

EC-300

OPERATORS MANUAL

The Snell Acoustics EC-300 Electronic Crossover Operating Instructions

Congratulations on your choice of the Snell EC-300 Electronic Crossover. This compact three channel electronic crossover has been designed to facilitate a modular approach to multiple speaker home entertainment system development and upgrades. Engineered to precise acoustical standards, the Snell EC-300 makes possible the seamless integration of subwoofers with front speakers for true audiophile system performance, whether the listening goal be delicate two channel stereo music reproduction, or the rousing blast of lifelike cinematic performance in thrilling multichannel surround sound.

I. INTRODUCTION

The Snell EC-300 high order filters are designed not only to provide a completely integrated transition between front speakers and subwoofers, but also to prevent upper bass leakage into the subwoofer and deep bass leakage into the satellite speakers. In this manner, the Snell EC-300 avoids the common problems which plague most home theater receivers and processors using inexpensive low order crossover filters, eliminating both unwanted localization of the subwoofers and muddy bass performance which will substantially compromise the accuracy, musicality, and realism of the resulting performance.

The EC-300's low-pass filters cross over at 80 Hz with a steep 24 dB per octave slope to block any sound that might localize the subwoofers. The high-pass filters cross over at 80 Hz with a 12 dB per octave slope designed to complement the natural roll off of the satellite speakers. There are adjustable level controls for each channel and a front-panel "Cinema Compensation" switch that provides an optional correction for the emphasized high-frequencies found on virtually all video releases, (licensed under authorization from Lucasfilm). The EC-300 has gold-plated RCA input jacks for the left, center and right channels, and gold-plated RCA output jacks for left, center, right high pass, left and right low pass and summed-mono low pass.

By focusing on the quality of the components used in the signal path, the total isolation of the power supply, and by avoiding unnecessary frills and features, the EC-300 delivers the high level of performance and functionality that audiophiles demand. All amplifier stages operate in pure Class A mode to preserve the absolute integrity of the audio signal. Additionally, precision metal film resistors and film capacitors, and top quality gold plated connectors are used exclusively in these circuits.

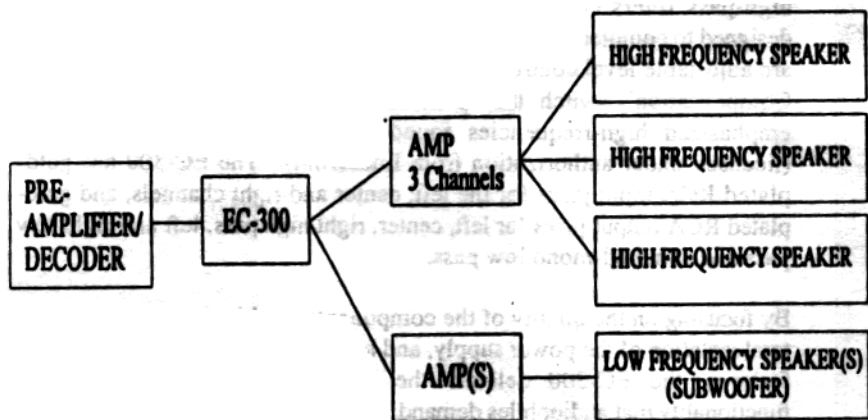
Extensive precautions have been taken to minimize noise and distortion.

The output stages use buffered unity-gain amplifiers to reduce interaction with cables and associated electronics. An external high-current, low impedance power supply is used to physically separate this device from the audio components, while sophisticated circuitry provides precision voltage regulation and isolation from within the crossover itself.

The levels of performance offered by this product are remarkable. Hum and noise is more than 96 dB below the signal level and the total harmonic distortion is less than 0.01 percent from 20 to 20,000 Hz.

The Snell Acoustics EC-300 electronic crossover is designed to support subwoofer-satellite home theater systems, specifically those based on the Snell Type K/IIv and LCR/subwoofer systems and enables the use of non-THX certified signal decoders with Snell and other THX loudspeaker systems.

II. SYSTEM CONFIGURATION UTILIZING THE EC-300



III. OPERATING THE EC-300

The EC-300 is always on when the AC cord is plugged into a live 110 volt socket. For practical reasons, it is designed to be left turned "on". However, if you must have it turn "on" and "off" with your system, plug the AC cord into one of the "switched" outlets on your pre-amp.

The outputs from the signal decoder are connected to the "Left, Center, and Right" input jacks. Outputs to the amplifiers for low and high frequency signals are connected to their respective amplifiers from the "High" and "Low" outputs for right and left channels and "High" for the center channel. The "Summed Low Out" combines the low pass signals from all three channels to permit the use of a single sub-woofer. In this configuration, the "Summed Low Out" will be connected to a single amplifier channel which is in then connected to a single sub-woofer. The EC-300 is set-up and balanced for amplifiers of identical sensitivities when it leaves the factory. If non-identical amplifiers are used, the "High" and "Low" balance may be adjusted by the "Level Controls" on the bottom of the crossover for correct tonal balance.

When connecting to a 5 channel surround receiver, the pre-amp outputs are connected to EC-300. The high and low outputs of the EC-300 are connected to the main (poweramp) input jacks of the receiver, and from these to the speakers.

IV. SYSTEM SET-UP

Set up the high pass speakers for optimum imaging from your primary seating area. (Refer to loudspeaker owner's manual.)

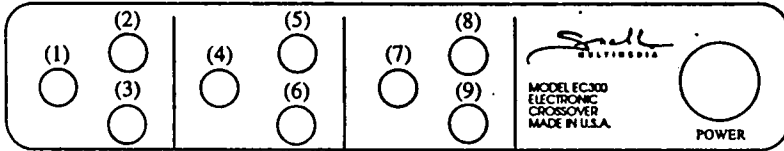
2. Set up the sub-woofers to obtain smoothest response. (Refer to subwoofer owner's manual.)
3. Due to its extremely low output impedance, the EC-300 will easily drive long interconnects for installations where amplifiers are placed near the speakers.

- (2) □ FLAT
- CINEMA
- ▴ COMPENSATION



FRONT

- (1) POWER INDICATOR
- (2) CINEMA COMPENSATION SWITCH

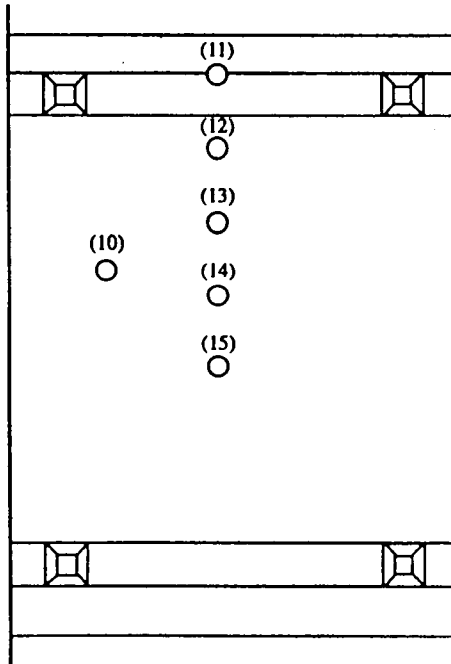


BACK

- (1) INPUT - LEFT CHANNEL
- (2) OUTPUT - LEFT HIGH FREQUENCY
- (3) OUTPUT - LEFT LOW FREQUENCY
- (4) INPUT - CENTER CHANNEL
- (5) OUTPUT - CENTER HIGH FREQUENCY
- (6) OUTPUT - SUMMED LOW FREQUENCY
- (7) INPUT - RIGHT CHANNEL
- (8) OUTPUT - RIGHT HIGH FREQUENCY
- (9) OUTPUT - RIGHT LOW FREQUENCY

BOTTOM

- (10) LEVEL CONTROL FOR SUMMED LOW OUT
- (11) LEVEL CONTROL FOR LEFT HIGH OUT
- (12) LEVEL CONTROL FOR LEFT LOW OUT
- (13) LEVEL CONTROL FOR RIGHT HIGH OUT
- (14) LEVEL CONTROL FOR RIGHT LOW OUT
- (15) LEVEL CONTROL FOR CENTER HIGH OUT



BOTTOM

VI. CONNECTING THE EC-300 TO YOUR SYSTEM

Be certain all amplifiers are turned "off".

2. Connect the outputs from the signal decoder to the inputs on the EC-300. (Decoder Left Out to EC-300 Left In, Decoder Center Out to EC-300 Center In, and Decoder Right Out to EC-300 Right In.)
3. Connect the high frequency outputs from the EC-300 to the high frequency amplifier (3 channels). (Left EC-300 High Out to Left High-Frequency amplifier input, Center EC-300 High Out, to Center High Frequency amplifier input, and Right EC-300 High Out to Right High-Frequency amplifier input.)
4. Connect the Left, Center, and Right loudspeakers to the high frequency amplifiers.
5. Connect the Low Frequency Outputs from the EC-300 to the low frequency amplifiers. (Left EC-300 Low Out to Left Low Frequency amplifier input, and Right EC-300 Low Out to Right Low Frequency amplifier input for dual subwoofer systems.)
6. Connect the Summed Low Out to the Low Frequency amplifier for single or monophonic subwoofer systems.

ADJUSTING OUTPUT LEVELS

It is essential to adjust the resulting levels of each speaker so that all five units (four with mono subwoofer) deliver the same output energy (volume). This is achieved by adjusting the controls on the bottom of the EC-300 with a very small screwdriver. Insert the screwdriver into the marked hole to adjust each speaker and turn counter clockwise to decrease the volume for that speaker. Proceed with each of the other channels until the output levels are the same. An SPL meter can be used to assist in this task. Adjust the levels for a smooth transition from the subwoofer(s) to the high-frequency speakers. This is best achieved by listening to a range of well recorded music, and adjusting for adequate subwoofer level without the low-bass becoming obtrusive.

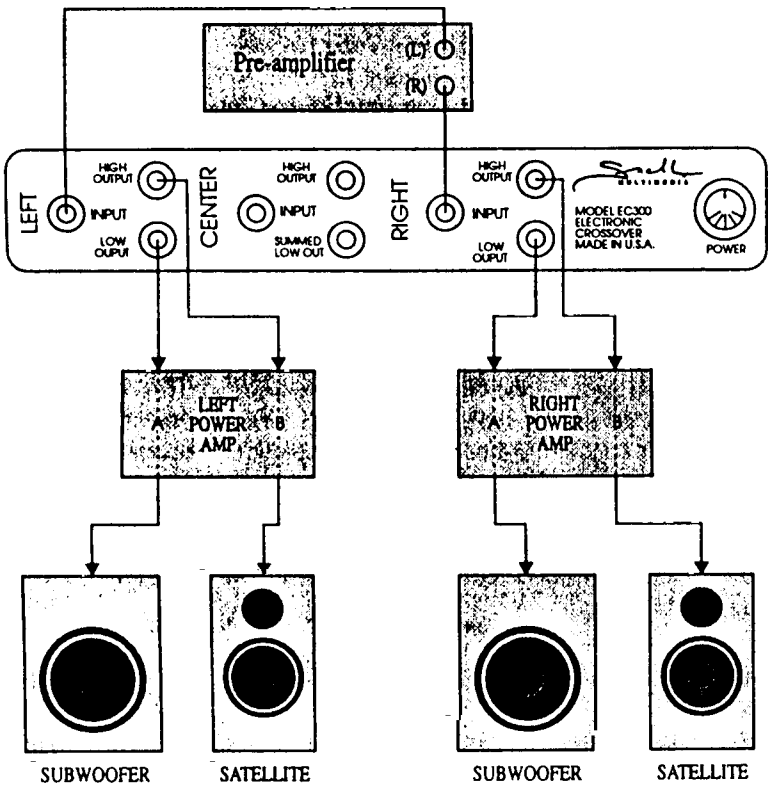
PERFORMANCE, APPEARANCE AND CARE

Great care has been taken in design and manufacturing to ensure years of high quality performance. Should your EC-300 appear to malfunction, first, check to see that the front panel power indicator is illuminated. If not, check to see that your EC-300 is plugged into a "line" AC outlet, and that the power supply plug is fully inserted into the "power" jack on the EC-300. If there still appears to be a problem, try exchanging signal cables in case one is defective. If this does not solve the problem, please contact your Snell Acoustics dealer. Be certain all power amplifiers are "off" before connecting or disconnecting power and signal cables.

Care of the EC-300 is equally simple. Treat the unit with the same regard you would have for any high quality hi-fi equipment. The cabinet and face plate may be cleaned with a soft towel and window cleaner. No other type of cleaner or solvents should be used. With these considerations your EC-300 should give you years of pleasure.

IX. OPTIONAL SETUP:

If you are using the EC 300 for two channel stereo with two identical amplifiers, you may want to consider vertical bi-amping. This results in totally separate amplification for each channel, completely eliminating any channel inter-action for optimum soundstage. To "vertical bi-amp" use one amplifier for the left channel low and high frequencies and the left speakers, the other amplifier for the right channel low and high frequencies and the right speakers.



X. CONCLUSION

At Snell Acoustics, we develop and manufacture the most accurate and highest quality loudspeakers and related products available anywhere in the industry. Your care and attention in the set-up of the great Snell products you have selected will help you gain the maximum performance and pleasure. It is our goal that hi-fi should allow you to enjoy music to the maximum.

Thank you for selecting our wonderful products. We are confident they will provide many years of listening pleasure. Do not hesitate to call your local Snell dealer or our Factory Customer Service if you have any questions.

The logo for Snell Acoustics features the word "Snell" in a large, elegant, cursive script. Below it, the word "ACOUSTICS" is written in a smaller, all-caps, sans-serif font. A small trademark symbol (TM) is positioned to the right of the word "ACOUSTICS".

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