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JH Audio Pearl + Ruby

*A groundbreaking advancement
for in-ear monitoring*

REVIEW BY JOHN CZERWINSKI WITH CHRIS DAVIS

From its inception, JH Audio (Jerry Harvey Audio) has been developing and refining its multiple-driver in-ear monitor (IEM) technology to meet the needs of musicians and audio engineers. Last fall, JH Audio launched the Pearl Tri Amp Micro Speaker Management System paired with the new Ruby Universal IEM. According to the company, this pairing offers “unparalleled control to shape and optimize” the IEM audio experience and “reproduce any frequency response or audio signature.”

The Micro Speaker Management System

The Pearl + Ruby bundle comprises the Pearl Tri Amp Micro Speaker Processor, a set of Ruby Universal in-ear monitors, and the proprietary Pearl Control Software. The system offers complete control over gain, phase, time and EQ (high, mid and low) in the Ruby IEMs.

Meet Pearl

The heart of the system is the Pearl Tri Amp Processor—a rechargeable belt pack (roughly the size of a standard wireless IEM transmitter). The Pearl belt pack is solidly constructed and, without a doubt, designed for the rigors of live use.

It is purpose-designed to drive the Ruby IEMs and provide precise digital control over the gain, delay, phase and EQ parameters. Its conversion rate is currently 96 kHz, with 192 kHz pending via a future firmware update.

Audio resolution is only part of the picture as it also boasts incredibly low latency—around .60 to .80 milliseconds—which is imperative for live performers or tracking in a studio.

This low latency is achieved through an actively controlled passive crossover (ACPX). A passive low-pass crossover is also employed in the Ruby earpiece, but control over the low, mid and high frequencies is maintained actively by the tri amp design of the Pearl. This

‘sweetening’ of the passive crossover slopes in the earpiece does not induce additional latency.

I/O

The Pearl employs a 3.5mm input jack, a USB-C connector for programming and charging, and a 10-pin 3-way output connector. Dual LED status indicators provide feedback for the input signal level and the battery status.

The package includes a USB-C/USB 3.0 cable, a 3.5mm adapter cable, a thumb drive with the Pearl software and, of course, a set of the newly designed Ruby Universal in-ear monitors with a Ruby-exclusive carbon fiber case, a selection of ear tips and cleaning tool.

Meet Ruby

Ruby is a universal fit IEM featuring 8Ω quad low, mid and high-frequency drivers with a 10 Hz to 20 kHz +/- 0.5dB frequency response. They connect to the Pearl with the proprietary, robust 10-pin braided cable. A custom-molded version of Ruby is available via special order, but it's worth noting that the red-colored Ruby is not customizable.

Pearl Control and Pearl Loader

The bundle ships with the Windows-only Pearl Control GUI and Pearl Loader software to edit and load audio presets/profiles into the Pearl.

The software interface is clean and well-organized. The main screen is a mixer-style layout with stereo faders for controlling the input and outputs of the three amplifiers. Phase and mute buttons are included for each fader, and numeric values can be entered for precise level adjustment.

Connectivity with the Pearl is noted at the top of the window next to buttons for linking and browsing presets. Users can also save custom presets.

Tabs on the main screen allow editing of each amplifier/band. The low band features two bands of parametric EQ, high-pass and low-pass filters, and the ability to set the delay between the components. These can be ganged together if independence isn't necessary.

The mid and high bands include the same low/high-pass filters and delay, but the mid-band offers four parametric

JH Audio Pearl + Ruby

EQ bands, while six bands are available for the highs. This perfectly tuned, fully in-phase system allows for extensive personal customization.

Would you prefer an entirely flat response or a +9db boost at 40 Hz? Perhaps you'd like to hear how your mix would sound on Auratone speakers, a Yamaha HS8 monitor, or many other examples. Each is a simple click of a button to load the provided preset/profiles into the Pearl. JH Audio provides a host of useful preset curves with the promise of more to come.

The benefit is that users can quickly move between live performance, the studio or mixing on the road, knowing things will translate well to a system of their choosing.

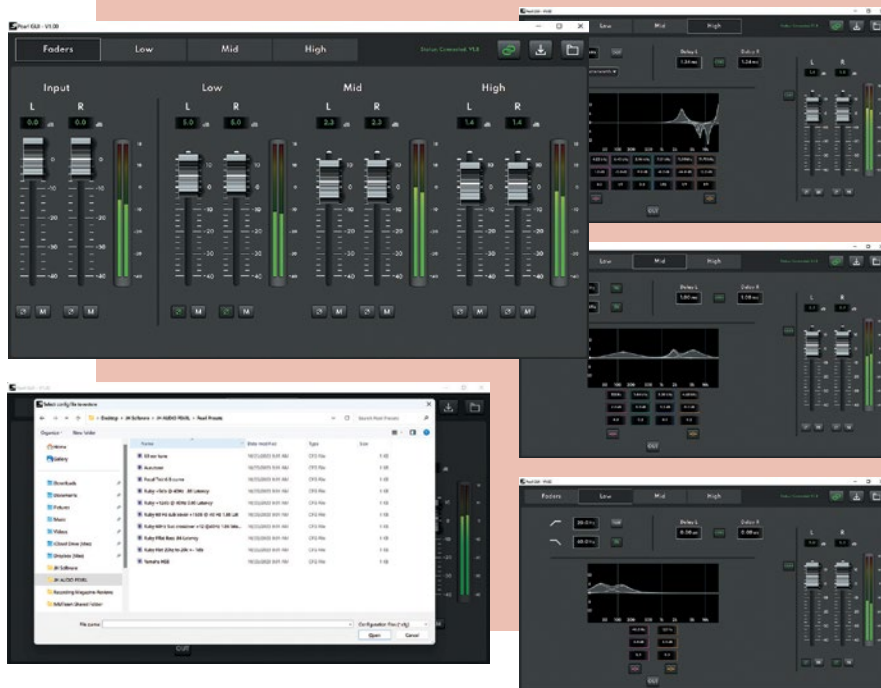
The Pearl + Ruby will also be a blessing for the user who has experienced a degree of hearing loss, as specific curves can be written for the Pearl to compensate for their deficiencies. If you supply them with an audiogram, JH Audio will gladly write a custom preset based on your specific needs.

In Use

For this review, my friend and co-producer, Chris Davis, joined me. Since his studio is Windows/PC-based, we loaded the Pearl software on his system to start. Chris and I played a few reference tracks through the Pearl + Ruby, and we were both blown away.

The tri amp design of the Pearl with the Quad-driver Ruby offers an incredible amount of headroom, clarity and dynamic range. The low-end is deep and powerful. The detail in the mids and highs is exquisite and provides stellar imaging.

More importantly, after trying our hand at mixing through the system in each instance, we both came away feeling like we had made much better mixing decisions that translated quite well to the real world using the Pearl + Ruby. Currently, the Pearl can host only one preset at a time. However, JH Audio says that the ability to host and, more importantly, bounce between profiles should be included in a future firmware



update, which should be even more handy when making mixing decisions.

The supplied Pearl software allows users to get pretty deep into the weeds, and JH Audio provides instructions for self-tuning the Ruby should you want to do so. That said, the included presets should satisfy most users, and as mentioned, JH Audio plans to add more curves in future updates.

In the Ear

The Ruby looks and feels more like a custom-molded design than I expected. They fit in the ear well, and even when using them for periods of about an hour or so, I never found them uncomfortable. That said, I would suspect that most pro users would opt to spend the extra \$200 for the custom-molded version.

Don't just take my word for it; here is what Chris had to say:

"The quality of the product is outstanding, with solid craftsmanship and quality materials. While I found the Ruby monitors themselves to be a bit on the larger/heftier side, I didn't notice the weight once I was wearing them. Whether listening to music or mixing a song, the sound quality was stellar. They could reproduce frequency ranges beyond the material I was monitoring, and I like that they could be further shaped via the software to make very accurate mix decisions. More than once, the Pearl + Ruby system revealed sonic issues that I was unable to discern in my normal mix position using my standard monitors."

Jerry's Vision

According to Jerry Harvey, the vision for the Pearl + Ruby system has been around since he first started developing multi-driver in-ear monitors. "I was trained in tuning large format PA systems," he says, "and I wondered if I could achieve those same results on an individual level for the performer. Back then, though, it just wasn't technologically possible. It took nearly 30 years for battery and DSP technology to become small and powerful enough to make the Pearl feasible."

Jerry also told me, "Several artists have been using prototypes and finished versions for a while now. Mötley Crüe has used the Pearl + Ruby system for more than 90 shows, and we've had 100% positive feedback [from them]. Once [a performer] has used the system, they often say they just can't go back."

Wrap Up

Whether using them live, tracking in the studio, mixing in the studio, or on the go, I am more than inclined to agree that the Pearl + Ruby system from JH Audio is pretty groundbreaking. It combines software, DSP and physical acoustic in-ear design into a landscape-changing IEM technology. 🎧

Price: \$3,500 Pearl + Universal Ruby Universal Bundle;
\$3,700 with custom molds
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