



Goldmund White Paper

Goldmund Acoustic Processors

The product design, technologies, and software that make the Goldmund Acoustic Processors unlike any other preamplifier or surround-sound processor.



Although all of Goldmund's products differ substantially from others in their categories, the Goldmund Acoustic Processor concept is perhaps the most radical of all. Unlike other surround processors, our units are not pre-configured for a set number of output channels. It offers as many as 32 separate channels.

These may be used to create additional channels for a surround sound system; to improve speaker performance by executing crossover functions in the digital domain; and to feed audio to additional rooms.

All audio outputs of the Goldmund Acoustic Processor are digital, designed to interface with the digital inputs of Goldmund amplifiers and speakers. This configuration eliminates signal degradation that occurs in analog cables.

Sophisticated digital audio processing technologies—many of them unique to Goldmund—ensure maximum possible performance.

The Goldmund Acoustic Processors' input sections and internal software are designed to be upgraded when new audio technologies emerge.

Extreme Multichannel

Goldmund Acoustic Processors offer an unprecedented number of output channels: 16 in the Mimesis 16, and 32 in the Mimesis 32. Each of the channels can be assigned, filtered, and delayed independently as necessary to meet the demands of the system. Compare this to a typical surround processor, which has seven main output channels - each permanently assigned to a certain surround sound channel - plus one subwoofer output channel.

Many of our Acoustic Processors are used in surround-sound systems, where the extra channels can be used to feed additional surround speakers. Each output channel can carry a particular surround sound channel, such as front left, center, right, or surround left or right. The output

channels can also carry a custom-defined mix of channels, so that additional speakers may be added for a more natural, enveloping surround effect.

For example, an extra pair of surround speakers, placed between the side and rear surround speakers, can carry a mix of the side and rear surround channels. The timing of each channel can be adjusted in increments of 0.01 ms, so that the listener hears sounds at precisely the same time no matter from which speaker they originate. Additional subwoofers can also be added, and adjusted so that their sound is perfectly coherent and complementary with the other subwoofers. Using the Acoustic Processors to create additional surround channels in this manner produces an unprecedentedly smooth and natural surround effect, in which the location of each speaker is impossible to determine by ear.

Goldmund Acoustic Processors also offer substantial performance advantages in stereo audio systems. Because each channel can be filtered separately, they can take the place of a conventional analog speaker crossover—but its digital processing ensures a more precise and transparent sound quality than any analog crossover can achieve.

In a Full Epilogue speaker system, the Acoustic Processor devotes a separate output channel to each of four components of the speaker.

The Epilogue 3 module receives only deep bass, the Epilogue 2 receives upper bass frequencies, and each of the two Epilogue 1 modules receives only midrange and treble frequencies. Furthermore, the Acoustic Processor can change channel assignments depending on the audio source. With stereo sources, it sends the same signal to both Epilogue 1 modules in the Full Epilogue stack. With surround-sound sources, it sends center-channel signals to the lower pair of Epilogue 1s in the system, and front left and right signals to the upper pair of Epilogue 1s.

Multiroom audio systems can also be created using our Acoustic Processors. Stereo signals can be distributed to as many as 15 additional rooms, each one independently controllable.

All of these functions may be performed simultaneously by a single Acoustic Processors and it is important to mention that in any configuration, the performance and quality of the stereo system is completely preserved, which is rarely the case in most home theater installations.

Simple Operation

In spite of the Acoustic Processors' internal complexity, their front-panel controls are simple enough for anyone to use. In fact, the primary controls are the same as those found on the simplest audio preamplifiers: one large knob to control volume in the main room, and another to select the input.

They allow connection to touch screen remote controls or home automation systems, thus permitting one-touch operation of an entire audio/video system, along with lighting, motorized shades and drapes, and other home electrical systems.

Goldmund Media Room application

The capabilities of the Acoustic Processors are what gave Goldmund the expertise to create the Media Room, a custom-designed, custom-configured system that achieves maximum sound quality regardless of room shape or decor. The Acoustic Processors' independent output channel assignment, mixing, filtering, and delay capabilities permit Goldmund to design speakers to fit in practically any desired space, and to position the speakers wherever the room design allows—all without sacrificing sound quality. (Also see the White Paper on Proteus).

In the Media Room, some of the Acoustic Processor's functions, such as crossover filtering, can be performed within the amplifiers, thus freeing up more of the processor's channels for additional speakers. Because the amplifiers can be connected together, and their timing adjusted independently, the Goldmund Media Room engineering team has, in essence, an infinite number of channels to work with.