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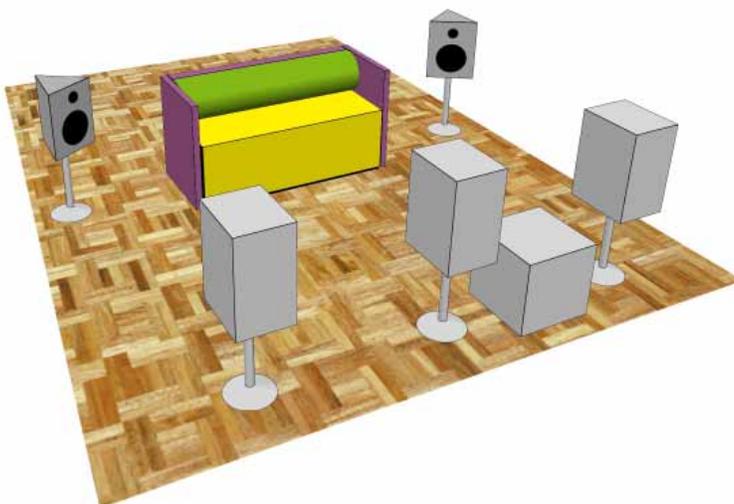
ADA 6.1 Surround

The Future Of 5.1 Home Theater

History - Surround Sound

In 1988, Dolby Pro Logic preamplifiers hit the market place, truly launching the new revolution of home theater. Dolby Surround had been available for several years, offering rear channel steering, but it wasn't until the introduction of Dolby Pro Logic, a center channel matrix of the front right and left stereo signal, that home theater truly took off. The differences between Dolby Surround and Dolby Pro Logic are dramatic. Dialogue in particular, which use to emanate from both front and left speakers, now was more focused, coming from a new center channel speaker.

In 1995, Dolby Digital, at the time called AC-3, was introduced to the home theater market. It was delivered on laser discs that offered a special 5.1 audio channel. For those home theater enthusiast who had previously incorporated a Dolby Pro Logic preamplifier or receiver in their home theater, Dolby Digital 5.1 home theater proved to deliver an exciting, significantly more real surround sound experience than Pro Logic. Naturally, since not all software or broadcasts, even to this day, are 5.1 encoded, these systems provided both Dolby Digital and Dolby Pro Logic decoding.



In the first half of 1996, DTS introduced their first 5.1 encoded music CDs and films on laser disc. While the decoding technology required for DTS is different than that required for Dolby Digital, the speakers and power amplifiers in the home theater play both formats without the need to change or alter equipment. Assuming that the preamplifier or receiver can decode both DTS and Dolby Digital, both 5.1 formats coexist in a single home theater.

Towards the end of 1996, DVDs began shipping, offering 5.1 sound for most new films encoded in that format. The rest is history as the success of DVD software makes 5.1 easily accessible.

So what is the next new audio technology coming to the home theater market and how does it affect you? Does it make your current equipment obsolete? How much will it cost?

Introduction - ADA 6.1 Surround

After conquering multi-channel power amplification design in 1988, Dolby Pro Logic in 1989, THX certified electronics in 1992, Dolby Digital in 1995, and DTS in 1996, the engineers at ADA began looking into the possibilities of an improved sound stage for digital 5.1 theater systems. Led by ADA's President and Chief Design Engineer, Albert G. Langella, a new surround sound decoding option was unveiled to the world for the first time, at the 1999 International Consumer Electronics Show. The response, to say the least, was amazing.

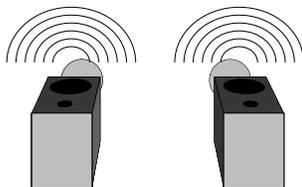
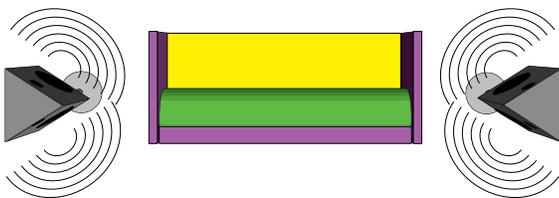
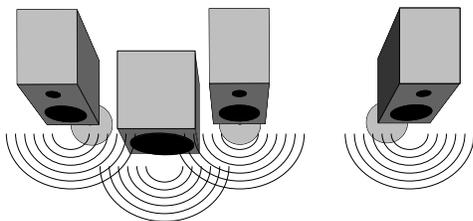
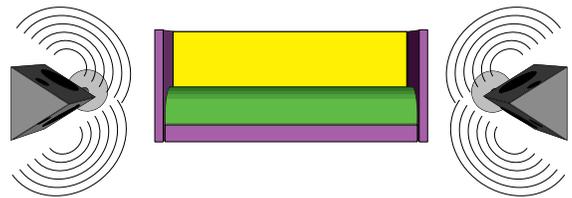
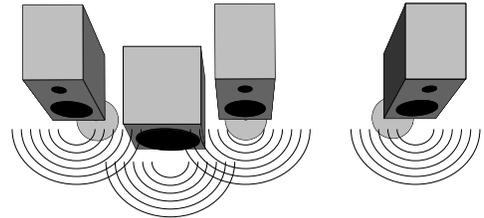
ADA 6.1 Surround is a new process that decodes the discrete right and left surround channel information contained on 5.1 encoded software. Since each of these two rear channels is being sent discrete audio information, the engineers at ADA were able to extract the mono mix. This blend of left and right mono audio, is then matrixed to a new center channel speaker placed in the rear of the room. Utilizing much of the same technology that is incorporated in ADA's critically acclaimed SSD-66 Dolby Pro Logic Surround Sound Decoder, they created the ADA 6.1.

When playing a 5.1 encoded segment of software, the right and left surround channels receive their own discrete audio signal. Unlike Pro Logic, where both channels receive the exact same signal, 5.1 surround is significantly more realistic, as information intended to sound as if it was taking place over your right shoulder, comes from the right surround speaker. The same is true for the left channel. However, when a sound is intended to come from somewhere directly behind you, both right and left speakers carry this sound to make

you believe that's where the audio foot print lies. You imagine the sound is there, and although this deception is effective, it is not nearly as dramatic as 6.1 surround. This is especially true for fast paced action scenes, where sounds move from one surround speaker to the other. The sounds move so quickly, that the mind does not have ample time to truly imagine the sound as coming from behind.

ADA 6.1 Surround changes all this by placing one or two speakers directly behind you. Using the ADA 6.1 Processor, the sounds that are intended to fool you into thinking they are coming from behind, are actually, coming from a real speaker. Imagine no more.

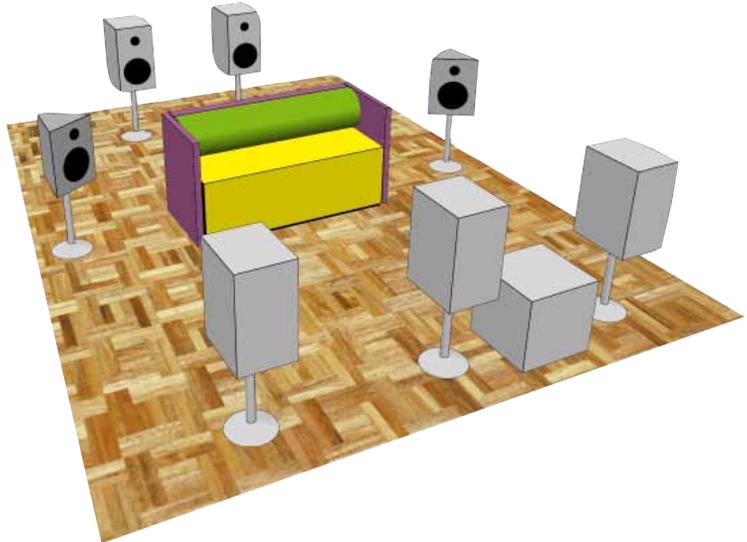
The beauty behind ADA 6.1 Surround, is that it is extremely effective with any 5.1 encoded software; from films, to music, to HDTV 5.1 broadcasts. And best of all, Audio Design Associates makes this technology both backwards compatible and affordable.



What You Need - ADA 6.1 Surround

Audio Design Associates has gone to great length to insure that any 5.1 home theater system can be upgraded to ADA 6.1 Surround, without replacing existing preamplifiers or A/V receivers. You will not need to go through costly software upgrades or suffer significant theater downtime because this is not a modification to your preamplifier or A/V receiver. In fact, until you install your ADA 6.1 Surround upgrade kit, you can enjoy your current 5.1 technology to the very last minute. But, rest assured, once you upgrade your 5.1 theater system to 6.1, you will never want to listen to just 5.1 surround sound, ever again.

As such, it is important to note, that unless you are using a 5.1 preamplifier or 5.1 A/V receiver, an ADA 6.1 Surround upgrade will not provide you with the needed 5.1 decoding, that is essential to ADA 6.1 Surround. Since ADA 6.1 Surround is merely an upgrade kit for 5.1 systems, those who are interested in obtaining the ADA 6.1 Surround upgrade prior to getting a 5.1 preamplifier or A/V receiver, will not be able to experience the full pleasure of ADA 6.1 Surround.



However, if you already have a 5.1 preamplifier or 5.1 A/V receiver, all you may need for incredible ADA 6.1 Surround are the following:

- ADA 6.1 Processor
- ADA AMPx4 Four Channel Power Amplifier & Speaker to Line Convertor*
- One or Two Additional Speakers
- Amplification for the above Speakers*

**May not be needed depending on system setup.*

ADA 6.1 Processor

The ADA 6.1 Processor is connected between the 5.1 preamplifier's or 5.1 A/V receiver's surround channel line-level audio outputs (not available on all receivers) and the power amplifier. It features:



- Individual Level Controls - Existing Surround Left & Right, New Surround-Back Left & Right
- High-Pass/Low-Pass Switch
- Auto-Balance Switch
- Power On/Off Switch
- Low Voltage Power On Trigger Input **

***Used with 5.1 processors that provide a trigger when decoding 5.1 (ADA Cinema Reference Ver. 1.8).*

5.1 Preamplifier/Processors (Separates) - ADA 6.1 Surround

For those using 5.1 preamplifiers, chances are, all you will need to upgrade your system to ADA 6.1 Surround is just the ADA 6.1 Processor. While the AMPx4 Four Channel Power Amplifier provides incredible sound, you would be using it just for the one or two surround-back speakers as you already have amplification for your existing right & left surrounds. If you are currently using one of ADA's six channel power amplifiers (PTM-650, PTM-6150, or PTM-1260) along with a self powered subwoofer, you already have an amplification channel that is currently not being used. For those of you who have asked, "What to I do with this extra channel?", you now have your answer.

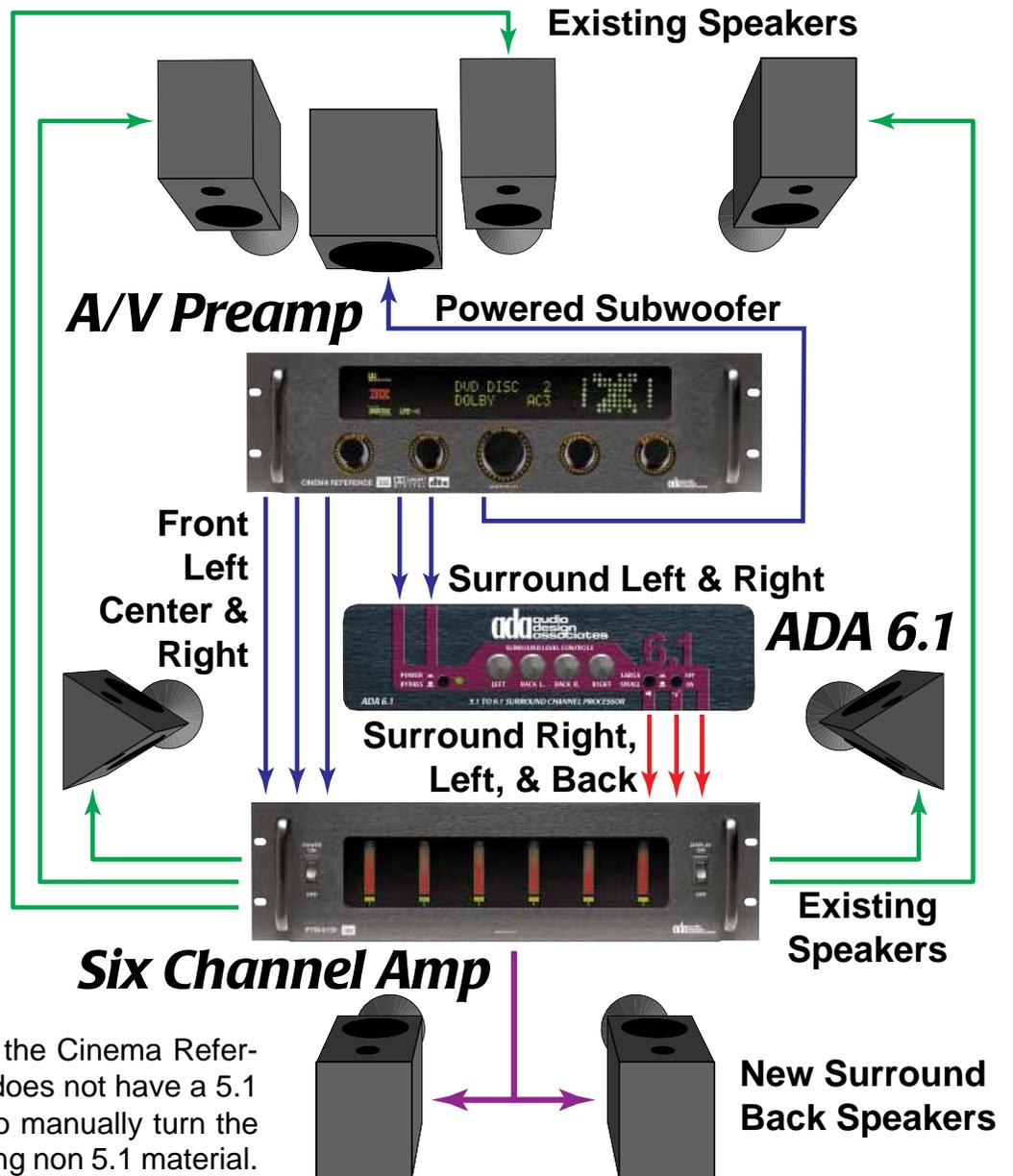
For those of you who will require additional amplification for one or two surround-back speakers, you may opt to use a mono-block amplifier, or perhaps an existing unused stereo power amplifier, or choose this time to upgrade to one of ADA's powerful, six-channel home theater amplifiers.

The last item, in addition to interconnects and speaker wire, that you will require, is a speaker or two.

Setup & Operation

The diagram to the right illustrates the setup of an ADA 6.1 Surround System. Note, that it is perfectly acceptable to use two speakers in parallel on one of the PTM-6150's six amplifier channels.

Not shown, is a low voltage two-conductor wire that connects from the ADA Cinema Reference to the ADA 6.1 Processor. This connection permits the ADA 6.1 to automatically turn on and off with the 5.1 decoding that takes place in the Cinema Reference. If your preamp does not have a 5.1 trigger, you will need to manually turn the ADA 6.1 off when playing non 5.1 material.



5.1 A/V Receivers with Surround Line Outputs - ADA 6.1 Surround

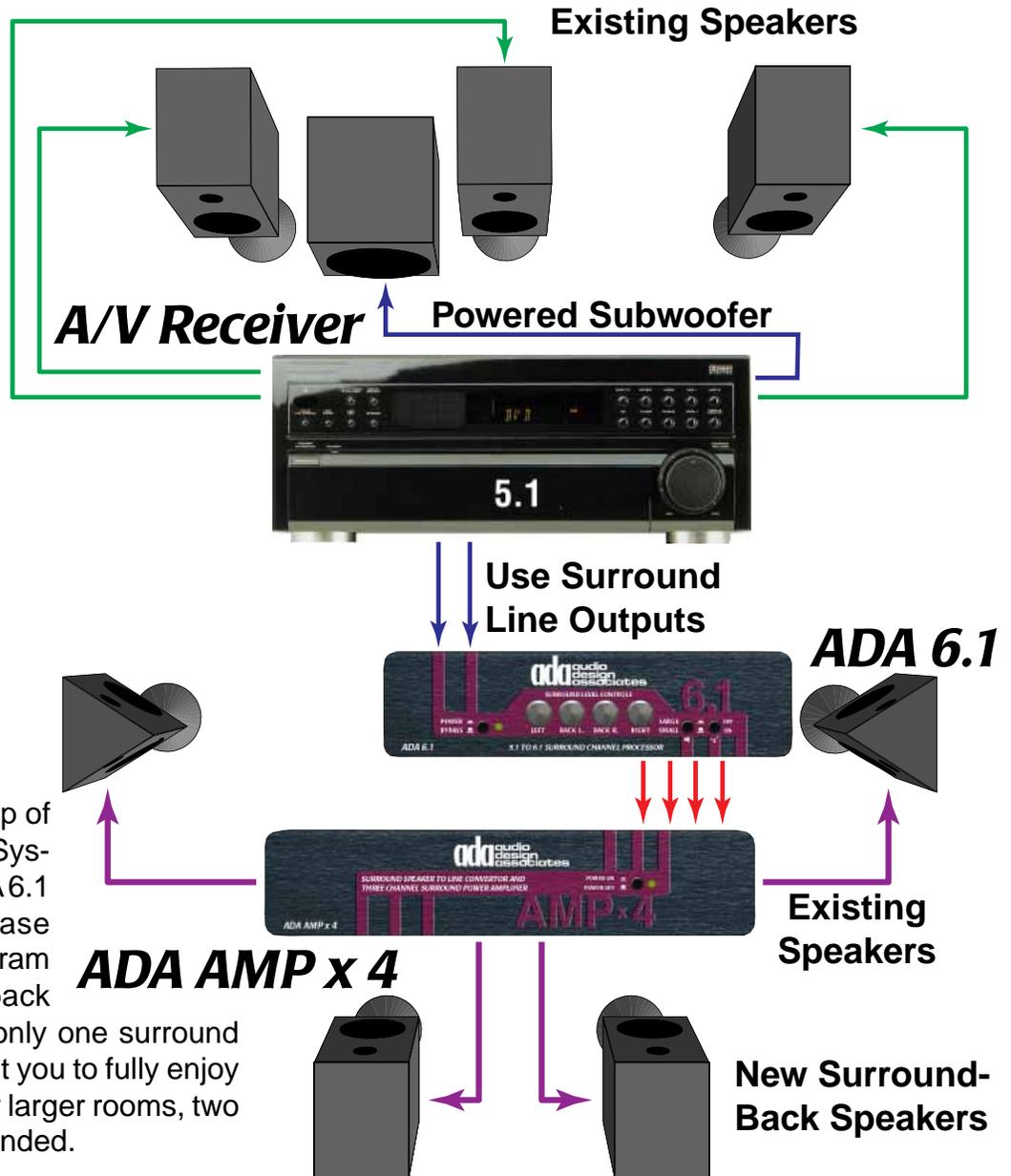
For those using 5.1 A/V receivers with audio line-level outputs (for surround right and left), chances are, you will need a power amplifier, not just for the new surround-back speakers, but also for the existing left and right surround speakers as well. While several 5.1 A/V receivers offer surround channel line outputs, they do not offer amplifier loop inputs. As such, even though you can extract rear-channel line-level audio from the 5.1 A/V receiver, there is no way to return line-level audio to the receiver's internal amplifier channels for the surround speakers.

That does not mean you are out of luck, as ADA also provides the AMPx4. The AMPx4 is a four channel power amplifier that mates perfectly with the ADA 6.1. While it is small in size, the AMPx4 has a great deal of kick. Conservatively rated at 50 Watts per Channel, the AMPx4 has more power and umph than most A/V receivers. It will cleanly drive four demanding home theater speakers. In fact, we think you will come to like the sound the AMPx4 provides so much, that you will want to get another one, just for your existing three front channel speakers.

Nonetheless, the AMPx4 is required as the existing surround channels are also processed by the ADA 6.1 Processor. While the 6.1 sends surround mono information to the surround-back channel, it also removes this information from the surround right & left channels. As such, you will need to process the existing surround channels through the 6.1 prior to amplification.

Setup & Operation

The diagram to the right illustrates the setup of an ADA 6.1 Surround System, using both the ADA 6.1 and the AMPx4. Please note, that while the diagram shows two surround-back speakers, even using only one surround back speaker will permit you to fully enjoy ADA 6.1 Surround. For larger rooms, two speakers are recommended.



5.1 A/V Receivers without Surround Line Outputs - ADA 6.1 Surround

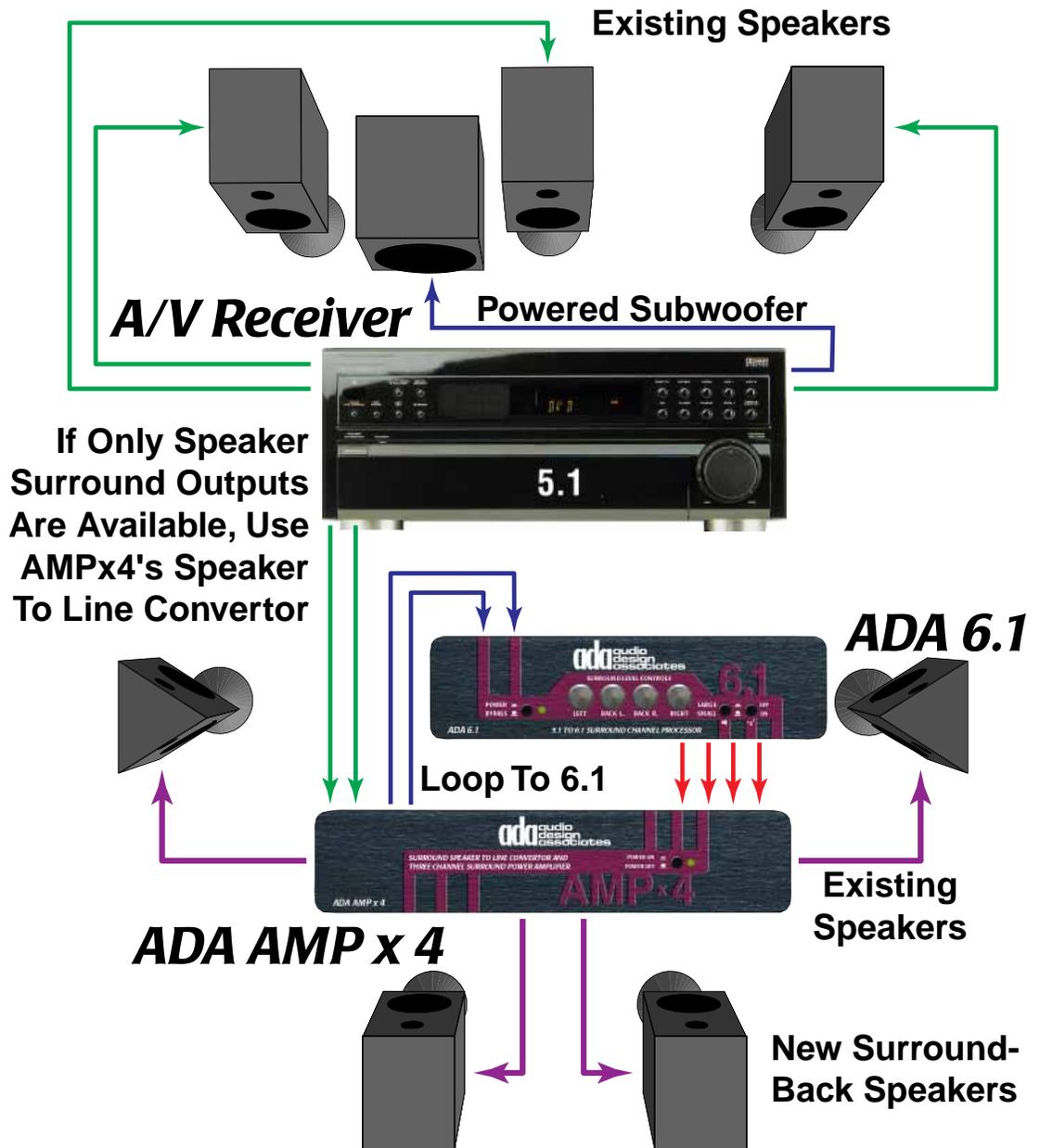
To make certain, that any 5.1 home theater system can be upgraded to ADA 6.1 Surround, Audio Design Associates engineering staff has added a special module to the AMPx4. As most of the 5.1 A/V receivers currently in use, offer only speaker level outputs for right and left surround, the AMPx4, in addition to providing four channels of power amplification, also incorporates a custom speaker to line-level audio convertor.

This circuit is independent of the amplifier although it resides in the same chassis of the AMPx4. As the surround channels' audio signal can only be processed by the ADA 6.1 if at line-level, you must first convert your 5.1 receiver's speaker level (amplified) surround output to line-level audio. To do this, simply terminate the 5.1 receiver's surround right and left speaker outputs on the convenient removable screw terminal speaker input connector, located on the AMPx4's rear panel. Then connect a pair of RCA interconnects from the AMPx4's convertor output to the input on the ADA 6.1. The ADA 6.1 then connects to the AMPx4 for amplification of all surround channels.

Setup & Operation

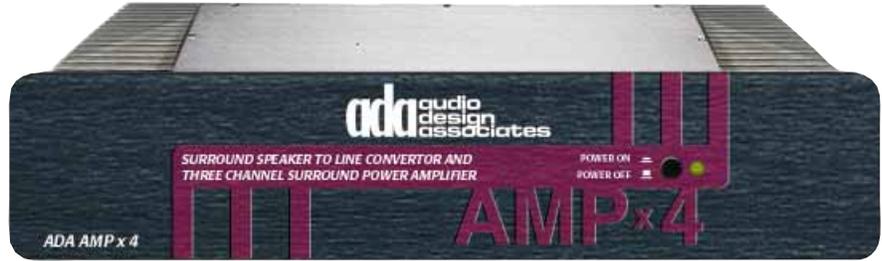
The diagram to the right illustrates the setup of an ADA 6.1 Surround System.

Note that the 5.1 A/V receiver's surround channel speaker outputs do not connect to the surround speakers, but rather to the AMPx4's speaker to line convertor speaker input. The blue lines indicate that the AMPx4's speaker to line convertor's line-level audio outputs then connect back to the AMPx4 for 6.1 processing. The red lines indicate processed audio prior to amplification.



ADA AMPx4

The AMPx4 is an incredible sounding four channel power amplifier. It also has a special processor loop that connects speaker level to line-level. It features:



- Four Channels of High Current Amplification - Stable to 4Ω - 50 Watts/Channel (4Ω)
- Aluminum Heat-Sink Cooling - No Fan Noise
- Banana Pin Speaker Connectors for Power Amplifier (Banana Connectors Included)
- Built-In Speaker Level (4-Pin Screw Terminal Connector) to Line-Level Audio (RCA) Convertor

Where Do You Put Your ADA 6.1 & AMPx4

The ADA 6.1 and AMPx4 depart from ADA's typical rugged looking rack mount cosmetics. The ADA 6.1 measures under seven inches in width and the AMPx4 measures under ten inches in width. Both components are only two inches in height.

You can opt to stack your ADA 6.1 and AMPx4.



Or you can set them on top of another component, side by side.



17 Inches Wide When Set Side by Side or Stack Them

For more information or your local ADA Dealer, please visit our web site at www.ada-usa.com or call 1-800-43-AUDIO. For a list of Dealers who stock & display the ADA 6.1 & AMPx4, please visit the 6.1's page at www.ada-usa.com/6.1.

