

Field Test: Genelec 8250A/7260A DSP Monitors

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POWERED 2.1 SYSTEM WITH ADVANCED NETWORKING MANAGEMENT

Released in 2004, Genelec's 8000 Series monitors reflected the first major redesign of the company's original and ubiquitous studio monitors — an obvious step forward for the company. The latest version of this product line now includes extensive control for calibration/remote operations, with onboard DSP providing the very definition of detail and flexibility.

LEFT, RIGHT AND BELOW

The 8250s are a two-way design with a proprietary 8-inch woofer and 1-inch metal-dome tweeter. The dark-aluminum enclosure fits in well with control room décor and provides low cabinet resonance, which at high levels could color or even distort a speaker system's acoustic output. Stated specs include a -3dB down-point in the 35 to 21k Hz response. Internal bi-amping provides 150 and 120 watts to the lows and highs for max SPLs of 120 dB at 1 meter.

A "flow-optimized reflex tube" minimizes port turbulence, and — as with rear-ported designs and any speaker in general — placement near a boundary can lead to excessive low-frequency buildup. When using the 8250s with a subwoofer, the ports are nonfunctional, thereby alleviating this possible LF issue. Genelec addresses these challenges by providing extensive written documentation on optimal speaker placement and user control of the system's onboard DSP. Additionally, a bass roll-off control can attenuate up to 6 dB at the 35Hz cut-off frequency to minimize the bass boost associated with boundary placement. A similar control called Bass Tilt acts as a low-shelving filter with the knee placed at 800 Hz, offering more control when dealing with room boundaries. For desktop usage, another LF control cuts 4 dB in the 160Hz range.

Treble-tilt shelves the signal from +2 to -4 dB at 5 kHz. This is useful when using the speakers at various distances from the listening position, enabling control of the HF drop-off associated with distance. These controls only work when the network is not connected and the rear panel switch is set to "manual." But for the most part, I let Genelec's AutoCal™ software run the show, using the recommended, optimized calibrated setting for room control. The rear panel also has analog XLR inputs, digital AES/EBU inputs, digital thru connectors and RJ-45 networking connectors for just about any conceivable situation.

The 7260A subwoofer uses a 10-inch driver with Genelec's proprietary Laminar Spiral Enclosure bass-reflex cabinet, providing a long reflex tube in a small footprint. This design puts the frequency response down to a very impressive 19 to 100 Hz, and the onboard 120W amp pushes the max SPL to 108 dB. This sophisticated sub is fully integrated into the DSP network, with AES/EBU I/Os, variable crossover frequency and full-on bass management for any configuration up to a 7.1 surround system.

The 7260A has RJ-45/Cat-5 connections for running the GLM™ (Genelec Loudspeaker Management) software. One important note: You *cannot* use an analog input to this subwoofer; it only accepts an AES/EBU input. This could be a drawback for some installations. If an analog source is your only available option, then an outboard A/D converter will be

necessary. Genelec has announced an 8-channel A/D converter to address this application, shipping in early 2008.

To get into the sub, AES/EBU single- and dual-wire are supported for sample rates up to 192 kHz. Other useful features include facilities for a separate remote bypass switch, LFE +10dB monitoring for Dolby Digital and DTS encoding formats, a variable bass roll-off (up to -14 dB at 20 Hz), bass redirect for sending content above -120 Hz from the LFE to the center channel, a multifunction warning light and a test-tone generator for phase alignment with 0/90/180/270-degree adjustments to help retain linear response at the critical crossover frequency. All in all, it's a formidable list. All of the previously mentioned hardware controls work only in stand-alone manual mode, but they can be addressed through the GLM software quite readily.

SETUP AND SOFTWARE

The AutoCal automatic calibration system is not designed to override bad acoustics, but it can certainly make a recording engineer's life easier. If you like to start with good acoustic principles, then AutoCal is the icing on the cake.

I began by setting up my audio runs using AES/EBU 110-ohm cabling, which is not provided. The AES/EBU signal heads over to the sub, then one AES/EBU output goes to one of the 8250s while another AES/EBU cable goes from the 8250 that's receiving the initial signal onto the next speaker. AES/EBU channel assignment for the 8250 is then performed in the GLM software, so cable routing is not critical. By the way, the GLM software can control up to 30 speakers on the network. The audio and networking signals are completely separate.

After configuring your audio, the networking setup is straightforward using the provided Cat-5 and USB cabling, and the GLM network interface. An RJ-45/Cat-5 cable goes out of the interface and into any one of your speakers. Similar to the audio setup, a Cat-5 cable runs from the first speaker to the next speaker, etc., daisy-chaining between the monitors. The network cables can go in any order. There's a mic input at the interface for the provided calibration mic, as well as a mic output jack that sends signal into the soundcard on your computer with the included 3.5mm cable.

Once the hardware was ready, I installed the GLM software on my Mac G5. On first use, the network needs to identify each speaker. The software's Rapid Cabling Wizard has 12 common setups, and I used the preset titled "AES/EBU single wire, 2.0, Stereo Pair with Subwoofer," which scanned the system and found all of the speakers.

Now for the moment of truth - running the AutoCal Acoustical Setup Wizard. Before performing test sweeps, you must input your mic's serial number. Single-point or multi-point measurements can be taken; multi-point is used to create a wider sweet spot for multiple users within the same soundfield. Place the test mic at the listening position and press the Calculate button. The software automatically compensates for both the input stage of your computer soundcard and the response of your particular mic.

As the software analyzes the sound, a graph shows what's taking place in real time. As EQ is applied, the graph displays the initial measured response, the applied EQ and the result of the DSP, with the option of saving this optimized response in the setup file. Once loaded and operating, the AutoCal settings can be manually edited, with access to four notch filters, crossover frequency, bass roll-off, level, distance and phase. One group of settings, whether

created manually or with AutoCal, is stored into the speakers as a default (Stored Settings) setup so that the operator can use the speakers in stand-alone (Stored Settings) mode without having to run the software. This is handy for the tech who's setting up multiple rooms with one portable software setup.

A SOPHISTICATED LISTENING EXPERIENCE

With these speakers, tracking, mixing and just plain listening for enjoyment was a welcome treat. On a recent tracking session, the 8250s' level of detail was a most notable characteristic. Minute changes in microphone placement were easily noted when recording acoustic and electric guitars, and percussion. "Air" in the upper end has always been a Genelec trait, and the 8250 monitors are no different. Cymbal harmonics could be heard easily and varied through mic placement. With acoustic guitars, string attack and body resonance were quickly balanced through mic placement while monitoring through these speakers.

Tracking and mixing vocals with the 8250s provided an audio microscope at the console. All the subtle details of mic, mic pre, compressor and EQ combinations are clinically apparent. Using a Groove Tube AM62 tube mic through an Audient Black mic pre and EQ, simple boosts at 8 kHz or in the "air" region above 16 kHz were precisely reproduced, yielding an excellent indication of sounds that went "too far." Solid midrange response gave me a true representation of the critical vocal range and how it will transfer. A 2dB boost at 800 Hz was all that a particular male vocalist needed while tracking, and the Genelecs let me hear these changes.

Creating the "space" on the soundstage while mixing was a joy; the system's imaging is rock-solid. Snares, kick drums, tambourines and any other percussion was reproduced accurately, without splatter or clutter. The lower-midrange/upper-bass region was handled faithfully, providing detailed look into those low-mid reverb buildups that can muddy up a mix. When mixing bass guitars, bowed bass strings and piano, there was a sense of realism that simply brought you closer to the instrument. Mixes made using these speakers transferred well to Tannoys, JBLs, M&Ks and car systems.

POWERING DOWN

With the 8250As/7260A, Genelec has created a system that delivers solid, accurate sound reproduction and exceptional imaging and powerful bass response, while providing cutting-edge networking for ease of use/setup with transferable results. This level of software sophistication and hardware clarity sets the Genelecs apart from the crowd, delivering new standards in performance and calibration capability.

Although somewhat pricey for the project studio, if added to your arsenal, you certainly won't be saying, "If I just had better speakers" for a very long time.

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