

SMART CIRCLE SURROUND 3X JR FOR HOME CINEMA

FREQUENTLY ASKED QUESTIONS

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INTRODUCTION

The SMART Circle Surround 3X JR for Home Cinema adds that EXtra dimension of sound to your Dolby Digital™ 5.1 or DTS Digital™ 5.1 soundtracks from LaserDiscs or DVD Discs. Add one or more rear wall speakers and additional amplifiers to get the full enjoyment from the latest film releases encoded with the Surround EX™ format. In addition, this product even allows you to play your existing digital soundtracks and hear them in a way you have never heard them before. The existing in-phase material present in the Left Surround and Right Surround channels is routed to the rear wall speakers and the directionality is greatly enhanced. A CENTER FILL level control lets you easily balance the rear wall speakers against the Left Surround and Right Surround speakers. You can easily select between the CS-3X mode and the regular LS-RS mode with the push of a button. Built-in pink noise lets you easily set the surround channel levels, and if you have equalizers installed, the pink noise source gives you a signal that a Real Time Analyzer expects. This product even has a built-in subwoofer output signal for adding those usually missing low frequencies to your surround system. By adding a subwoofer system to the surrounds, when a sound pans from the front speakers to the surrounds, the low frequency information can also be heard from the surround system. This can significantly enhance your listening experience if your surround speakers do not handle low frequencies very well.

GENERAL INFO

1.1 Just what the IS the CS-3X JR anyway?

The CS-3X JR is a home version of the SMART Center Surround 3X format decoder box used in movie theaters to extract a rear wall surround from the discrete digital left and right surround signals. This is not new technology, but it is a different application of existing matrix technology.

1.2 I've heard it's the same technology that they use in a professional theater. Is this true?

Yes it is true. SMART Devices, Inc. has the largest line of professional movie theatre equipment in the world, among which is the CS-3X, the professional version of the CS-3X JR. The CS-3X has some additional circuitry such as equalizers and specialized format switching circuitry which is required for the cinema. Other than that, the core circuitry is the same. We think the home version box is prettier, though.

1.3 Is this the new sound that I heard about when the new Star Wars™ film came out?

Yes, This is the ability to extract a rear wall surround channel signal from the left surround and right channels which are part of the digital soundtrack.

1.4 Does it work with all movies and sound sources?

The effect will be present with any Dolby Digital™ 5.1 or DTS Digital™ 5.1 soundtrack. However, movies are now being released which are mixed to take special advantage of this new format. Even though the Surround EX™ format was created recently and has only been **specifically** used in a couple of movies, the fact is that **all** digital soundtracks have had in-phase material recorded on the surround channels when the sound mixer wanted the surround sound to appear to come from somewhere between the left and right walls. This in-phase material is decoded by the CS-3X JR and sent to the rear wall (CS) channel speakers and can enhance the directionality and the overall listening experience. If this effect is not desired for a particular movie, simply place the CS-3X JR in the LS-RS format. Ultimately it is up to you how you prefer to hear your system perform.

It will have NO effect with regular stereo audio CD's, VHS stereo, Prologic type matrix signals, 2 channel stereo laserdiscs or 2 channel stereo DVDs. It ONLY works with Laserdiscs or DVDs encoded with one of the two digital systems mentioned above. It MAY work with DTS encoded CDs if you are making use of the 2 surround channels that are available from the encoded CD.

1.5 When will the CS-3X JR be available?

The CS-3X JR is now shipping. Go to this web address for dealer info:

<http://www.smartdev.com/cs3xupdate.htm>

or call SMART at 1-800-457-6278

1.6 Who do I talk to about questions or problems? Does SMART provide technical support?

SMART Devices will provide tech support to the dealers and to consumers, although we strongly urge you to go to your dealer first for support. Your dealer is knowledgeable in the areas required to properly install and operate home cinema equipment and is your best source of support. We will be happy to assist dealers and consumers fully in making certain that all questions and service issues are answered.

WHAT DO I NEED?

2.1 Will the CS-3X JR work with my brand decoder/ processor/ receiver/ amplifier/ speakers?

This question is best answered by your Home Cinema Equipment dealer because there are so many different brands and models of processors and receivers that it is impossible for us to know all of the different configurations of equipment.

Basically, the CS-3X JR is designed to work with any home cinema system that has Dolby Digital™ 5.1 or DTS Digital™ 5.1 capability. The CS-3X JR will work with any digital decoder that produces discrete left and right surround signals. For inputs, it requires 2 discrete surround channels (left surround and right surround) which are available in the two digital systems mentioned above.

It WILL NOT work with surround channels that have been derived from standard analog stereo signals, such as that which comes from a Dolby Prologic™ system.

2.2 What do I need to make this technology work?

In addition to the digital capability mentioned in 2.1, you will need additional speakers for the rear wall, an additional amplifier channel for the rear wall speakers, and depending on the abilities of your existing equipment, you may need a new dual channel amplifier for the left and right surround speakers.

HOW TO DO IT

3.1 I've got all the stuff. Which wires go where?

This is a question best left to the installation manual and the expertise of your equipment dealer. Each situation varies, so individual help may be needed from your dealer.

3.2 I'd like to use the CS-3X JR as a regular processor matrix because I heard the Circle Surround effect is really good. How do I do that?

The CS-3X JR has the capability to function as a multi-channel decoder to extract Left, Center, Right and Surround channels from a standard 2-channel stereo source such as a VHS Hi-Fi stereo VCR. This is possible to do but it is beyond the scope of this article.

THE TECHNICAL STUFF

4.1 Why is the CS-3X JR better than other similar products?

The CS-3X JR uses the patented Circle Surround Matrix to extract the additional surround channels from the left surround and right surround channels. This matrix overcomes some of the shortcomings of other matrix schemes such as excessively hard steering and jerky action. The result is a smoother and more realistic sound.

4.2 What is Pink Noise and why is it in the CS-3X JR?

Pink Noise is a standard test signal used in cinema and other professional audio applications for setting equalization and volume levels. The CS-3X JR does not have built-in equalizers, but if you want to add external equalizers to your surround channels, the built-in Pink Noise provides a convenient test signal for equalizing. It also is useful for balancing the volume levels between the surround channels.

4.3 I see the CS-3X JR has a subwoofer output. What does that have to do with the ex format effect?

Actually, nothing. The subwoofer output is provided because most typical surround speakers do not have very good low frequency response. So, when a sound moves from the front speakers to the surround speakers, the character of the sound changes. By adding a surround subwoofer to your system, the sound remains more consistent regardless of the channel from which it is being produced. The sub signal is derived from the left surround and the right surround channels before any other processing is done. So, even if a sound is coming from the rear wall speakers, there is still a sub signal, too.

4.4 What about rear wall speaker placement?

The rear surround channel speakers should be placed on the rear wall at or near the same height as the other surround speakers. You may use one or two speakers for the rear wall. Depending on your room, it may be better to have two speakers, each spaced a little left and right of the centerline of the rear wall. This is because our ears have a tough time discriminating direction from directly behind us. Having two speakers spread slightly across the rear wall may help to determine directionality a little better.

4.5 How much amplifier power do I need?

It depends on a lot of things. How efficient are the speakers? How much power do you have on the other channels in the system? How loud do you like to play the system? The power for the rear wall speakers should generally be as much as the power for the left surround and right surround speakers. Consult with your dealer for more information.

4.6 What is the CENTER FILL control on the front panel?

This is a volume control with a limited range for the rear wall speakers. It is there to allow you to easily adjust the balance between the side wall surround speakers and the rear wall speakers. You may want to adjust it up or down slightly to suit the movie being played. It is called CENTER FILL because it adjusts the level of the center surround (CS) channel (the rear wall speakers).

DOCUMENTATION

5.1 Is a manual available?

Yes, and it is available in PDF format on the SMART WEB site. Go to this WEB site:

<http://www.smartdev.com/pdf/cs3xjrmanv3.pdf>

and find the Home Cinema Equipment section. There is a manual listed for the Circle Surround 3X JR.

For additional info, go to this web address: <http://www.smartdev.com/home.htm>