 x 1080 60Hz
576i - 720 x 576 50Hz (Outside the USA)	720p - 1280 x 720 60Hz	

LISTENING ROOM SETUP

1. Overview

Listening room setup is comprised of three major parts; configure speakers, speaker distance and calibrate volume. This group of settings defines the speaker crossover parameters as well as distance of speaker relative to the listening position and speaker SPL (sound pressure levels). Each loudspeaker in the system can be set to a specific crossover point to insure proper utilization of that speaker's frequency response and its relationship to the subwoofer.

2. Configure Speakers

Defines number of speakers and the frequency relationship to the subwoofer or LFE channels for each group of speakers in the surround system. The quantity and frequency options are available for each group of speakers listed below.

```

- SPEAKER SETUP -

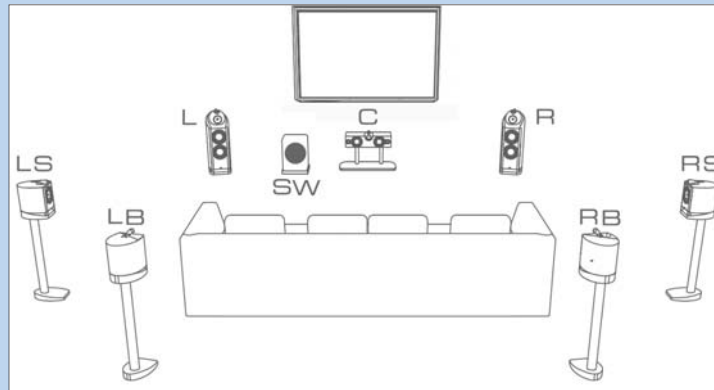
 2 FRONT          FULL RANGE
 1 CENTER         LIM 60 Hz
 2 SURROUND      LIM 60 Hz
NO BACK          N/A
[ NO ] 5.1 SURR   N/A
[ NO ] SUBS
    
```

- A. **Quantity** - Sets the number of channels in the system.
- B. **Full Range** – This setting allows the passing of full spectrum audio frequencies including LFE information.
- C. **LIM (?) (limited) Hz** – Sets the low pass filter frequency. Low frequency information below this setting is channeled to the sub woofers or LFE channels.

The following settings are available to any of the speakers in the system except the subwoofer. This setting will specify a point where the low frequency response of each speaker respectively will be re-routed to the subwoofer or LFE enabled speakers. Choose a setting from the chart below that corresponds to the low frequency specification of the speakers in use.

LIM 40 Hz	LIM 75 Hz	LIM 120 Hz	LIM 190 Hz
LIM 45 Hz	LIM 80 Hz	LIM 130 Hz	LIM 200 Hz
LIM 50 Hz	LIM 85 Hz	LIM 140 Hz	LIM 210 Hz
LIM 55 Hz	LIM 90 Hz	LIM 150 Hz	LIM 220 Hz
LIM 60 Hz	LIM 95 Hz	LIM 160 Hz	LIM 230 Hz
LIM 65 Hz	LIM 100 Hz	LIM 170 Hz	LIM 240 Hz
LIM 70 Hz	LIM 110 Hz	LIM 180 Hz	LIM 250 Hz

Main Menu, Navigation and Setup Cont...



D. Front - Speaker channels positioned front Left and front Right respective to the listening position.

1. Quantity - N/A

NOTE: Left and Right front speakers are a minimum requirement for surround or two channel music play back. The quantity value cannot be changed.

1. Crossover - Full, LIM (?) Hz

E. Center - Speaker channels positioned front Center respective to the listening position.

1. Quantity - NO, 1 and 2
2. Crossover - Full, LIM (?) Hz

NOTE: The Evolution 707 allows the use of an additional center channel speaker. The settings for the center channels are exactly the same and they are configured as if there were one. Typically a second center channel is used in very large rooms where a higher output level is required.

F. Surround - Speaker channels positioned to the Left and Right midway into the room respective to the listening position.

1. Quantity - NO, 1 and 2
2. Crossover - Full, LIM (?) Hz

G. Back - Speaker channels positioned to the Left and Right behind the listening position respectively.

1. Quantity - NO, 1 and 2
2. Crossover - Full, LIM (?) Hz

H. 5.1 Surround - This setting allows the steering of surround information to be routed additionally to the rear speakers, surround speakers or both during 5.1 channel playback in a 7.1 system.

NOTE: This function is to utilize the rear speakers for 5.1 source material only. 7.1 material generates the rear channel information.

The options are:

1. Both - Routes Surround information to both the Surround speakers and the Back speakers.
2. Back - Routes Surround information to the Back speakers.
3. Surround - Routes Surround information to the Surround speakers.

Main Menu, Navigation and Setup Cont...

I. Subwoofer – A speaker channel (s) specifically utilized for LFE (Low Frequency Effects) information and low frequency information to surround speakers set to limited.

1. Quantity – NO, 1, 2, 3, and 4

NOTE: The Evolution 707 allows the use of up to three additional subwoofers. The settings for each of the SW channels originate from the original LFE channel but are configured individually to perform specific or similar functions. Subwoofer options are based on quantity used. The combinations are:

- SPEAKER SETUP -			
2	FRONT	FULL RANGE	
1	CENTER	LIM 60 Hz	
2	SURROUND	LIM 60 Hz	
NO	BACK	N/A	
	5.1 SURR	N/A	
[4]	SUBS		
	SUB 1	SMALL + LFE	
	SUB 2	SMALL + LFE	
	SUB 3	SMALL + LFE	
	SUB 4	SMALL + LFE	

- SMALL + LFE – LFE and Subwoofer functions are enabled. All low frequency from speakers set to limited as well as the LFE effects are sent to the subwoofer(s).
- FRONT + LFE - LFE and Subwoofer functions are enabled. All low frequency from speakers in the FRONT set to limited as well as the LFE effects are sent to the subwoofer(s).
- BACK + LFE - LFE and Subwoofer functions are enabled. All low frequency from speakers in the BACK set to limited as well as the LFE effects are sent to the subwoofer(s).
- LEFT + LFE - LFE and Subwoofer functions are enabled, all low frequency from speakers on the LEFT side set to limited as well as the LFE effects are enabled.
- RIGHT + LFE- LFE and Subwoofer functions are enabled. All low frequency from speakers on the RIGHT side set to limited as well as the LFE effects are sent to the subwoofer(s).

The combination of subwoofer modes are selected only via the first line of text to the right of the "SUB1" label. Set the quantity of sub channels, then navigate to this text, press the enter key and scroll through the available options for that quantity combination. The Chart below describes various subwoofer combinations.

	1 SUB	2 SUBS	3 SUBS	4 SUBS
SUB 1	SMALL + LFE	SMALL + LFE LEFT + LFE FRONT + LFE	SMALL + LFE LEFT + LFE FRONT + LFE	SMALL + LFE LEFT + LFE FRONT + LFE
SUB 2	N/A	SMALL + LFE RIGHT + LFE BACK + LFE	SMALL + LFE RIGHT + LFE BACK + LFE	SMALL + LFE RIGHT + LFE BACK + LFE
SUB 3	N/A	N/A	SMALL + LFE LFE	SMALL + LFE LEFT + LFE FRONT + LFE
SUB 4	N/A	N/A	N/A	SMALL + LFE RIGHT + LFE BACK + LFE

Main Menu, Navigation and Setup Cont...

3. **Speaker Distance** – Defines the distance to each speaker in the surround sound system from the listening position. Each Speaker can be adjusted from 0 feet to 30 feet in .5 foot increments for proper arrival of sound information to the listening position. The default values are set to 0.0 feet, speakers labeled N/A have not been enabled in the listening room setup and are inactive.

- ROOM SETUP -			
LEFT	CENTER1	RIGHT	
[0.0]	0.0	0.0	
L SURR	CENTER2	R SURR	
0.0	N/A	0.0	
L BACK	C BACK	R BACK	
N/A	N/A	N/A	
SUB1	SUB2	SUB3	SUB4
0.0	0.0	0.0	N/A
In Feet			

- A. **LEFT, RIGHT** - Speaker channels positioned front Left and front Right respective to the listening position. Left and right are required for a 5.1 or 7.1 surround system.
- B. **CENTER1, CENTER2** - Speaker channels positioned front Center respective to the listening position. For large rooms 2 center channels can be utilized. Typically a center channel is positioned above or below the video screen. For really large rooms with large screens, centers can also be placed side by side to increase the center image width and increase output. They also are placed above and below for additional output in large rooms. The center channel is required for a 5.1 or 7.1 surround system.
- C. **L SURR, R SURR** - Speaker channels positioned to the Left and Right midway into the room respective to the listening position. They can also be placed further back or behind the listening position in 5.1 systems. Surround channels are required for a 5.1 or 7.1 surround system.
- D. **L BACK, R BACK** - Speaker channels positioned to the Left and Right behind the listening position respectively. Rear Surround channels are required for a 7.1 surround system.
- E. **SUB1, SUB2, SUB3, SUB4** - Speaker channel (s) specifically utilized for LFE (Low Frequency Effects) information. The Evolution 707 can accommodate up to 4 separate subwoofers. This can be very effective in the creation of life like surround presentation. subwoofers are the .1 in a 5.1 or 7.1 surround system. The LFE channel is specifically developed to carry Low frequency energy and effects in this frequency range. In a traditional surround system the .1 or LFE channel will not have a lot of musical information. The 707 can route low frequency musical information to the subwoofers as well as the LFE information. With multiple subwoofers the signal can have a dedicated LFE channel and a dedicated low frequency speaker.

4. Calibrate Room Setup

Calibrate volume is where a relative output level for each speaker is set. Level matching for each of the speakers is measured from the listening position utilizing a SPL meter. The level for each speaker is to be set to 75dB according to the Dolby standard. This is widely accepted as the standard, however a higher or lower level can be utilized as long as all speakers are set to the same level for an accurate point of reference. The Evolution 707 outputs a constant pink noise tone for each of the channels so the calibration can take place. Set the level meter for a slow response time and C-weighting. The goal is to have all of the levels be as close to 75dB as possible. Each level can be tuned from -15dB to +15dB in 1dB Increments.

- MANUAL CALIBRATION -			
LEFT	CNTR 1	RIGHT	
0 DB	0 DB	0 DB	
L SURR	CNTR 2	R SURR	
0 DB	N / A	0 DB	
L BACK	C BACK	R BACK	
N / A	N / A	N / A	
SUB 1	SUB 2	SUB 3	SUB 4
0 DB	0 DB	0 DB	N / A

- A. Auto Noise Sequence** – Once auto is selected the automatic noise sequence begins. Starting from the Left channel the digits indicating dB level directly below the label (LEFT) will flash. To change the level setting press the enter key. The digits indicating dB level directly below the label (LEFT) will stop flashing, now using the up and down arrows you can select the required dB level. Once that level has been set press the enter button again and the auto setup program will move to the next speaker (CENTER). The auto setup program will stay on each speaker channel for approximately 3 seconds and then move to the next speaker channel. Once finished to exit from the auto noise sequence menu press the previous button or the menu button.
- B. Manual Noise Sequence** – The manual noise sequence works similarly to the Auto Noise sequence, the major difference being that the automatic portion has been removed. In manual mode, navigation to each of the speaker components is done using the arrow keys. Using the arrow keys, navigate to the speaker you want to change, press the enter button and the digits indicating dB level directly below the label will begin to flash while the audible pink noise tone will begin. Once the adjustment is completed press the enter button again, now navigate to the next speaker in need of adjustment.
- C. Program Material** – Program material allows the level adjustment utilizing the movie sound track or any multi-channel audio from a selected source to be used instead of the pink noise tone. This mode can be helpful to fine tune the overall sound field while an actual sound or musical event is being played back. Navigation to each of the speaker components is done using the arrow keys. Using the arrow keys, navigate to the speaker you want to change, press the enter button and the digits indicating dB level directly below the label will begin to flash while selected source audio begins. Once the adjustment is completed press the enter button again, navigate to the next speaker in need of adjustment.

CONFIGURE DEVICES

1. Overview

A. Defining inputs and outputs for audio and video sources

The surround sound processor is at the heart of any home theater system. The Evolution 707 is very flexible in regards to integrating audio and video sources. It is recommended to define and map out how each source component will be connected to the processor, how the Evolution 707 outputs will be connected to various amplifier channels and eventually amplifier channels be connected to speakers. Any of the push button presets on the front panel or remote control can be changed to accommodate different audio or video assignments.

Here are the default input presets for audio and video devices.

Button Preset	DVD	DVDR	SAT	VCR	TV
Video	HDMI1	HDMI2	COMPONENT 1	COMPONENT 2	HDMI3
Dig Audio	HDMI A	OPT2	OPTICAL 1	COAX 2	HDMI A
Analog Audio	CAST1	S2	S1	VCR	S3
Button Preset	CD	TUNER	DVR	GAME	TAPE/VCR2
Video	COMPOSITE 1	COMPOSITE 2	COMPONENT 3	HDMI4	COMPOSITE 3
Dig Audio	DIG DISABLED	DIG DISABLED	DIG DISABLED	HDMI A	DIG DISABLED
Analog Audio	B1	S5	5.1 PREAMP	S4	TAPE MONITOR

B. Video Input and output connections

1. Digital Video Options

- a. **HDMI** – (High-Definition Multimedia Interface) is an audio/video connection or interface for sending and receiving uncompressed audio and video data. HDMI supports video from HDMI is also the exclusive carrier for Dolby TrueHD and DTS-HD Master Audio Formats. There are (4) HDMI inputs and (1) Output on the Evolution 707. The Evolution 707 uses HDMI connections for HDMI audio and video.

1. Analog Video Options

- a. **Component Video** – A High-definition video connection standard featuring three dedicated signal paths for Red, Blue and Green. This video standard also supports uncompressed video but does not carry audio data and would require the use of an audio interface to be used in conjunction. There are (3) Component video inputs (1) output and (1) zone 2 output. The Evolution 707 uses RCA connections for component video.
- b. **S-video** – (Separate Video) A standard definition connection featuring a data path for brightness and one for color. A step up from composite video in resolution that also does not carry audio data and would require the use of an audio interface to be used in conjunction. There are (4) S-video inputs (1) output and (1) zone 2 output. The Evolution 707 uses 4 Pin S-video connections for S-video.
- c. **Composite Video** - A low definition connection combining sync information, brightness and color over one conductor. Composite video does not carry audio data and would require the use of an audio interface to be used in conjunction. There are (4) composite inputs (1) output and (1) zone 2 output. The Evolution 707 uses RCA connections for composite video.

C. Audio Input and output connections

1. Digital Audio Options

- a. **HDMI** – The new reference standard for uncompressed digital audio formats. The source and processor must both operate HDMI version 1.3 or better to accommodate the full spectrum of uncompressed audio. The Evolution 707 is one of the first HDMI 1.3 compliant products introduced to the marketplace. The Evolution 707 can decode all of the standard Dolby Digital and DTS 2-channel and multi-channels formats including:

- 8 channels of 24/96 (24bit 96Khz) in Dolby TrueHD or DTS-HD
- 6 channels of 24/192 (24bit 192Khz) in Dolby TrueHD or DTS-HD
- 8 channels of 24/192 (24bit 192Khz) in LPCM

There are (4) HDMI inputs (1) output. The Evolution 707 uses HDMI connections for HDMI audio.

- b. **Optical S/PDIF** - (EIAJ Optical or TOSLINK) An industry standard digital audio connection designed to support Dolby digital, DTS and PCM standards. S/PDIF can decode A Maximum of 2-channel 24/96 (24bit 96Khz) data or 8 channels of 24/48 (24bit 48Khz). Optical connections use light to transmit data are not physically grounded making them not susceptible to ground loops or external RFI interference. There are (4) optical inputs and (1) output. The Evolution 707 uses TOSLINK connections for S/PDIF optical digital audio.

- c. **Coaxial S/PDIF** – An industry standard digital audio connection designed to support Dolby digital, DTS and PCM standards. S/PDIF can decode A Maximum of 2-channel 24/96 (24bit 96Khz) data or 8 channels of 24/48 (24bit 48Khz). There is no difference in the signal transmission between coaxial and optical, data is carried over a 75ohm coaxial cable instead of being optically transferred. There are (4) coaxial inputs and (1) output. The Evolution 707 uses RCA connections for S/PDIF coaxial digital audio.

2. Analog Audio Options

- a. **CAST** – (Current Audio Signal Transmission) is a proprietary technology by Krell that effectively combines the signal gain stages of components connected in CAST into one gain block. CAST technology virtually eliminates the noise and distortions created from the use of multiple voltage gain stages. A Krell system connected in CAST transfers the signal in the current domain, throughout the signal path to the amplifier output stage where only one current to voltage conversion (I-to-V) takes place. CAST enabled products include a transmitter and receiver circuitry that transfers current from an extremely high output impedance (source) to a low-impedance input (load), minimizing the cable's effect on signal transmission.

CAST technology expands the usable audio signal bandwidth well over 2 MHz; ensuring harmonic reflections are virtually immeasurable in the audible frequency range. CAST allows signal transmission over extended lengths of interconnect cable, allowing flexible placement for your components, without signal degradation. There are (2) CAST inputs and (12) outputs. The Evolution 707 uses 4-pin Lemo connectors for CAST.

Main Menu, Navigation and Setup Cont...

- b. Balanced** – A standard audio connection technology based on impedance balanced signal transfer. Balanced termination consists of three discrete conductors; Positive (+) or non-inverting, Negative (-) or inverting and ground. Balanced cables offer quiet performance even over long cable lengths. A true differential circuit with balanced terminations offers a gain boost of +6dB over standard single-ended formats. Balanced is the preferred connection standard for the Evolution 707 when CAST is not available. There is (1) balanced inputs and (12) outputs. The Evolution 707 uses XLR connections for balanced audio.
- c. Single-Ended** – The original standard for transferring audio signals using a single conductor and ground termination. Single-ended connections do not have the same performance benefits as Balanced or CAST terminations. There are (5) single-ended inputs, (1) Tape input, (1) VCR input, (12) outputs, (1) Tape output, (1) VCR output and (1) Zone 2 output. The Evolution 707 uses RCA connections for single-ended audio.
- d. Multi-Channel** – The Evolution 707 has a direct analog 5.1 multi-channel input. Designed specifically to take advantage of Blu-Ray, DVD-A, HD-DVD or SACD multi-channel analog output stages, this input has a direct path to the volume control and out to the complimentary class “A” output stages. There is (1) Multi-Channel input connected via RCA connectors.

2. Changing default input presets.

There are (10) preset buttons on the Evolution 707 labeled: DVD, DVDR, SAT, VCR, TV, CD, TUNER, DVR, GAME and TAPE. All the assigned inputs can be tailored to accommodate audio and video combinations from multiple sources. Every Input has a selectable video, audio and trigger component that can be arranged to accommodate any number of source combinations. Refer to the default setting chart on page 23 for quick connection information.

3. Configure Video

- A. Assigning Video Inputs – There are two settings available for each button, A main or primary video input and a Zone 2 video input. The second zone video is designed for analog video only. If a second zone video output is required, select a second zone video input in addition to the Main video input. The Evolution 707 cannot pass HDMI information to the analog video outputs. When Zone 2 video is required a second analog video input connection is necessary.

1. Setting the Main Video Input

Using the arrow keys navigate to the text below the “device” label. Press the enter button to make the text flash, while flashing and using the up and down arrows, select the device input to be changed by pressing the enter button. Navigate to the text below the “Main Video Input” label and press Enter, this will make the text flash and allow scrolling to the required input type.



Main video input device options are:

- a. *HDMI 1, HDMI 2, HDMI 3, HDMI 4*
 - b. *COMPONENT 1, COMPONENT 1, COMPONENT 3*
 - c. *SVIDEO 1, SVIDEO 2, SVIDEO 3, SVIDEO 4*
 - d. *COMPOSITE 1, COMPOSITE 2, COMPOSITE 3*
 - e. *PREVIOUS - Displays the last active video input selected.*
 - f. *MENU ONLY - Displays only the OSD and menu, no other video will be passed.*
 - g. *DISABLED - No OSD or video will be passed.*
- #### 2. Setting the Zone 2 Video input

Using the arrow keys navigate to the text below the device label “Zone 2 video input”. Press the enter button to make the text flash, while flashing and using the up and down arrows, select the device input to be changed by pressing the enter button.

Zone 2 Video Input device options are:

- a. COMPONENT 1- COMPONENT 3
- b. SVIDEO 1- SVIDEO 4
- c. COMPOSITE 1- COMPOSITE 3
- d. DISABLED
- e. PREVIOUS
- f. SAME AS MAIN - Mimics your Main video input setting.

NOTE: This is only for analog video sources and will not function with HDMI input selected.

4. Configure Audio

- A. Assigning Audio Inputs – There are potentially four audio related settings available for each preset button, A main or primary analog audio input, A main digital audio input, A lip sync delay setting and an EQ memory setting.



1. Analog - Sets analog audio option for each button
2. Digital – Sets Digital audio option for each button
3. Lip Sync – Changes the delay time between viewing a person’s lips moving on the screen and the sound leaving their mouth. Normally this synchronization will be correct but in systems where multiple video connections are made or extreme distances are required, a delay can be present. The lip Sync setting can increase the audio delay in milliseconds to match video presentation.
4. EQ Memory – Sets the room equalization mode configured in the operation menu. There are up to 4 different EQ settings that can be utilized for any button.

SEE: Operation – Room EQ Setup

- B. Setting the Analog audio Input

Using the arrow keys navigate to the text to the right of the for “device” label. Press the enter button to make the text flash, while flashing and using the up and down arrows, select the device input to be changed by pressing the enter button. Navigate to the text to the right of the “analog Input is” label and press Enter, this will make the text flash and allow scrolling to the required input type.

Main Audio input device options are:

1. Analog
 - a. CAST – C1, C2
 - b. Balanced – B1
 - c. Single-ended – S1, S2, S3, S4, S5
 - d. Tape – Tape Fixed Single-ended Input
 - e. VCR – Dedicated VCR Single-ended input
 - f. 5.1 PRE – Dedicated direct 5.1 channel analog input

2. Digital

- a. HDMI A – Auto Signal detection.

HDMI A is used when the source component utilizes the I²S protocol. I²S (Integrated Interchip Sound) is the carrier for all of the new uncompressed formats ie TrueHD, DTS-HD Master audio etc... HDMI A should be the default HDMI setting for use with uncompressed PCM or Bitstream sources.

NOTE: In order to receive uncompressed formats the video output of the source device must be set to 720p or higher.

- b. HDMI S – S/PDIF Signal mode.

*Decodes from the standard HDMI audio transport known as S/PDIF typically used for earlier sources that have audio over HDMI in an S/PDIF format. For this type of source use the HDMI S option. These source units may not transfer audio on the advanced HDMI audio transport. **NOTE:** HDMI audio inputs are defined by the Video selection.*

- c. S/PDIF Optical (TOSLINK) – OPT 1, OPT 2, OPT 3, OPT 4

- d. S/PDIF Coaxial – COAX 1, COAX 2, COAX 3, COAX 4**

- e. Disabled - No audio input selected, no audio will pass.

- f. Previous - Outputs the last active audio input selected.

- C. Choose an Analog Decode Preference

The Analog decode preference is a processor mode that can be triggered when the analog input signal is sent to the processor. The Preamp mode is a direct connection to the Volume control and does not use and signal processing designed for best analog performance.

The analog decode modes are:

STANDARD DECODE MODES

1. Dolby PLIIx Movie
2. Dolby PLIIx Music
3. DTS NEO: 6 Cinema™
4. DTS NEO: 6 Music™

KRELL MUSIC MODES

The Krell Music Surround Modes simulate different sound field experiences while listening to music.

The table below lists the modes and the speakers that operate within each mode:

1. Party	L/R/C/S/SB
2. General Admission	L/R/S/SB
3. Front Row	L/R/S/SB
4. On Stage	L/R/C/S/SB
5. Enhanced Stereo	L/R/C/S
6. Orchestra	L/R/C/S/SB
7. Mezzanine	L/R/C/S/SB
8. Full Range + Sub	L/R/S
9. Preamp	L/R
10. Stereo	L/R

D. Auto-Migration

Auto migration is a utility that allows you to connect an active analog and digital input to the same button preset. If the Processor senses a digital signal it will default to that format for sound, if it does not sense the digital signal it will switch to the analog input allowing analog signal to pass. The options for Auto Migration are OFF and ON.

NOTE: If both sets of inputs are not used simultaneously for any given button preset it is recommended to keep Auto-Migration OFF.

E. Choose a Digital Decode Preference

The Digital decode preference is a decoding mode that can be triggered when the digital input signal is sent to the processor. Not all modes are applicable to all incoming signals, the chart below describes which modes are available for specific incoming signals.

The digital decode modes are:

Dolby D 5.1

1. Dolby D 5.1
2. Dolby D 5.1 / SurEX
3. Dolby D 5.1 / PLIIx Movie
4. Dolby D 5.1 / PLIIx Music

DTS 5.1

1. DTS 5.1 Movie
2. DTS 5.1 Music

Dolby 2.0

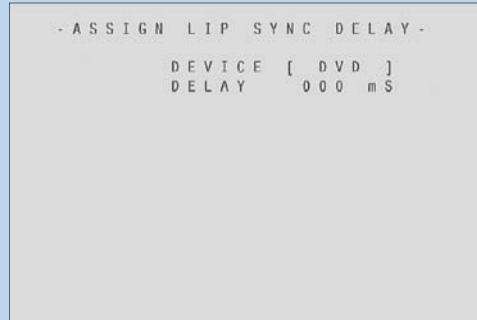
1. Dolby D / PLIIx Movie
2. Dolby D / PLIIx Music
3. Dolby D 2.0

PCM

1. Dolby PLIIx Movie (44.1, 48, 96, 192 kHz)
2. Dolby PLIIx Music (44.1, 48, 96, 192 kHz)
3. DTS NEO: 6 Cinema™ (44.1, 48, 96 kHz)
4. DTS NEO: 6 Music™ (44.1, 48, 96 kHz)
5. Party (44.1, 48, 96, 192 kHz)
6. General Admission (44.1, 48, 96, 192 kHz)
7. Front Row (44.1, 48, 96, 192 kHz)
8. On Stage (44.1, 48, 96, 192 kHz)
9. Enhanced Stereo (44.1, 48, 96, 192 kHz)
10. Orchestra (44.1, 48, 96, 192 kHz)
11. Mezzanine (44.1, 48, 96, 192 kHz)
12. Full Range + Sub (44.1, 48, 96, 192 kHz)
13. Monophonic (44.1, 48, 96, 192 kHz)
14. Stereo (44.1, 48, 96, 192 kHz)

F. Assign Lip Sync Delay

To adjust the Lip Sync options, Use the arrow keys to navigate to the text to the right of the “device” label. Press the enter button to make the text flash, while flashing and using the up and down arrows, select the device input to be changed by pressing the enter button. Navigate to the text to the right of the “Delay” label press enter and change the Lip Sync delay. The delay can be adjusted from 0 - 200ms.



G. Assign EQ Memory

To adjust the EQ Memory options, Use the arrow keys to navigate to the text to the right of the “device” label. Press the enter button to make the text flash, while flashing and using the up and down arrows, select the device input to be changed by pressing the enter button. Navigate to the text to the right of the “EQ” label press enter and change EQ assignment. The EQ options are 1, 2, 3, 4 and OFF.

SEE: Operation – Room EQ Setup



5. Configure Trigger

A. Overview

A trigger is an industry standard interface where a wire is connected between components enabling control the power on or off sequence simultaneously or with a delay. The Evolution 707 uses standard 12v DC Triggers. KRELL components use a constant 12v for a power ON state and 0 volts for the power OFF state. Connect a 12v trigger cable to one of the 4 trigger outputs on the Evolution 707. Connect the other end of the trigger cable to the Trigger input of a multi-channel amplifier for example. Triggers can also be utilized to turn on certain components associated with specific inputs while turning off others. 12v trigger cables are terminated with 1/8" phone jacks.



B. Configure Trigger

1. Select a button preset device to configure.
2. Choose whether one or all the triggers will be configured at once. The options are: Selective or All triggers. If the all triggers option is selected then the Mode and delay will be configured for all (4) trigger outputs for that selected button preset. If Selective is used then each trigger can be configured individually for that button preset. The selective options are Trigger 1, Trigger 2, Trigger 3 and Trigger 4.

NOTE: Trigger 1 is enabled for all button presets by default.

3. Mode sets the behavior of each specified trigger the options are:
4. Main Only – Trigger output is active for the Main zone only for the selected device.
5. Main and Zone 2 – Trigger output is active for both the Main zone and Zone 2 for the selected device.
6. Always Off –Trigger output is OFF for Main and Zone 2 for the selected device.
7. Zone 2 Only - Trigger output is active for the Zone 2 only for the selected device.

C. Delay - sets the time delay between when the device button is selected and the 12v signal is sent. This is an added feature to allow the staggering of when components turn on, this can be critical when big power amplifiers are in use. The delay setting is between 1 Second and 30 Seconds.

CONFIGURE LEVEL ADJUSTMENT

1. Overview

This section of the menu is dedicated to the fine tuning of different signal levels routed through or processed by the Evolution 707. This menu is broken into several sections focusing on specific signal requirements or decoding modes.



2. Device Trim

Device trim is a master level adjustment for all of the incoming audio signals. This tool is useful when trying to balance the overall level from input to input while switching preset buttons. The device trim range is from -15dB to +15dB in 1dB increments.

3. Analog Input Trim

An adjustment of analog input signals utilizing a clip indicator to display and adjust the incoming signal level for fine tuning. Often there are analog signals that have exceptionally high output that may overload or clip the Evolution 707's input stage. This would require the input trim or even the Anti-clip circuit.

NOTE: A Device with an analog source configured needs to be selected first in order to enable the Analog input trim function. Select the device button preset and proceed to the OSD Menu.

- A. Anti-Clip - The anti-clip function measures the signal level and prevents the input signal from overloading (clipping) the analog-to-digital converters. The Anti-clip option is ON or OFF.
- B. Input Gain – Increase or decreases the analog input signal for optimum performance. The input gain range is from -6dB to +6dB in 1dB increments. To maximize your system's signal-to-noise ratio without clipping, increase the input gain value applied to the signal until you see the clip indicator Labeled "LEFT and RIGHT" illuminate on the screen; then back the input gain value off 1 dB.

4. Music Mode Sub Trim

The music mode sub trim allows a subwoofer level adjustment for use with the custom Krell music surround or DTS surround modes. This is a permanent fine adjustment made at the device level as opposed to the main subwoofer levels set in speaker setup. These adjustments do not change the main settings. The music mode sub trim adjustment range is from -10 dB to +10dB in 1dB increments.

5. DTS Control Trim

DTS NEO surround modes take a 2 channel audio input and create 5.1 surround channels. DTS control trim allows a permanent fine adjustment of the center channel gain, as opposed to the main center levels set in speaker setup. These adjustments do not change the main settings. The DTS control trim adjustment range is from 0 dB to +5dB in 1dB increments.

6. PLII Control Trim

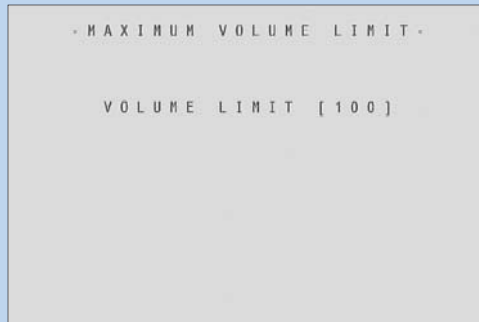
Dolby Pro Logic surround modes take a 2 channel audio input and create 5.1 surround channels. PLII control trim allows a permanent fine adjustment of center channel spread to the left and right speakers and also the amount of fade from front speaker to surround speakers. The two available adjustments are Center Width and Dimension.

Center Width - Adjust how much of the center output signal is dispersed to the left and right channel outputs. The adjustment range is from 0 (lowest) to 7 (highest, effectively mutes the center channel) in 1 dB increments.

Dimension - Adjust the fade balance between the front or rear loudspeakers, to customize the balance from all loudspeakers. The adjustment range is from 0 (Maximum surround) to 6 (Maximum front). The default setting is 4 (neutral) and adjustable in 1 dB increments.

7. Maximum Volume Limit

Adjusts the maximum system volume control limit. The maximum volume setting range is from 10 to 152. NOTE: The default maximum volume limit setting is 100.



8. Zone 2 Level

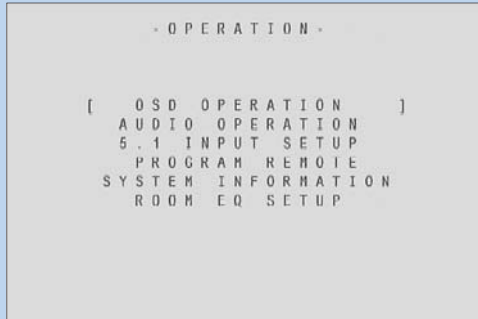
Adjusts the Zone 2 audio output for fixed or variable operation. "Variable" controls volume for the main zone as well as a second or Zone 2 audio system. "Fixed" disables volume control adjustment to the Zone 2 audio system.



OPERATION

1. Overview

The operation menu is a selection of advanced parameters to adjust the unit operation and user interface in the Evolution 707.



2. OSD Operation

- A. OSD On Time - Adjusts the amount of time the OSD stays on the active screen after a button is pushed. The OSD on time can be adjusted from 0 to 10 seconds in 1 second increments.
- B. Line Number – Adjusts the starting position of the OSD text. Every video display has variances in where displayed images are placed respectively to the viewable area. When the OSD is active it may be necessary to change where the text starts on the screen. The line number can be adjusted from 1 to 12 lines down in 1 line increments.
- C. Menu Bkgnd – Adjusts the way OSD is displayed on the video display. The options are Transparent and Solid.
 - 1. Transparent – Displays only white text over whatever image that is currently on the video display.
 - 2. Solid – Displays a blue screen with white letters masking the image on the video display.
- D. LCD Contrast – Adjusts the Contrast of the Evolution 707's front panel display. Adjust the value up or down until the display text is clearly visible from the main viewing angle. The LCD contrast can be adjusted from 1 to 32.

3. Audio Operation - Adjusts advanced Evolution 707 audio related functions.

- A. Mute Mode – Adjusts the level of attenuation used when the Mute button is depressed. The options are “Full” for complete silence when pressed and “-20dB” that will drop the level by 20 decibels passing a significantly reduced audio signal.
- B. Dolby Hold Mode – Adjusts the amount of time the Evolution 707 hangs onto a Dolby Digital signal when the bitstream is interrupted. This would be commonly used in respect to older style cable boxes to eliminate excessive noise while switching channels. Dolby hold can be adjusted from 0 to 30 seconds in 1 second intervals.
- C. DTS Mode Hold - Adjusts the amount of time the Evolution 707 hangs onto a DTS Digital signal when the bitstream is interrupted. This would be commonly used in respect to older style DVD players to eliminate excessive noise while advancing tracks. DTS hold can be adjusted from 0 to 30 seconds in 1 second intervals.
- D. EX Auto Switching – Adjusts whether the Evolution 707 recognizes Dolby EX encoded material. The options are Enable or disable.

Main Menu, Navigation and Setup Cont...

- E. Dynamic Range – Limits the dynamic content by compressing the audio signal. This setting limits the life and bass information in particular allowing higher playback levels with less dynamic contrast. This function is most helpful when used at night making it easier not to disturb people in other rooms. The settings are “Max” No compression, “Normal” 11dB of compression and “Night” 22 dB of compression. **NOTE:** The OSD will display a DYN label next to the volume setting when Dynamic Range compression is in use.
4. **5.1 Input Setup** – Adjusts the number of active channels used in the discrete 5.1 analog input. This reduces the amount of noise being introduced into the Evolution 707 insuring the best possible performance. The 5.1 Input setup options are:
- A. Active Inputs – (L R),(L C R), (L R SL SR), and (L C R SL SR)
 - B. Active SW – Yes or No.
5. **Program Remote** - A function designed to help set up a learning universal remote. It is of particular use in adding a function that is not on the Evolution 707's remote control. Follow the instructions below to begin and end the program remote function.



- A. To begin, turn the volume control to select a command. The command appears on the front panel display window.
 - B. Place the programmable remote in program mode (see the learning remote user manual).
 - C. Place the infrared sensor of the programmable remote so that it faces the infrared emitter on the Evolution 707 front panel.
 - D. Press and hold the save button on the Evolution 707 front panel until the programmable remote has learned the code (see the learning remote user manual for information on the actions required to learn code).
 - E. Select and save as many commands as required.
 - F. Press the recall button on the front panel to return to the Program Remote Screen and exit from the Program remote mode.
6. **System Information** – Displays system information about the Evolution 707. The following information is displayed:
- A. AC Line frequency – Displays which line voltage frequency is configured.
 - B. Software version – Displays the currently Installed firmware version
 - C. EE Prom version – Displays the currently installed hardware control software.

7. Room EQ Setup

A. Overview

The Evolution 707 has a built in 1/3 octave digital parametric equalizer. The equalizer is provided mostly to correct for errors in sonic presentation typically caused by speaker placement or room variables. All of the Room EQ filters use a digital implementation of the biquad filter algorithm. The biquad transfer function was digitized to implement the filters using bilinear transform, with BLT frequency warping. This scheme maintains accurate center frequencies and bandwidth. There are 24 of these filters that make up the Room EQ. Each channel in the Evolution 707 has 3 of these filters, cascaded and labeled I, II or III.

B. Memory – There are (4) memory locations for advanced EQ filters. The options for Memory are 1, 2, 3, 4 and Off.

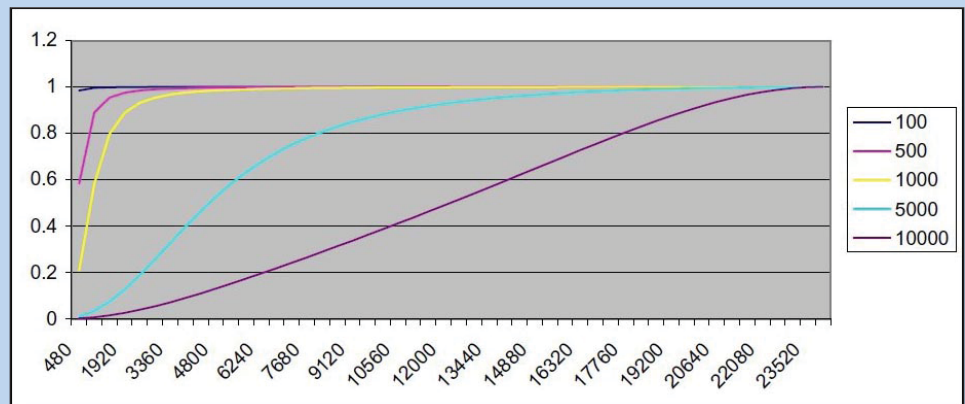
C. Channel – An EQ filter can be saved and set for any individual channel. The channel options are:

1. All - All of the channels are filtered in the same manner as specified in the Room EQ Setup Menu.
2. L, R, C, LS, RS, LB, RB or S – An Individual channel filter for a specific channel. **NOTE:** Make sure Channel is not set to "ALL" when exiting the Room EQ Menu, individual channel options will be lost.

D. Filter Parameters - There are 4 parameters that can be set for each filter:

1. Type
 - a. HPF – High Pass Filter

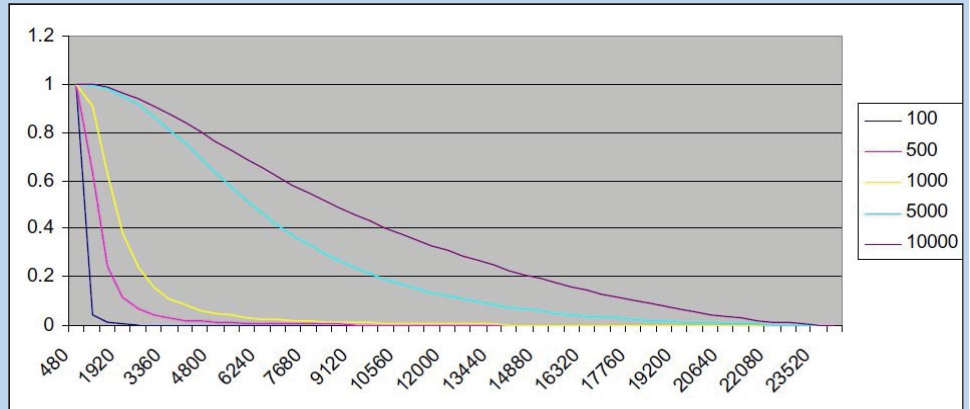
Below is a graph of the HPF. The graph also shows what happens when you change the FREQ parameter of the HPF filter. Notice how the -3 dB point changes frequency. The FREQ parameter is the only parameter you can change on the HPF.



Main Menu, Navigation and Setup Cont...

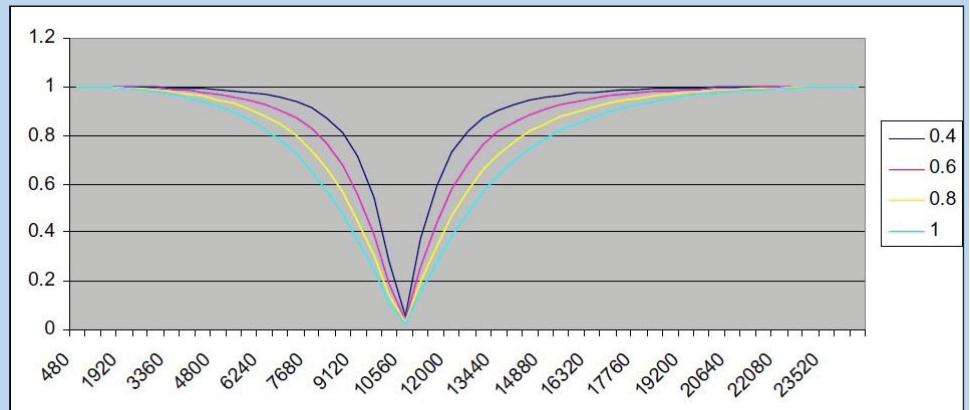
b. LPF – Low Pass Filter

Below is a graph of the LPF. The graph also shows what happens when you change the *FREQ* parameter of the LPF filter. Notice how the -3 dB point changes frequency. The *FREQ* parameter is the only parameter you can change on the HPF.



c. Notch – Notch Filter

Below is a graph of the Notch Filter. The graph also shows what happens when you change the *Shape* parameter of the Notch filter. Notice how the width of the notch changes. The *Frequency* parameter of the notch filter moves the notch across the frequency band.

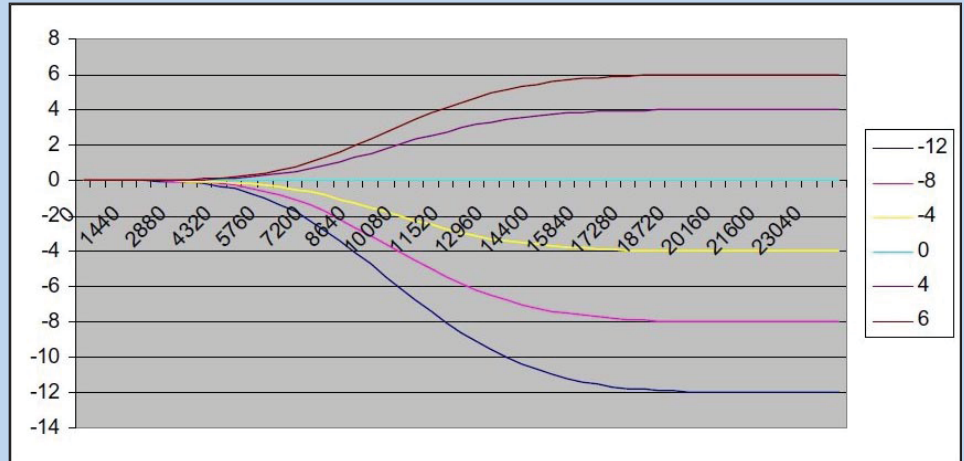


d. Lshlf – Low Shelf Filter

The Low Shelf filter is the same as the High Shelf Filter except the LEVEL parameter changes the level of the frequencies below, instead of above, the crossover point specified by the FREQ parameter.

e. Hshlf – High Shelf Filter

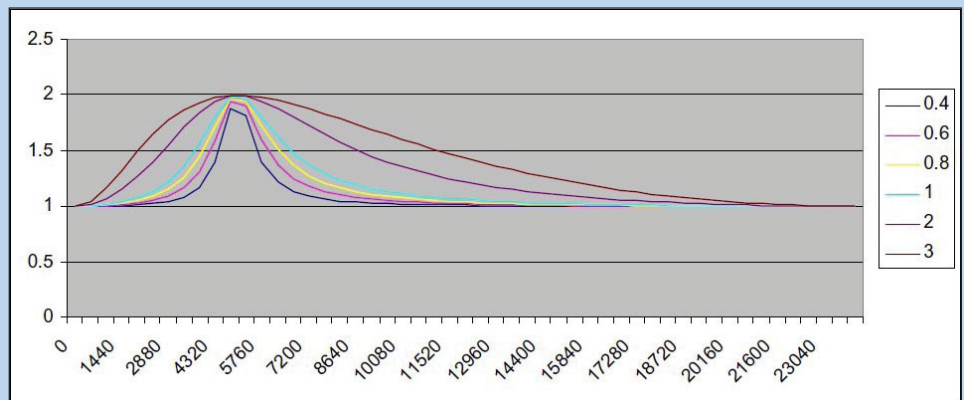
Below is a graph of the High Shelf Filter. The High Shelf Filter has two parameters that vary. The FREQ parameter changes where the crossover happens. The LEVEL parameter changes the level of the frequencies above the crossover point specified by the FREQ parameter.



f. Pking – Peaking Filter

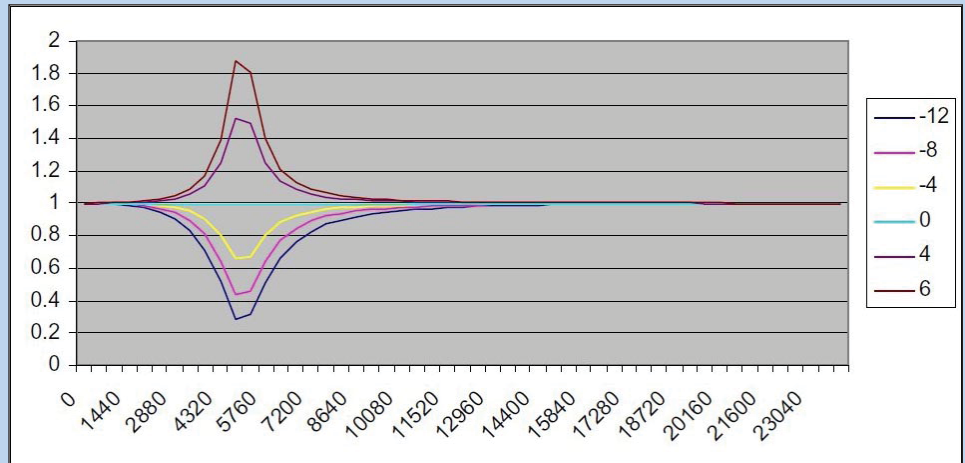
Below are two graphs of the peaking filter. The peaking filter is similar to the notch, but the peaking filter has the ability to vary the depth of the notch using the LEVEL parameter. The depth can be changed to the point that it offers boost instead of cut.

The first graph shows what happens when you change the Shape parameter of the Peaking filter with the LEVEL parameter set at +6. Notice how the width of the peak changes, if the LEVEL parameter was set negative there would be a notch instead of a peak. The Frequency parameter of the peaking filter moves the peak/notch across the frequency band.



Main Menu, Navigation and Setup Cont...

The next graph of the Peaking filter shows what happens when you change the LEVEL parameter, the SHAPE is fixed at .4 for this graph. Notice how the LEVEL can be changed to add boost or cut.



- 2. Frequency** - The Center/Cutoff Frequency can be specified for all of the filters. Thirty frequencies, up to 16K, which are the standard ISO 1/3 octave center frequencies are used as the Center/Cutoff Frequency Settings.
- 3. Shape** – The shape parameter used with the Notch and Peaking Filter, controls the bandwidth of the filter. The Shape parameter can be adjusted from 0.4 to 9.0.
- 4. Level** - The Peaking, High Shelf and Low Shelf filters require a level adjustment. The input level to the filter is reduced allowing the filter to pass full scale input at the filter's peak level without clipping the signal. The level difference is made up in the volume control so the peak of the filter is really above/below the un-filtered level and the un-filtered levels are the same as they were before filtering. Level can be adjusted from -12dB to +6dB in 1 dB increments.

Note: The Shape field is disabled for filter types HPF, LPF, LSHLF, and HSHLF. Level field is disabled for filter types HPF, LPF, and NOTCH.

- E. **Apply** – Saves the EQ parameters defined above. NOTE: Apply must be selected to make the EQ filters active. The EQ filter can be heard immediately one Apply is selected.

Basic Operation of the Evolution 707

1. Power On/ Off and Stand-by

The Evolution 707 utilizes a Stand-by mode. Stand-by effectively shuts off all input and output activity, but keeps the critical circuits operational to maximize system performance. Pressing the Power button on the front panel or the remote control toggles between the Stand-by mode and On.

Main power to the unit itself is controlled by the switch located on the back panel. When the back panel switch is used this is referred to as a hard reset.

2. Volume control

The volume knob on the Evolution 707 has numerous functions. It is first and foremost a volume control, turning the knob clockwise will raise the listening level. At the 90 mark there is an "R" located to the right of the digits, this signifies a 1 volt reference level as defined by Dolby. This setting is defined for testing purposes, however there is no harm using this setting nor does it perform any differently. The volume control knob can also be used to navigate menus while utilizing the OSD Menu and is the fastest way to set menu items like speaker distance that can require several clicks of the up or down buttons.

3. Quick level adjustment buttons

Located on the front panel or the remote control are six quick adjustment buttons. These settings are for quick level or balance trim while listening and are not permanent. Pressing the power button will reset these parameters to the default values.

- A. Center - Adjusts the center channel level up or down -10dB to +10dB in 1dB increments. Additionally, if the Center button is pressed twice it will enable a Phantom Center mode.
 - 1. Phantom center is designed to route center channel information to the Left and Right speakers, creating a center channel when there is in affect no center channel speaker.
- B. Surr - Adjusts the left and right surround channel output levels -10dB to +10dB in 1dB increments.
- C. Back - Adjusts the left and right back channel output levels -10dB to +10dB in 1dB increments.
- D. Sub - Adjusts the subwoofer channel(s) level -10dB to +10dB in 1dB increments.
- E. Bal - Adjusts the balance between left and right channels -6dB to +6dB in .5dB increments.
- F. EQ assignment - Pressing the "right arrow button" as a stand-alone button, enables the room EQ function and quick selection of the "4" available EQ presets.

4. Zone 2 Output

The Zone 2 output is a discrete second set of outputs to control a separate audio/ video system. To turn on the Second zone, while the unit is in Stand-by press the Zone button on the front panel or remote control. The Green LED will appear under the Zone button indicating you have turned on Zone 2. Once initialized all of the features and functions are operated as usual but specifically for the Second zone.

To turn off the Second zone, press the Power button.

When Zone 2 is active, pressing the Zone button again will toggle between the Main zone, indicated on the button presets and the Zone indicator with a "Red" LED and Zone 2 indicated with a "Green" LED. Pressing the Power button while in Zone 2 will turn it off and revert back to the Main zone only.

NOTE: Different inputs can be used for the Main zone and Zone 2 simultaneously.

5. Tape / VCR inputs and outputs

The TAPE and VCR inputs and outputs are specifically provided to allow recording and playback of analog audio and video sources. When the Tape or VCR input is selected, the Tape or VCR outputs are shut off so as not to allow feedback. The Tape or VCR inputs will accept the analog audio or video signals from any active and selected device.

6. Button Mode presets

The Evolution 707 front panel has a row of buttons for quick access to Surround decoding modes. The Modes Are:

- A. Pre Amp - Direct analog connection with no processing of the incoming signal.
- B. Stereo - Default mode for PCM digital input or 2-channel analog audio with processing.
- C. Mode 1 - Default mode as defined in the decode method preference. (P28, C)
- D. Mode 2 - Direct access to all available decode modes.
- E. Dolby Pro Logic - Direct access to the available Dolby Pro Logic IIx Modes.

7. Save and Recall

The configuration parameters and settings defined in the set-up menu can be saved to a default layout. Once a layout has been saved it can be recalled at anytime restoring back to the last saved working presets.

To Save a layout:

Press and Hold the **Save** button on the Front panel. The front panel display will show "Saving Setup" and return to its last activity.

To Recall a layout:

Press and Hold the **Recall** button on the Front panel. The front panel display will show "Recall Setup", the Initialization splash screen will pop up and the unit will go into Stand-by. Press the Power button, the last saved version of the layout will now be active.

8. Factory reset

The Evolution 707 has a full factory reset sequence, this will adjust all settings and parameters back to the original factory specification. To activate a factory reset:

While the unit is powered on and in the operation state, press and HOLD the Recall button on the front panel, and while holding the **Recall** button press the **Power** button on the front panel and then release.

The front panel display on the Evolution 707 will go black, the unit will turn off, and about 2 seconds later the unit will re-initialize displaying current firmware version number. All of the settings are now back to the factory defaults.

Evolution 707 Future Upgrades and Firmware

Firmware Updates

1. The Evolution 707 utilizes a software based engine. This enables firmware updates to be accomplished in the field rather than being returned to the factory. Firmware updates are sent via the RS-232 port located on the back panel.

NOTE: Firmware upgrades are to be installed by an Authorized Krell Dealer or Distributor. Special loading software and instructions are required to perform said updates. Please contact an authorized Krell Dealer, Distributor or the Factory for information regarding firmware updates.

Future Upgrades

1. **A B C D modes options (Not available at this time)**

There are (4) buttons on the Remote control and also the front panel under the front panel display. They will be enabled as quick access modes in the near future. These updates will be available via a firmware update. Please consult Krell industries for details.

2. **Mic Input (Not available at this time)**

There is a mic input on the Evolution 707 front panel used to connect the supplied instrumentation microphone. When enabled this will allow an auto setup option and basic room EQ. This update will be available via a firmware update in the near future. Please consult Krell industries for details.

RS-232 Code Set

1. Preparing for RS-232 Connectivity

The Evolution 707 can be controlled remotely via an RS-232 connection. All of the features and functions of the unit can be accessed via RS-232 command strings.

NOTE: The Evolution 707 can only recognize the “1pwrz” command while in stand-by mode. This insures that the unit is energized and ready to accept command strings. Once the unit is active, then commands can be sent. Feedback can be received when the unit is in stand-by mode.

- A. The Evolution 707 and All Krell components require a straight non-nulling RS-232 cable.

2. Settings

The RS-232 protocol settings for status and control are as follows:

9600 Baud, 8 Data Bits, 1 Stop Bit, No Parity

3. DB-9 Pin-out

- A. Data Carrier Detect
- B. Received Data
- C. Transmitted Data
- D. Data Terminal Ready
- E. Signal Ground
- F. Data Set Ready
- G. Request To Send
- H. Clear To Send
- I. Ring Indicator

Notes

- A. The decode preferences are dependant on the source data, not all formats are available to every input stream.

RS-232 Control Cont...

COMMAND	RS-232 COMMAND		
		Back speaker trim (000 - 020, sets -10 to +10 dB)	XXXBVLZ
Menu Commands		Subwoofer #1 trim (000 - 020, sets -10 to +10 dB)	XXXSVLZ
Up	UPZ	Subwoofer #2 trim (000 - 020, sets -10 to +10 dB)	XXXS2LZ
Down	DWNZ	Subwoofer #3 trim (000 - 020, sets -10 to +10 dB)	XXXS3LZ
Left	LFTZ	Subwoofer #4 trim (000 - 020, sets -10 to +10 dB)	XXXS4LZ
Right	RGTZ	Current Zone Balance Select (then use UPZ and DWNZ)	IBALZ
Menu	MENZ	Balance (000 - 026, sets right off, left +6, through right +6, left off 1/2 dB steps)	XXBALZ
Enter	ENTZ	Remote Zone Balance (then use UPZ and DWNZ)	BRLZ
Previous	PRVZ	Mute Current Zone	MUTZ
		Mute Main Zone	MUTMZ
Auto-Status Commands		Mute Remote Zone	MUTRZ
Disable Auto Status	ASTDZ	Night Compression	NTCZ
Enable Auto Status	ASTEZ	Normal Compression	NMCZ
Get Status	STAZ	Max Compression	MXCZ
Device Select Commands		Generic Zone Direct Select Commands (works on current zone)	
Dvd Device Select	DVDZ	7.1 Input select	AMCZ
DVDR Device Select	DVDRZ	Analog Audio Input-1	AS1Z
Satellite Device Select	SATZ	Analog Audio Input-2	AS2Z
VCR Device Select	VCRZ	Analog Audio Input-3	AS3Z
TV Device Select	TVZ	Analog Audio Input-4	AS4Z
CD Device Select	CDZ	Analog Audio Input-5	AS5Z
Tuner Device Select	TUNZ	Analog Audio Input-6	AS6Z
DVR Device Select	DVRZ	Analog Audio Input-7	AS7Z
Game Device Select	GAMEZ	Analog Balanced Input	AB1Z
Tape Monitor Select	TPZ	Analog Tape Select	ATPAZ
		Analog VCR Select	AVCAZ
Level Commands		Coax-1 Digital Audio Input Select	CO1Z
Up	UPZ	Coax-2 Digital Audio Input Select	CO2Z
Down	DWNZ	Coax-3 Digital Audio Input Select	CO3Z
Main Speaker Volume (000 - 152)	XXXMVLZ	Coax-4 Digital Audio Input Select	CO4Z
Remote Zone Speaker Volume (000 - 152)	XXXRVLZ	Optical-1 Digital Audio Input Select	OPT1Z
Center Trim Select (then use UPZ and DWNZ) (must be on main zone)	ICVLZ	Optical-2 Digital Audio Input Select	OPT2Z
Surround Trim Select (then use UPZ and DWNZ) (Send Twice for Back Trim Select)(must be on main zone)	IRVLZ	Optical-3 Digital Audio Input Select	OPT3Z
Sub Trim Select (then use UPZ and DWNZ)(must be on main zone)	ISUBZ	Optical-4 Digital Audio Input Select	OPT4Z
Center speaker trim (000 - 020, sets -10 to +10 dB)	XXXCVLZ		
Surround speaker trim (000 - 020, sets -10 to +10 dB)	XXXSRLZ		

RS-232 Control Cont...

Video Direct Select Commands (works on selected zone)		Main TV Device Select	TVMZ
Select Main Zone for Video Direct Select	DIMZ	Main VCR Device Select	VCRMZ
Select Zone 2 for Video Direct Select	DI2Z		
HDMI video-1	HM1Z	Remote Zone Direct Select + A72 Select Commands (use only when both zones are on)	
HDMI video-2	HM2Z	Remote Analog Audio Input-1	AS1RZ
HDMI video-3	HM3Z	Remote Analog Audio Input-2	AS2RZ
HDMI video-4	HM4Z	Remote Analog Audio Input-3	AS3RZ
Component video-1	CM1Z	Remote Analog Audio Input-4	AS4RZ
Component video-2	CM2Z	Remote Analog Audio Input-5	AS5RZ
Component video-3	CM3Z	Remote Analog Audio Input-6	AS6RZ
Composite video-1	CS1Z	Remote Analog Audio Input-7	AS7RZ
Composite video-2	CS2Z	Remote Analog Balanced Input	AB1RZ
Composite video-3	CS3Z	Remote Analog Tape Select	TPARZ
Composite video-4	CS4Z	Remote Analog VCR Select	VCARZ
S video-1	SV1Z	Remote DVR	VDRZ
S video-2	SV2Z	Remote Game	GAMRZ
S video-3	SV3Z	Remote CD	CDRZ
S video-4	SV4Z	Remote DVD	DVDRZ
		Remote DVDR	DRDRZ
Main Zone Direct Select Commands (main zone must be on)		Remote Satellite	SATRZ
Main Analog Audio Input-1	AS1MZ	Remote Tape	TPRZ
Main Analog Audio Input-2	AS2MZ	Remote Tuner	TUNRZ
Main Analog Audio Input-3	AS3MZ	Remote TV	TVRZ
Main Analog Audio Input-4	AS4MZ	Remote VCR	VCRRZ
Main Analog Audio Input-5	AS5MZ		
Main Analog Audio Input-6	AS6MZ	Power Commands	
Main Analog Audio Input-7	AS7MZ	Power On	1PWRZ
Main Analog Balanced Input	AB1MZ	Power Off	0PWRZ
Main Analog Tape Select	TPAMZ		
Main Analog VCR Select	VCAMZ	Zone Select Commands	
Main DVR Device Select	DVRMZ	Main Zone	MANZ
Main Game Device Select	GAMMZ	Remote Zone (Zone 2 Power toggle If Main Zone Is Off)	REMZ
Main CD Device Select	CDMZ		
Main DVD Device Select	DVDMZ	Room EQ Commands	
Main DVDR Device Select	VDRMZ	Room EQ Select (xxx = 000-004) (000 = off) (001-004 selects memory 1-4)	xxxEQMZ
Main Satellite Device Select	SATMZ	Trigger Commands	
Main Tape Device Select	TPMZ		
Main Tuner Device Select	TUNMZ		

RS-232 Feedback

OVERVIEW

The Evolution 707 is equipped with a system that can report back its operational status via the RS-232 port. The system reports its operational status by transmitting a block of status data. The block is configured as 18, 8 bit words. The first and last word always contains hexadecimal code 55 to facilitate message framing and synchronization. When the data block is sent through an RS-232 port, each 8 bit word transmitted will also have 1 stop bit associated with it.

The feedback system is only available via the RS-232 port. The Status can be activated in 2 ways. The first way is to ask for status to be sent by sending the RS-232 command "STAZ". The second way is to enable auto status by sending the RS-232 command "ASTEZ", Once this command is sent, the Evolution 707 will transmit a status block whenever the status changes. Auto Status is disabled by sending the RS-232 command "ASTDZ". Auto Status remains enabled until AC power is removed or turned off.

All numeric values described in the following are decimal values unless otherwise noted. The description of the eighteen 8 bit words are as follows:

WORD 1: Start of Message

Bit	7	6	5	4	3	2	1	0
	0	1	0	1	0	1	0	1

Bit 7 – 0: Hexadecimal 55

WORD 2: General Status I

Bit	7	6	5	4	3	2	1	0
	System Mute	User Mute	Zone 2 Mute	Current Zone	Input Trigger	Zone 2 Only	Zone 2 Power	Main Power

Bit 7:	System Mute	1 = Internal mute is active
Bit 6:	Main Mute	1 = Main mute is active
Bit 5:	Zone 2 Mute	1 = Zone 2 mute is active
Bit 4:	Current Zone	1 = Zone 2 is active
Bit 3:	Input Trigger	1 = 12V input trigger is active
Bit 2:	Zone 2 Only	1 = Only Zone 2 power is on
Bit 1:	Zone 2 Power	1 = Zone2 power is on
Bit 0:	Main Power	1 = Main power is on

RS-232 Feedback Cont...

WORD 3: General Status II

Bit	7	6	5	4	3	2	1	0
	Menu Mode	Auto Status Enabled	PLL Locked	Trigger 4 On	Trigger 3 On	Trigger 2 On	Trigger 1 On	DSP Running

- Bit 7: Menu mode 1 = Menu mode is active
- Bit 6: Auto Status 1 = Auto Status Enabled
- Bit 5: PLL Locked 1 = PLL is locked (Valid Digital input signal detected)
- Bit 4: Trigger 4 on 1 = Trigger 4 is on
- Bit 3: Trigger 3 on 1 = Trigger 3 is on
- Bit 2: Trigger 2 on 1 = Trigger 2 is on
- Bit 1: Trigger 1 on 1 = Trigger 1 is on
- Bit 0: DSP Running 1 = DSPs are not reset

WORD 4: Current Device

Bit	7	6	5	4	3	2	1	0
	Z2 CD3	Z2 CD2	Z2 CD1	Z2 CD0	MN CD3	MN CD2	MN CD1	MN CD0

Bits 7 - 4: Zone 2 Current Device

Bits 3 - 0: Main Zone Current Device

Devices

- 0 DVD
- 1 DVDR
- 2 SAT
- 3 VCR
- 4 TV
- 5 CD
- 6 TUNER
- 7 DVR
- 8 GAME
- 9 TAPE

WORD 5: Main Volume

Bit	7	6	5	4	3	2	1	0
	VOL 7	VOL 6	VOL 5	VOL 4	VOL 3	VOL 2	VOL 1	VOL 0

Bit 7 - 0: Current Main Volume setting 0 - 152

WORD 6: Zone 2 Volume

Bit	7	6	5	4	3	2	1	0
	VOL 7	VOL 6	VOL 5	VOL 4	VOL 3	VOL 2	VOL 1	VOL 0

Bit 7 - 0: Current Zone 2 Volume setting 0 - 152

RS-232 Feedback Cont...

WORD 7: Video Input

Bit	7	6	5	4	3	2	1	0
	VID IN 7	VID IN 6	VID IN 5	VID IN 4	VID IN 3	VID IN 2	VID IN 1	VID IN 0

Bit 7 - 0: Current Video Input

Video Inputs

- 1 S-Video 1
- 2 S-Video 2
- 3 S-Video 3
- 4 S-Video 4
- 5 Component Video 1
6. Component Video 2
7. Component Video 3
- 8 Composite Video 1
- 9 Composite Video 2
10. Composite Video 3
11. Composite Video 4
12. Composite Video 5
13. Composite Video 6
14. HDMI Video 1
15. HDMI Video 2
16. HDMI Video 3
17. HDMI Video 4

WORD 8: Main Zone Audio Input

Bit	7	6	5	4	3	2	1	0
	MN AUD IN 7	MN AUD IN 6	MN AUD IN 5	MN AUD IN 4	MN AUD IN 3	MN AUD IN 2	MN AUD IN 1	MN AUD IN 0

Bit 7 - 0: Main Zone Audio Input

Audio Inputs

- 1 Digital: COAX 1
- 2 Digital: COAX 2
- 3 Digital: COAX 3
- 4 Digital: COAX 4
- 5 Digital: Optical 1
- 6 Digital: Optical 2
- 7 Digital: Optical 3
- 8 Digital: Optical 4
- 9 HDMI SPDIF
- 10 HDMI AUTO
- 11 Analog: B1
- 12 Analog: S1

RS-232 Feedback Cont...

- 13 Analog: S2
- 14. Analog: S3
- 15 Analog: S4
- 16 Analog: S5
- 17 Analog: Tape
- 18. Analog: VCR
- 19. Analog: Cast 1
- 20. Analog: Cast 2
- 21. 5.1 Input Digital
- 22. 5.1 Input Analog Preamp

WORD 9: Zone 2 Audio Input

Bit	7	6	5	4	3	2	1	0
	Z2 AUD IN 7	Z2 AUD IN 6	Z2 AUD IN 5	Z2 AUD IN 4	Z2 AUD IN 3	Z2 AUD IN 2	Z2 AUD IN 1	Z2 AUD IN 0

Bit 7 - 0: Zone 2 Audio Input

Audio Inputs

- 11 Analog: B1
- 12 Analog: S1
- 13 Analog: S2
- 15 Analog: S3
- 15 Analog: S4
- 16 Analog: S5
- 17 Analog: Tape
- 23 Analog: VCR
- 24 Analog: Cast 1
- 25 Analog: Cast 2

WORD 10: Speakers / Current Audio Decode Mode

Bit	7	6	5	4	3	2	1	0
	Back Enabled	Sub Enabled	Surround Enabled	Center Enabled	Input Stream 3	Input Stream 2	Input Stream 1	Input Stream 0

- Bit 7: Back Enabled 1 = Back Speaker(s) is(are) enabled
- Bit 6: Sub Enabled 1 = Subwoofer is enabled
- Bit 5: Surround Enabled 1 = Surround Speakers are enabled
- Bit 4: Center Enabled 1 = Center Speaker is enabled
- Bits 3-0 Current Input Stream Mode

RS-232 Feedback Cont...

Input Stream Modes

1. PCM
2. Dolby Digital 2.0
3. Dolby Digital
4. DTS 5.1
5. 24 Bit, 96KHz PCM
6. PCM Digital Input
7. PCM Analog Input
8. Dolby Digital X/Y
9. 5.1 (6 Channel Discrete)
10. DTS 6.1 ES Matrix™
11. DTS 6.1 ES Discrete™
12. DTS 6.1 ES Matrix & Discrete™
13. DTS 2496
14. AAC 2.0
15. AAC 5.1
16. AAC XY
17. AAC 1+1
18. Multi Channel Preamp
19. HDMI IIS
20. HDMI PCM2

WORD 11: Current Audio Decode Modes

Bit	7	6	5	4	3	2	1	0
	CAD 7	CAD 6	CAD 5	CAD 4	CAD 3	CAD 2	CAD 1	CAD 0

Bit 7 - 0: Current Audio Decode Modes

	Hex	Decimal	
IF Stream ID =	6	6	PCM Digital
Stereo Mode (Pass Mode)	1	1	
Pro Logic IIx Movie Mode	2	2	
Pro Logic IIx Music Mode	3	3	
Multi-Channel Input Mode	7	7	
DTS Neo:6 Cinema 6 Mode™	9	9	
2496 decode mode	0A	10	
DTS Neo:6 Music Mode™	0B	11	
DTS Neo:6 Cinema 6 + THX Mode™	0C	12	
Party Mode	0E	14	

RS-232 Feedback Cont...

General Admission Mode	0F	15	PCM Digital CONT...
Front Row Mode	10	16	
On Stage Mode	11	17	
Enhanced Stereo Mode	12	18	
Orchestra Mode	13	19	
Mezzanine Mode	14	20	
Full Range + Sub Mode	15	21	
Monophonic Mode	16	22	
Analog only preamp mode	17	23	
IF Stream ID =	7	7	ANALOG
Stereo Mode (Pass Mode)	1	1	
Pro Logic IIx Movie Mode	2	2	
Pro Logic IIx Music Mode	3	3	
Multi-Channel Input Mode	7	7	
DTS Neo:6 Cinema 6 Mode™	9	9	
2496 decode mode	0A	10	
DTS Neo:6 Music Mode™	0B	11	
DTS Neo:6 Cinema 6 + THX Mode™	0C	12	
Party Mode	0E	14	
General Admission Mode	0F	15	
Front Row Mode	10	16	
On Stage Mode	11	17	
Enhanced Stereo Mode	12	18	
Orchestra Mode	13	19	
Mezzanine Mode	14	20	
Full Range + Sub Mode	15	21	
Monophonic Mode	16	22	
Analog only preamp mode	17	23	
IF Stream is Dolby Digital, Stream ID =	2	2	Dolby Digital
Stereo Mode (Pass Mode)	18	24	
Pro Logic IIx Movie Mode	19	25	
Pro Logic IIx Music Mode	1a	26	
IF Stream is Dolby Digital, Stream ID =	3	3	Dolby Digital
Dolby Digital	2f	47	
Dolby Digital 5.1 + PLIIx MOVIE	30	48	
Dolby Digital 5.1 + PLIIx MUSIC	b1	177	
Dolby Digital 5.1 EX	c7	199	
Dolby Digital Plus	d8	216	

RS-232 Feedback Cont...

Dolby Digital 1+1	41	65	Dolby Digital CONT...
Dolby Digital 1/0	42	66	
Dolby Digital 3/0	43	67	
Dolby Digital 2/1	44	68	
Dolby Digital 3/1	45	69	
Dolby Digital 2/2	46	70	
IF Stream is DTS, Stream ID =	4	4	DTS
DTS 5.1 Music™	35	53	
DTS 5.1 Movie™	32	50	
DTS 5.1 MATRIX™	b3	179	
DTS 5.1 DISCRETE™	b7	183	
DTS 96K 24 Bit™	48	72	
IF Stream is AAC 20, Stream ID =	E	14	AAC 2.0
AAC 2.0	4b	75	
IF Stream is AAC 51, Stream ID =	E	14	AAC 5.1
AAC 5.1	4f	79	
IF Stream is AAC 11, Stream ID =	11	17	AAC 1+1
AAC 1+1	4a	74	
AAC 1L1	55	85	
AAC 1R1	56	86	
IF Stream is AAC XY, Stream ID =	10	16	AAC XY
AAC 1/0	58	88	
AAC 3/0	4c	76	
AAC 3/1	4d	77	
AAC 3/2	4e	78	
AAC 7.1	50	80	
IF Stream is HDMI, Stream ID =	13	19	HDMI Auto
HDMI PCM 2 Channel	D8	216	
HDMI PCM 5.1 Channel	DD	221	
HDMI PCM 7.1 Channel	DE	222	
Dolby TrueHD 48K	D9	217	
Dolby TrueHD 96K	DA	218	
Dolby Digital Plus	DB	219	
DTS MA™	DC	220	
DTS HRA™	DF	223	

RS-232 Feedback Cont...

DTS LBR™	E0	224	
IF Stream ID =	14	20	HDMI SPDIF
Stereo Mode (Pass Mode)	1	1	
Pro Logic IIx Movie Mode	2	2	
Pro Logic IIx Music Mode	3	3	
Multi-Channel Input Mode	7	7	
DTS Neo:6 Cinema 6 Mode™	9	9	
2496 decode mode	0A	10	
DTS Neo:6 Music Mode™	0B	11	
DTS Neo:6 Cinema 6 + THX Mode™	0C	12	
Party Mode	0E	14	
General Admission Mode	0F	15	
Front Row Mode	10	16	
On Stage Mode	11	17	
Enhanced Stereo Mode	12	18	
Orchestra Mode	13	19	
Mezzanine Mode	14	20	
Full Range + Sub Mode	15	21	
Monophonic Mode	16	22	
Analog only preamp mode	17	23	

WORD 12: Main Zone Balance / Compression Mode

Bit	7	6	5	4	3	2	1	0
	Reserved	Cmode 1	Cmode 0	BAL 4	BAL 3	BAL 2	BAL 1	BAL 0

Bits 4 - 0: Balance Setting 0 – 26

Bits 5 - 6: Compression Mode

Balance Settings

0	Right Off	9	Left +2.0	18	Right +2.5
1.	Left +6	10	Left +1.5	19	Right +3.0
2.	Left +5.5	11	Left +1.0	20	Right +3.5
3.	Left +5.0	12	Left +0.5	21	Right +4.0
4.	Left +4.5	13	Centered	22	Right +4.5
5.	Left +4.0	14	Right +0.5	23	Right +5.0
6.	Left +3.5	15	Right +1.0	24	Right +5.5
7.	Left +3.0	16	Right +1.5	25	Right +6.0
8.	Left +2.5	17	Right +2.0	26	Left Off

Compression Modes

1. Max
2. Normal
3. Night

RS-232 Feedback Cont...

WORD 13: Room EQ/Zone 2 Balance

Bit	7	6	5	4	3	2	1	0
	Room EQ 2	Room EQ 1	Room EQ 0	BAL 4	BAL 3	BAL 2	BAL 1	BAL 0

Bit 7 - 5: Room EQ Setting

Room EQ Setting

0	Room EQ OFF
1	Room EQ Memory 1
2	Room EQ Memory 2
3	Room EQ Memory 3
4	Room EQ Memory 4

Bits 4 - 0: Balance Setting 0 – 26

Balance Settings

0	Right Off	9	Left +2.0	18	Right +2.5
9	Left +6	10	Left +1.5	19	Right +3.0
10	Left +5.5	11	Left +1.0	20	Right +3.5
11	Left +5.0	12	Left +0.5	21	Right +4.0
12	Left +4.5	13	Centered	22	Right +4.5
13	Left +4.0	14	Right +0.5	23	Right +5.0
14	Left +3.5	15	Right +1.0	24	Right +5.5
15	Left +3.0	16	Right +1.5	25	Right +6.0
16	Left +2.5	17	Right +2.0	26	Left Off

WORD 14: Center Trim

Bit	7	6	5	4	3	2	1	0
	Reserved	Reserved	Reserved	CT 4	CT 3	CT 2	CT 1	CT 0

Bits 4 - 0: Center Trim

Trim Settings

0	-10 dB	6	-4 dB	12	+2 dB	18	+8 dB
1	-9 dB	7	-3 dB	13	+3 dB	19	+9 dB
2	-8 dB	8	-2 dB	14	+4 dB	20	+10 dB
3	-7 dB	9	-1 dB	15	+5 dB		
4	-6 dB	10	0 dB	16	+6 dB		
5	-5 dB	11	+1 dB	17	+7 dB		

RS-232 Feedback Cont...

WORD 15: Surround Trim

Bit	7	6	5	4	3	2	1	0
	Reserved	Reserved	Reserved	RT 4	RT 3	RT 2	RT 1	RT 0

Bits 4 - 0: Surround Trim

Trim Settings

0	-10 dB	6	-4 dB	12	+2 dB	18	+8 dB
1	-9 dB	7	-3 dB	13	+3 dB	19	+9 dB
2	-8 dB	8	-2 dB	14	+4 dB	20	+10 dB
3	-7 dB	9	-1 dB	15	+5 dB		
4	-6 dB	10	0 dB	16	+6 dB		
5	-5 dB	11	+1 dB	17	+7 dB		

WORD 16: Back Trim

Bit	7	6	5	4	3	2	1	0
	Reserved	Reserved	Reserved	BT 4	BT 3	BT 2	BT 1	BT 0

Bits 4 - 0: Back Trim

Trim Settings

0	-10 dB	6	-4 dB	12	+2 dB	18	+8 dB
1	-9 dB	7	-3 dB	13	+3 dB	19	+9 dB
2	-8 dB	8	-2 dB	14	+4 dB	20	+10 dB
3	-7 dB	9	-1 dB	15	+5 dB		
4	-6 dB	10	0 dB	16	+6 dB		
5	-5 dB	11	+1 dB	17	+7 dB		

WORD 17: Sub Trim

Bit	7	6	5	4	3	2	1	0
	Reserved	Reserved	Reserved	ST 4	ST 3	ST 2	ST 1	ST 0

Bits 4 - 0: Sub Trim

Trim Settings

0	-10 dB	6	-4 dB	12	+2 dB	18	+8 dB
1	-9 dB	7	-3 dB	13	+3 dB	19	+9 dB
2	-8 dB	8	-2 dB	14	+4 dB	20	+10 dB
3	-7 dB	9	-1 dB	15	+5 dB		
4	-6 dB	10	0 dB	16	+6 dB		
5	-5 dB	11	+1 dB	17	+7 dB		

WORD 18: End of Message

Bit	7	6	5	4	3	2	1	0
	0	1	0	1	0	1	0	1

Bit 7 – 0: Hexadecimal 55

RC-5 Control

RC-5 Control

RC-5 Code Set

1. Preparing for RC-5 Connectivity

The Evolution 707 can be controlled using RC-5 remote control communication protocol. All of the remote control functions as well as the majority of internal functions can be accessed via RC-5 communication. The Evolution 707 is designed to receive un-modulated data only. The input does supply power(+5v) to be used with several IR receiving devices.

NOTE: When the RC-5 IR receiver port is in use, the front panel IR receiver is disabled.

2. Settings

Settings will vary for different remote devices, the table below describes code sets commonly used for popular remote control systems.

3. RC-5 Cable Pin-out

A stereo tip, ring, sleeve 1/8" mini connector is used in the following configuration:

Tip = RC-5 data, Ring = +5 V, Sleeve = GND.

RC-5 Control Cont...

COMMAND	System (Hex)	Command (Hex)	System (Dec)	Command (Dec)	RC5 Word (Hex)	CCF Codes
Sub	1C	1	28	1	3701	5000 0000 0000 0001 001C 0001
Rear	1C	2	28	2	3702	5000 0000 0000 0001 001C 0002
Back	1C	3	28	3	3703	5000 0000 0000 0001 001C 0003
Center	1C	6	28	6	3706	5000 0000 0000 0001 001C 0006
Mute	1C	7	28	7	3707	5000 0000 0000 0001 001C 0007
Down	1C	B	28	11	370B	5000 0000 0000 0001 001C 000B
Menu	1C	C	28	12	370C	5000 0000 0000 0001 001C 000C
Right	1C	D	28	13	370D	5000 0000 0000 0001 001C 000D
Enter	1C	E	28	14	370E	5000 0000 0000 0001 001C 000E
Left	1C	F	28	15	370F	5000 0000 0000 0001 001C 000F
Tape	1C	10	28	16	3710	5000 0000 0000 0001 001C 0010
Up	1C	11	28	17	3711	5000 0000 0000 0001 001C 0011
Prev	1C	12	28	18	3712	5000 0000 0000 0001 001C 0012
EQ Off	1C	14	28	20	3714	5000 0000 0000 0001 001C 0014
EQ Memory 1	1C	15	28	21	3715	5000 0000 0000 0001 001C 0015
EQ Memory 2	1C	16	28	22	3716	5000 0000 0000 0001 001C 0016
EQ Memory 3	1C	17	28	23	3717	5000 0000 0000 0001 001C 0017
EQ Memory 4	1C	18	28	24	3718	5000 0000 0000 0001 001C 0018
Multi-Channel	1C	19	28	25	3719	5000 0000 0000 0001 001C 0019
Balance	1C	1A	28	26	371A	5000 0000 0000 0001 001C 001A
B1	1C	1B	28	27	371B	5000 0000 0000 0001 001C 001B
S1	1C	1C	28	28	371C	5000 0000 0000 0001 001C 001C
S2	1C	1D	28	29	371D	5000 0000 0000 0001 001C 001D
S3	1C	1E	28	30	371E	5000 0000 0000 0001 001C 001E
S4	1C	1F	28	31	371F	5000 0000 0000 0001 001C 001F
S5	1C	20	28	32	3720	5000 0000 0000 0001 001C 0020
COAX1	1C	21	28	33	3721	5000 0000 0000 0001 001C 0021
COAX2	1C	22	28	34	3722	5000 0000 0000 0001 001C 0022
OPT1	1C	23	28	35	3723	5000 0000 0000 0001 001C 0023
OPT2	1C	24	28	36	3724	5000 0000 0000 0001 001C 0024
OPT3	1C	25	28	37	3725	5000 0000 0000 0001 001C 0025
OPT4	1C	26	28	38	3726	5000 0000 0000 0001 001C 0026
Tape On	1C	27	28	39	3727	5000 0000 0000 0001 001C 0027
Tape Off	1C	28	28	40	3728	5000 0000 0000 0001 001C 0028
S-Video1	1C	29	28	41	3729	5000 0000 0000 0001 001C 0029
S-Video2	1C	2A	28	42	372A	5000 0000 0000 0001 001C 002A
S-Video3	1C	2B	28	43	372B	5000 0000 0000 0001 001C 002B
S-Video4	1C	2C	28	44	372C	5000 0000 0000 0001 001C 002C
Composite1	1C	2D	28	45	372D	5000 0000 0000 0001 001C 002D
Composite2	1C	2E	28	46	372E	5000 0000 0000 0001 001C 002E
Composite3	1C	2F	28	47	372F	5000 0000 0000 0001 001C 002F
Zone 2 VOL +10	1C	31	28	49	3731	5000 0000 0000 0001 001C 0031
Zone 2 VOL -10	1C	32	28	50	3732	5000 0000 0000 0001 001C 0032
Music1	1C	33	28	51	3733	5000 0000 0000 0001 001C 0033
Stereo	1C	35	28	53	3735	5000 0000 0000 0001 001C 0035
Zone 2 VOL Zero	1C	36	28	54	3736	5000 0000 0000 0001 001C 0036
Main Vol Zero	1C	37	28	55	3737	5000 0000 0000 0001 001C 0037
PWR ON	1C	38	28	56	3738	5000 0000 0000 0001 001C 0038
PWR OFF	1C	39	28	57	3739	5000 0000 0000 0001 001C 0039
Mute On	1C	3A	28	58	373A	5000 0000 0000 0001 001C 003A
Mute Off	1C	3B	28	59	373B	5000 0000 0000 0001 001C 003B
Main VOL +10	1C	3C	28	60	373C	5000 0000 0000 0001 001C 003C
Main VOL -10	1C	3D	28	61	373D	5000 0000 0000 0001 001C 003D
Pro Logic	1C	3E	28	62	373E	5000 0000 0000 0001 001C 003E
Music2	19	0	25	0	3640	5000 0000 0000 0001 0019 0000
DVD	19	1	25	1	3641	5000 0000 0000 0001 0019 0001
DVDR	19	2	25	2	3642	5000 0000 0000 0001 0019 0002

RC-5 Control Cont...

SAT	19	3	25	3	3643	5000 0000 0000 0001 0019 0003
VCR	19	4	25	4	3644	5000 0000 0000 0001 0019 0004
TV	19	5	25	5	3645	5000 0000 0000 0001 0019 0005
CD	19	6	25	6	3646	5000 0000 0000 0001 0019 0006
Tuner	19	7	25	7	3647	5000 0000 0000 0001 0019 0007
DVR	19	8	25	8	3648	5000 0000 0000 0001 0019 0008
GAME	19	9	25	9	3649	5000 0000 0000 0001 0019 0009
Main Zone	19	A	25	10	364A	5000 0000 0000 0001 0019 000A
Rem Zone	19	B	25	11	364B	5000 0000 0000 0001 0019 000B
VCR Input	19	D	25	13	364D	5000 0000 0000 0001 0019 000D
TAPE Input	19	E	25	14	364E	5000 0000 0000 0001 0019 000E
COMPONENT3	19	F	25	15	364F	5000 0000 0000 0001 0019 000F
COMPONENT1	19	10	25	16	3650	5000 0000 0000 0001 0019 0010
COMPONENT2	19	11	25	17	3651	5000 0000 0000 0001 0019 0011
COAX3	19	12	25	18	3652	5000 0000 0000 0001 0019 0012
COAX4	19	13	25	19	3653	5000 0000 0000 0001 0019 0013
TRIGGER1 On	19	16	25	22	3656	5000 0000 0000 0001 0019 0016
TRIGGER1 Off	19	17	25	23	3657	5000 0000 0000 0001 0019 0017
TRIGGER2 On	19	18	25	24	3658	5000 0000 0000 0001 0019 0018
TRIGGER2 Off	19	19	25	25	3659	5000 0000 0000 0001 0019 0019
TRIGGER3 On	19	1A	25	26	365A	5000 0000 0000 0001 0019 001A
TRIGGER3 Off	19	1B	25	27	365B	5000 0000 0000 0001 0019 001B
TRIGGER4 On	19	1C	25	28	365C	5000 0000 0000 0001 0019 001C
TRIGGER4 Off	19	1D	25	29	365D	5000 0000 0000 0001 0019 001D
Z2 PWR On	19	1E	25	30	365E	5000 0000 0000 0001 0019 001E
Z2 PWR Off	19	1F	25	31	365F	5000 0000 0000 0001 0019 001F
Pre Amp	19	23	25	35	3663	5000 0000 0000 0001 0019 0023
SELECT Z2 Direct	19	26	25	38	3666	5000 0000 0000 0001 0019 0026
SELECT MAIN Direct	19	27	25	39	3667	5000 0000 0000 0001 0019 0027
Max Dynr	19	28	25	40	3668	5000 0000 0000 0001 0019 0028
Night Dynr	19	29	25	41	3669	5000 0000 0000 0001 0019 0029
Norm Dynr	19	2A	25	42	366A	5000 0000 0000 0001 0019 002A
SOFTKEY A	19	2B	25	43	366B	5000 0000 0000 0001 0019 002B
SOFTKEY B	19	2C	25	44	366C	5000 0000 0000 0001 0019 002C
SOFTKEY C	19	2D	25	45	366D	5000 0000 0000 0001 0019 002D
SOFTKEY D	19	2E	25	46	366E	5000 0000 0000 0001 0019 002E
DIGIT 0	19	30	25	48	3670	5000 0000 0000 0001 0019 0030
DIGIT 1	19	31	25	49	3671	5000 0000 0000 0001 0019 0031
DIGIT 2	19	32	25	50	3672	5000 0000 0000 0001 0019 0032
DIGIT 3	19	33	25	51	3673	5000 0000 0000 0001 0019 0033
DIGIT 4	19	34	25	52	3674	5000 0000 0000 0001 0019 0034
DIGIT 5	19	35	25	53	3675	5000 0000 0000 0001 0019 0035
DIGIT 6	19	36	25	54	3676	5000 0000 0000 0001 0019 0036
DIGIT 7	19	37	25	55	3677	5000 0000 0000 0001 0019 0037
DIGIT 8	19	38	25	56	3678	5000 0000 0000 0001 0019 0038
DIGIT 9	19	39	25	57	3679	5000 0000 0000 0001 0019 0039
SET MODE	19	3A	25	58	367A	5000 0000 0000 0001 0019 003A
HDMI 1	19	3B	25	59	367B	5000 0000 0000 0001 0019 003B
HDMI 2	19	3C	25	60	367C	5000 0000 0000 0001 0019 003C
HDMI 3	19	3D	25	61	367D	5000 0000 0000 0001 0019 003D
Factory Test Mode	19	3E	25	62	367E	5000 0000 0000 0001 0019 003E
HDMI 4	19	3F	25	63	367F	5000 0000 0000 0001 0019 003F

Questions and Answers

Q: When I play a blu-ray disc, the front panel display of the Evolution 707 reads Dolby IIx instead of TrueHD how do I get the right decode mode?

A: When you see Dolby IIx appear on the front panel display, this means the Evolution 707 is receiving LPCM data. This can be because:

1. The output is connected via optical or coaxial S/PDIF cables and the Blu-ray machine is set to output 2 channel PCM
2. The Blu-ray machine has a menu setting that makes all Bitstream formats LPCM. Consult the blu-ray machine owner's manual for set up specifics.
3. The setup for the Blu-ray disk is set to LPCM output.

Q: When I change channels on my TV cable box, the audio and video have to reset every time. How do I make this stop?

A: This is caused by the cable box changing audio and video data for each channel. The Evolution 707 has to re-sync each time causing a delay. The best course of action for this is to set the cable box up for a fixed video output, as opposed to variable. This will keep the video constant and only change audio when the signal has changed.

Q: After connecting and calibrating the system, I no longer have center channel information coming out of the speaker. What have I done wrong?

A: The very first thing to check in any potential channel failure is the connection to the power amplifiers from the processor and then amplifiers to speakers. If all seems to be in working order check to see if the Evolution 707 is in "Phantom Center" mode, this can be enabled by pressing the "center" quick select button twice which will disable the physical center channel and redirect center information to the left and right speakers.

Q: When I play a standard DVD on my Blu-ray machine the video works fine, but when I try and play a Blu-ray disc the video keeps dropping out. How can I fix this annoying problem?

A: There are a number of possible causes for this type of problem, a few common examples are listed below:

1. The HDMI video output of the Blu-ray machine is set to an output format your video monitor or projector can not accept. Standard DVD can output up to 1080i, but a Blu-ray disc can output up to 1080P which may be too much for your video display. Try changing the video output resolution.
2. The HDMI cable connecting the Blu-Ray machine to the Processor or the HDMI cable to the video display from the processor is not of sufficient bandwidth to carry the High resolution audio and video signals. Consult your dealer to make sure the HDMI cables used are correct for your application.
3. The Software for your Blu-ray machine is not up to date and requires the latest version.

Q: I have connected my SACD player to the Evolution 707 via HDMI and do not get any sound.

A: The Evolution 707 does not support the Digital DSD standard over HDMI. Utilize the discrete analog 5.1 input for best performance.

Warranty

This Krell product has a limited warranty of five years for parts and labor on circuitry from date of purchase or six years from date of original shipment from the Krell factory. Should this 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.

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

The warranty on this page 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 this 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 this 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 unit is within the warranty period must be presented to obtain warranty service. The warranty begins on the date of retail purchase, as noted on the bill of sale or receipted invoice from an authorized Krell dealer or distributor.

The warranty for Krell products is valid only in the country to which they were 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 a unit 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 unit 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 units 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 unit. Replacement parts and/or products will be furnished only to the distributor performing service on this unit 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 unit will void the warranty.

[The operating voltage of this unit 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

Return Authorization Procedure

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: www.krellonline.com

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.
3. 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.

NOTE: 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.

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

To Contact the Krell Service Department:

Telephone 203-799-9954 Monday-Friday, 9:00 am to 5:00 pm EST

Fax 203-799-9796

E-Mail service@krellonline.com

World Wide Web <http://www.krellonline.com>

EVOLUTION 707 Owner's Reference Addendum

Automatic Room Equalization Setup (ARES)

Version 1.0 March 2010



KRELL
THE LEADER IN AUDIO ENGINEERING

Introduction

Automatic setup is now available in the Evolution 707. The new Krell Automatic Room Equalization System (ARES) analyzes the speakers' capability, position, phase and distance relationships to determine ideal crossover points, delay, and volume settings. Listening room surfaces, speaker positioning and construction play a pivotal role in the overall sound quality of a system. ARES measures these effects against the inherent performance of the system's speakers and corrects for irregular surfaces, problematic speaker locations, and unusual floor plans. Using the included calibration microphone, the ARES will automatically determine the location and capability of the system's speakers and optimize them to work ideally in the room they are located. System memories allow multiple setup configurations for different musical styles, seating positions, and speaker configurations. For older Evolution 707 units, new firmware must be loaded into the unit. Please contact Krell for help in performing this operation. Please read this document to learn how to take full advantage of them.

System Memories

Three system memories have been added to the Evolution 707. Each of the three system memories save the following information:

- Speaker Configuration - includes number of speakers, speakers' crossover frequency, speaker distances, and speaker offset levels.
- Desired Manual/Auto EQ default
- Auto EQ Settings from calibration sequence

Notes:

The three system memories can be set up automatically using automatic setup or manually using the menu system.

Auto EQ settings can only be set up automatically.

Manual EQ is configured using the menu system via the OPERATION MENU page.

There are multiple ways to select one of the three system memories for use.

- The Device Menu
- The "A" button on the remote control
- The Remote Right arrow key
- The Menu System
- RS232 Control
- RC5 Control

Use the Remote "Left" Key to enable/disable the current EQ.

ARES Operation

ARES sends test signals to the speakers and uses the included microphone to receive the resulting speaker output. An internal 32 bit dual core processor in the Evolution 707 evaluates the incoming information to determine the optimal settings for the various parameters. It is normal for the test signals to vary in volume and tone, and move from speaker to speaker.

Follow these steps to start the Automatic Setup.

1. Connect the supplied microphone to the microphone cable. ***Be sure that the microphone cable has a blue sheath at the Evolution 707 end***, this indicates the correct cable. Do not use any cable but the supplied cable, which has a special network inside to optimize measurements with the Evolution 707.
2. Connect the microphone cable to Evolution 707 front panel jack labeled mic.
3. Place the microphone, pointing upwards, in the desired measurement location. The microphone can be placed in a different location for each of the three system memories. Alternatively, one position may be used with three different speaker configurations or EQ settings. The Automatic Setup requires the use of a video monitor to display the Evolution 707 menu.
4. Set the video monitor to the input that the Evolution 707 video output is connected.
5. Press the menu button to enter the MAIN MENU.
6. Move the cursor to LISTENING ROOM SETUP and press enter.
7. Under Active Setup, the Cursor rests on the active MEMORY. Choose one of the three system memories by pressing enter and scrolling up or down. Press enter to select the desired memory. This memory selection is active and any changes will immediately cause a change to the system.
8. Move the cursor down to AUTOMATIC SETUP / EQ.
9. Press enter to enter the AUTOMATIC SETUP / EQ MENU.
10. The cursor rests on SELECT EQ, Choose one of the EQ settings, AUTO, NONE, or MANUAL 1-4, by pressing enter and scrolling up or down. Press enter to select the desired EQ.
11. This EQ will be applied to the system memory selected in step 7 and directs the system to perform an Auto Equalization calibration if AUTO is selected along with the Automatic Setup. If NONE or any of the MANUAL EQ options is selected, the

- Automatic EQ will not be used in the current system memory and will not be run during Automatic Setup.
12. If AUTO is selected in step 11, additional options are available. The Auto EQ Range options include FULL RANGE, < 63 Hz, < 80 Hz, < 125 Hz, and < 250Hz. Select the frequency range desired for the Auto EQ calibration to operate. FULL RANGE directs the Auto EQ to achieve a flat frequency response for the entire frequency range. For results that only address lower frequency concerns, select one of the bass frequencies available. The Auto EQ will provide a flat frequency response below the selected frequency and leave the frequencies above the selected frequency untouched.
 13. AUTO EQ also provides two additional EQ curves. Regardless of this setting, the Auto EQ first calculates a flat frequency response. Select FLAT if that is the desired result. Based on the FLAT result, MOVIE may be selected for a curve appropriate for movie listening or MUSIC for music listening. CURVE options may be changed without having to rerun the Auto EQ calibration.
 14. Select RUN AUTO-SETUP WITH EQ or RUN AUTO-EQ ONLY. If RUN AUTO-EQ ONLY is selected, the system uses the current settings for speakers, speaker distance, and speaker calibration.
 15. On screen messages will detail progress of the Automatic Setup process.
 16. Press ENTER at any time to abort the test. If you abort the test, you will have to do a manual setup, or re-run the auto setup.
 17. If the Automatic Setup software determines a speaker is found to be out of phase, a message will be displayed. Press ENTER to continue or wait 30 seconds for the test to resume. You can re-run the test after the speaker phase issue is addressed.

Manual / View Setup

In addition to Automatic setup, Manual/View Setup is available to manually input values for the individual parameters or change values that the Automatic Setup has chosen. The Manual/View Setup requires the use of a video monitor to display the Evolution 707 menu.

1. Set the video monitor to the input that the Evolution 707 video output is connected.
2. Press the menu button to enter the MAIN MENU.
3. Move the cursor to LISTENING ROOM SETUP and press enter.
4. Under Active Setup, the Cursor rests on the active MEMORY. Choose one of the three system memories by pressing enter and scrolling up or down. Press enter to select the desired memory. This memory selection is active and any changes will immediately cause a change to the system.
5. Move the cursor down to EDIT CURRENT SETTINGS.
6. Press enter to enter the MANUAL SETUP MENU.
7. Configure the system as outlined in the main Owner's Reference.

Note: If the Auto-EQ is enabled for a System memory and a manual edit is made, the Auto-EQ is disabled and must be re-run with the new speaker configuration.

New Onscreen Display

The onscreen display has been enhanced to show memory and EQ settings.

Old Display

EQ VOLUME 090R DYN

New Display

MEM1 MOV VOL 090R DR

System Memory Field

The System Memory field displays the currently active system memory - MEM1, MEM2, or MEM3.

Equalizer Curve Field

The Equalizer Curve field displays the currently active auto equalizer curve - MOV (movie), FLT (flat), or MUS (music) or the currently active manual equalizer - EQ1, EQ2, EQ3, or EQ4
Note: This field is blank if no equalizer curve is engaged.

Volume Field

The Volume field displays the current volume level. VOL 090 is followed by an "R" indicating the volume is at the Dolby reference level.

Dynamic Range Field

DR indicates that the dynamic range is set to the Normal or Night mode, the dynamic range field is blank when the dynamic range is set to Max. See the main Owner's Reference for further information on setting Dynamic Range.