Outlaw Audio 975
7.1-Channel Surround Sound Processor

Doug Blackburn

Outlaw Audio was one of the early companies to adopt a direct sales model, selling their products directly to consumers without a dealer network. They have successfully used the power of the Internet to spread the word about their company, all the while keeping product prices so low that they have been difficult to ignore. But low prices alone are no bargain if the product doesn't compete with higher-priced components sold through traditional channels. Outlaw has done a pretty good job over the years of getting excellent bang-for-buck reviews from both professional reviewers and from owners posting on forums. Today, Outlaw sells more than 20 products, including amplifiers, a stereo receiver, subwoofers, and various accessories.

The Model 975 Surround Processor is one of Outlaw's newest products. To my knowledge, there is no other surround sound processor available at this attractive price ($549) or lower. And there are darn few surround processors available for under $1,000. More typically, you find surround processors selling for $1,500 and up. So Outlaw's Model 975 is a big deal, making it possible for people to break into the typically higher levels of performance you get from a separate surround processor and amplifier compared to an AVR that most people on tighter budgets will be forced into for their home theatre control center. Amplification is typically the weakest area of performance for AVRs, so getting a good stand-alone amplifier is one of the more effective electronic upgrades for a home theatre system. And once a good amplifier is in place, there's little need to change the amplifier(s) as features come and go. You can get a newer surround processor and keep the amplifier. Outlaw would be more than happy to help you with your five- or seven-channel amplifier, or even with five or seven mono amplifiers.

When designing a product like this, designers typically have to pick from a list of DSP, video processing, and controller chips, and the device they select determines what features the product has available. It gets very complex and expensive to try to add something not already supported by the selected controller chip. When you are on a tight development budget required to meet the modest retail price of the Model 975 processor, you have to choose your chips very carefully, as they will have a rather large impact on your per-unit build-cost. On top of that, you want to select chips that are going to be available for a while. There's nothing worse than finishing a design only to have a critical part being discontinued and have to start over again. Because of this design reality, the Model 975 processor is not going to be all things to all potential customers. It has some things you may not want, and it lacks other things you may want. Only you can decide if the Model 975 feature set meets your needs or not.

Manual And Remote

The manual for the Model 975 is quite good. Easy-to-understand graphics enhance clear, straightforward descriptions that actually make sense. The manual does not try to speak to the complete home theatre novice, though, and in this case, I think that's exactly the right way to position this manual. Anyone likely to be purchasing Outlaw Audio products is likely to have had some home theatre experience and knows what analog and digital are and knows Dolby® and DTS® codecs, etc. As a result, descriptions are short and meaningful, and the total volume of text in the manual is quite manageable. I never had any trouble finding anything I was looking for either.

The remote worked better than I expected for a surround processor that costs only $50 more than an OPPO BDP-103 universal disc player. There are a variety of button shapes to help organize things into groups. All the buttons except the four colored buttons are backlit, and the backlight is activated by pressing any button. The remote can control up to six other devices using stored codes. There is no learning mode. The button layout isn't the best I've ever used, but it's certainly okay and easy enough to adapt to without much difficulty. Secondary functions are printed on the body of the remote and are not backlit, so there are times when some room light is needed for less often-used buttons.

Setup And Use

Strictly old school methods are used. Measure the distances from loudspeakers with a tape measure and enter them manually. Determine the best crossover points for each pair of loudspeakers and enter those manually. Measure the pink noise test tone from each loudspeaker and set the levels manually so all channels are equally loud. It's simple and pretty foolproof. It's nice to be able to set a different crossover point for each pair of loudspeakers and the center channel. You can select 5.1, 6.1, or 7.1 loudspeakers, and a subwoofer on/off setting allows those to be changed to 5.0, 6.0, and 7.0, even though you never see that as a setting option anywhere. If you do select subwoofer off, you do need to have at least one pair of loudspeakers set

to large so the bass has somewhere to go, otherwise it would be lost completely. Distances are set in increments of half a foot.

Other setup steps involve assigning sources/inputs and naming them to suit your needs. There are settings for surround modes that you may or may not want to tweak, depending on your room and personal preference. There are video processing settings for brightness, contrast, saturation, hue, sharpness, and aspect ratio. I would recommend not using these unless you have a very good reason to use them.

There are bass/treble controls in addition to an LFE Trim setting that allows you to decrease (but not increase) subwoofer level. There are also bass augmentation settings for Dolby Digital, Pro Logic II, DTS, and DTS Neo:6. In addition, there's a subwoofer trim control for all those surround modes. There's even a separate subwoofer trim setting for when you are using Stereo mode with the subwoofer. You can disable the HDMI video out to the TV if you are only connecting audio sources to the Model 975. The Video Output menu allows you to select Native mode to keep resolution set to whatever the incoming resolution was, or you can select AutoScale and the Model 975 will upconvert to the highest resolution of your video display. You can also select a single resolution from the choices of 480i, 480p, 720p, 1080i, and 1080p.
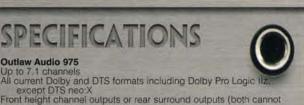
The Advanced Dolby/DTS menu allows you to vary the setting values for Pro Logic II Panorama, Center Width, and Dimension. There is a setting called DTS HD loudspeaker Remap that addresses one of Editor Gary's pet peeves about 7.1 soundtracks (apparently only helps with DTS-HD in this case, but that's a start). There is no industry standard for which channels of the Blu-ray™ soundtrack should be sent to the side surround loudspeakers and which channels should be sent to the rear surround loudspeakers. So you can end up having a "fly over" start at the side, move to the back, then jump to the front instead of starting in the back, moving forward to the sides, then ending at the front. The DTS HD Remap setting has two possible settings... 1 or 5. Why 1 or 5, I don't know, but the 1 setting should be used when the 5.1 surround channels are connected to loudspeakers to the sides of the listening position with rear surround loudspeakers in the back. However, that's not the best choice for loudspeaker connections if you want to listen to 5.1 movies with 5.1 channels (not having the rear surround channels synthesized or duplicated into the rear loudspeakers) and 7.1 movies with 7.1 channels. The 5.1 surround loudspeakers should really be somewhat behind the listener and to the sides. If you connect your loudspeakers that way, your "rear surround" outputs for 7.1 loudspeaker setups would actually be connected to the side channels. Having this Re-Map setting allows you to hear 5.1 soundtracks with the correct 5.1 surround loudspeaker locations and 7.1 soundtracks with the correct 7.1 locations. Your biggest hurdle with this "what channels are placed where" for each 7.1 channel Blu-ray Disc™ is figuring out what they did for each movie. If you are a Widescreen Review subscriber, you can access the online Blu-ray Disc movie reviews, find all the 7.1 soundtrack movies, and find the channel locations identified. A small note taped to each 7.1 Blu-ray box will remind you how to set up for each 7.1-channel disc. Unfortunately, it sounds like Dolby TrueHD 7.1 soundtracks will require physically changing the loudspeaker connections, either at the back of the 975 or at the loudspeakers themselves. Or you just live with the "out-of-position" surround channels.

The Model 975 has a Night Mode to compress dynamics for late night listening, but it is only available for Dolby Digital, Dolby Digital Plus, or Dolby TrueHD soundtracks. If the soundtrack is PCM or any DTS format, the Night Mode setting won't do anything. I did use it with cable/satellite programming that's almost always Dolby Digital, and it did work with that source.

What The Model 975 Does Not Have

The Model 975 does not have an analog pass-through mode. All analog inputs are digitized, processed, and converted back to analog. Some people will be fine with that, while others may find that's a deal

SPECIFICATIONS

Outlaw Audio 975
Up to 7.1 channels
All current Dolby and DTS formats including Dolby Pro Logic IIz, except DTS neo:X
Front height channel outputs or rear surround outputs (both cannot be used at the same time)
Resolution scaling for HDMI inputs or pass-through original resolution
Programmable remote for up to 6 other devices, stored codes only
Front panel headphone jack
HDMI: 4 in; 1 out with audio return channel support
S-video: 4 in; 2 out
Composite Video: 2 in; 1 out
Component Video: 2 in; 1 out
S-Video: 2 in; 1 out
No Zone support
Digital Audio: 2 coax in; 0 coax out; 2 Toslink optical in; 0 Toslink optical out
RCA stereo analog: 5 in; 1 out
7.1 analog input: No
7.1 analog output: Yes
Ethernet jack: No
12 Volt Trigger: 0 in; 1 out
Analog stereo pass-through mode (i.e. "direct"): No
USB Ports: none
Late Night mode to restrict dynamics: Yes
Internet audio or video streaming support: None
Network audio or video streaming support: None
Crossover settable for each pair of loudspeakers and center-channel individually in 10 Hz increments from 40 Hz to 200 Hz
3D pass-through

Specifications
Dimensions: 16.9 W x 2.8 H x 9.5 D (inches)
Weight: 8.27 (pounds)
Power Requirements: 120 VAC; 60 Hz only
Power Consumption: Standby- 0.5 (watt)
Frequency response: 10-20,000 Hz; +/- 1 dB
Input Impedance: 47,000 (ohms)
Output Impedance: less than 1000 (ohms)
Signal-to-noise ratio: -100 dB; A weighted
Channel separation: not specified
THD+Noise: not specified
Designed in: USA
Assembled in: China
Warranty: 3 years
MSRP: $549

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breaker. Digitizing analog inputs generally results in a small loss of fidelity, and I did detect that with the Model 975. Analog sources did not sound quite as good as they sound via high-end processors that do have analog pass-through modes. But I don't want to overstate "did not sound quite as good." I think people will read too much into that statement. The Model 975 sounds quite good with analog inputs. Music, the primary source you're likely to have in analog format, is entertaining and enjoyable. Using a 10-times-more-expensive processor will get you maybe 5 percent better sound quality. So, as long as your expectations are realistic for a $549 product, you will not be disappointed. If you think a $549 processor should have the same analog pass-through sound quality as a $2,000, $5,000, or $10,000 processor, perhaps you need to readjust your thinking about the realities of product design, budget, and retail price. As designed, high-quality analog sources sound perfectly fine until you compare them directly to a high-end processor or stereo preamplifier. That comparison reveals the sound of the Model 975 is not quite as spacious (width and depth), background silence is not quite the equal, and detail is not quite up to the standards of the high-end products.

But once again, we're only talking about an approximate 5 percent difference (wish there was a better way of quantifying this). In that context, the 975 is quite a bargain. If your comparison products are AVRs (used with preamplifier outputs bypassing the internal amplifiers), you'll

find that the 975 sounds a bit better than sub-$1,000 AVRs and is competitive with $1,200 to $2,000 AVRs.

Counterbalancing the lack of analog pass-through, however, is the benefit of full-bass management, loudspeaker layout, and surround processing that can be used to enhance stereo analog sources of any kind, including SA-CDs.

The Model 975 has no 5.1 or 7.1 analog inputs. For those who want to use the 5.1 or 7.1 analog outputs of a high-end disc player like OPPO's BDP-105 or Cambridge's Azur 752BD for DVD-Audio or SA-CD, the Model 975 is probably not your surround processor.

While many video processors, TVs, AVRs, surround processors, disc players, and other products are dropping composite, component, and S-video connections, the Model 975 has two of each as inputs and one of each as outputs. The 975 will also convert those analog sources to HDMI. Likewise, AM and FM tuners are disappearing from many products that would have had them in the past, but the 975 has both.

cannot be done very well by ear alone. The meter guarantees you'll get the right level setting for each channel, something critical for a good surround sound experience. You'll also need a tape measure to determine the distance from each loudspeaker to your ears, and you will manually enter that distance in the setup menu. Interestingly, there are sound-pressure level meter applications available for most smart phones at prices ranging from free to a few dollars. But be aware that the microphones used in smart phones are designed to be very good for human speech but not very good for measuring the level of a sub-woofer, so you could use a smart phone app to set your five or seven loudspeakers, but it may mislead you in setting the subwoofer level. That alone may be enough to justify purchasing a real sound-pressure level meter that will allow you to set the level of a subwoofer accurately. SPL meters are available from $20 and up and come in USB models as well as standalone models. Radio Shack no longer sells their formerly highly recommended analog SPL meter that used to sell in the $40 to $50 range, but within 2 minutes or so of searching online, I dis-

THE MODEL 975 IS A GREAT VALUE IN A SURROUND PROCESSOR PRICE RANGE THAT HAS SORELY NEEDED MORE OPTIONS FOR A LONG TIME.

A fair number of new home theatre audio products are not supporting Dolby Pro Logic IIz or DTS Neo:X, both of which include processing options for additional loudspeaker channels. The Model 975 is not supporting DTS Neo:X at the time of this review, but it does have Dolby Pro Logic IIz that can support two extra width channels outboard of the main front loudspeakers, or it can support two additional height channels placed above the main loudspeakers (front left and right). The Model 975 supports additional height channels but not the extra width channels. But, you must choose between 5.1 channels with two height channels or 7.1 (with rear surround channels) and no height channels. The analog outputs are 7.1 channels. You'd need 9.1 channels to support width or height channels and rear surround at the same time, or 11.1-channel support to have 7.1 channels plus width and height channels at the same time. To support 11.1 channels, the Model 975 would have had to have, at a minimum, an additional DSP chip and two more stereo D/A converters, and additional connectors for the extra channels. That would have pushed the Model 975's price considerably higher. When you want to make a $549 processor, everything you include and everything you decide not to include has to be weighed and justified. It's likely to be inevitable that there will be features deleted and included that some potential owners will not be satisfied with.

There is no automated speaker level capability . That means you'll really want to invest in a sound pressure level meter so you can manually measure and set the level of each channel accurately. This really

covered a nearly identical-looking meter sold as the Velleman AVM2050 selling for about $43.

The Model 975 is not equipped for any network or USB functionality. There's no USB DAC input, there is no Ethernet port, there are no network applications, and there are no USB ports. No loss, I say. If you want that stuff in your system, there are so many disc players with so many of those features that you can easily have whatever level of network and Internet app support you want without having it duplicated in the surround processor. I find that a perfectly legitimate way of dealing with that level of functionality. There's simply no reason to have Internet and network functionality in your TV, in your disc player, in your computer, with your satellite or cable service, and in the surround processor. You'd be paying for it three to five times... a waste of money.

Sound Quality

Analog sound quality compared to other products was discussed earlier, so I won't repeat those observations here. Using an HDMI connection to a Blu-ray Disc player produces movie sound very close to the high-end processors. The dynamics, the wide frequency range, the well-developed sense of space, the subtle details, the near-subliminal ambient cues, it's all there. Multichannel digital decoding gives little ground to the more expensive products. There is just a bit less of everything with the Model 975, but again, the cost differential is in no way indicative of the sonic differences. The Model 975 is far closer

than its bargain price would lead you to believe.

Using more closely priced competition, like the front-end of a sub-$1,000 AVR as a comparison, and the Model 975 pulls out a gap about the same as the higher-priced processors have over the Model 975. Not a huge difference, but one that can be heard in direct comparisons, though, not likely audible in separate listening sessions a day or more apart.

The dynamics of gunfire, loud cars, and frequent crashes in *Fast Five* were enough to raise the hairs on my neck. Surround effects were convincing and realistic. The few quieter moments in the movie were well served by the Model 975, showing that it could deal well with the smaller moments—just as well as the big. *The Blue Man Group: How to Be a Megastar Live* is surprisingly similar to *Fast Five* in regards to dynamics and all-around-loud, with only a few quieter moments, but the Model 975 had no trouble keeping up and delivering all the nuances in this clever and inventive live performance. There was nothing about the sound of the Model 975 that sounded "low-end" or even "mid-fi." It simply delivered whatever was on the soundtrack quite competently.

The sub-$1000 AVR front-end I compared the Model 975 to, interfered enough with the performance that even though there was nothing obviously wrong with the sound, it was mentally challenging to remain engaged with the performance. That was more obvious with musical performances than with movie soundtracks, but there was still a bit of a disconnect with movie sound. It's a difficult thing to describe because there is no one thing you can put your finger on. It's something like missing mojo, as nebulous as that might sound. It's there, but not completely there; a little duller, a little thicker, a little smeared, a little indis-

tinct. Those shortcomings are low in level, enough that it doesn't hit you right away, but after five or ten minutes you find yourself losing interest for no obvious reason.

On the other hand, the Model 975 had none of those above shortcomings , and that alone is one of the reasons you'd switch to a Model 975 and outboard amplifier combo rather than stick with an AVR.

Conclusion

Outlaw Audio's Model 975 is a great value in a surround processor price range that has sorely needed more, or any, options for a long time. Be sure you understand the Model 975's feature set to insure it will do what you want it to do. The Model 975 has the lowest price of any surround processor I'm aware of, but the low cost doesn't result in low-quality sound. If you need and want the feature set of the 975 processor, it will definitely live up to your expectations for sound quality in spite of the low price. Outlaw sells a 7-channel amplifier for just $699, with 75 watts per channel. That is equivalent to at least 150 watts per channel in overstated "AVR watts." So for $1,248, on paper one can have a separate processor and amplifier that will perform at least as well as AVRs in the $2,000 range. (Outlaw Audio actually offers this Model 975/775 combination for $1,098; so in reality it is even a better deal.)

If the day comes when you need something the Model 975 can't do, keep the amplifier and replace the Model 975, and you're good to go again. I enjoyed the time I spent with the Model 975 quite a lot, I think you will too. **WSR**