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**PRESS RELEASE**

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**FOR IMMEDIATE RELEASE**

**Decoding the Technological Mastery Behind Waves IONIC 16’s Signature Preamps**

— Waves exhibits the IONIC 16 Stagebox at NAMM 2024 —

*The NAMM Show, Anaheim, CA, January 25, 2024* — [Waves Audio](http://www.waves.com/) (booth #14302 /ACC North Level 1), the world’s leading developer of professional audio signal processing technologies and plugins, is exhibiting the Waves [IONIC 16](https://www.waves.com/hardware/ionic-16), a 16 in / 12 out [SoundGrid](https://www.waves.com/soundgrid-systems) stagebox with superior audio quality, at the 2024 NAMM show in Anaheim, California.

Released in mid-2023, Waves’ IONIC 16 is a 16-in /12-out SoundGrid stagebox, designed to deliver pristine sound at live environments. Specifically, IONIC 16 was created to complement the already-exceptional sonic performance of the Waves [eMotion LV1 live mixer](https://www.waves.com/mixers-racks/emotion-lv1), and is designed for seamless integration with the LV1.

At the heart of IONIC 16 are **Waves Signature Preamps**—designed in-house at Waves, with fully discrete analog circuits, delivering maximum headroom, lightning-fast transient response, and an incredibly low noise floor. Waves Signature Preamps also give you the choice between pure preamp sound, and added rich harmonic enhancement per input, using the analog-modeled HMX harmonic enhancer. The preamps can deliver a completely neutral sound, or HMX’s timeless analog warmth—a rich, full-bodied sound usually found only in high-end mixing consoles, without compromising any of the punch or clarity. HMX can be turned on or off per input, providing the optimum sound for every channel.

Waves’ CTO Meir Shashoua, Senior Product Manager Yaniv Litmanovich, and Rich Cabot, Senior Research Fellow in R&D (PhD, PE), each remark on Waves’ approach to crafting the best-sounding preamps, and the unique qualities that distinguish exceptional electric circuits in the pursuit of the highest sound quality:

CTO Meir Shashoua, who co-founded Waves together with Gilad Keren almost three decades ago, describes the technical expertise and attention to detail that went into the development of the IONIC 16 stagebox: “The development of this product was a testament to the team’s technical skill and meticulous attention to detail. We combined novel technology and the highest quality components in order to achieve the utmost in clean and precise sound.”

“When Rich Cabot joined Waves,” he continues, “he brought with him a mission to elevate the company's hardware capabilities. As one of the founders of Audio Precision, Rich is a world-class analog designer with extensive experience in audio. IONIC 16 marks his first product release with Waves, and it certainly lives up to his high standards.”

“Our principal idea,” Meir adds, “was to develop the purest clean preamp possible. Rich embraced the challenge, and the result is stunning. The resulting preamp is remarkably clean and pure, with an exceptional dynamic range. In fact, the preamp proved to be so clean, that Yaniv Litmanovich, IONIC 16’s Product Manager, felt that there was room for some added harmonics. So, we decided to keep the exceptionally clean design as an option you can choose, and add another option for harmonic enhancement by way of analog modeling.

Years ago, Yaniv and I were among those who developed Waves’ earliest analog modeling plugins, and since then Waves has gained significant expertise in this field. The great thing about it is that Yaniv could tweak the sound to his exact specifications, controlling the exact amount of odd/even harmonic and their frequency content. The HMX module in the IONIC 16 allows users the ability to add analog modeling at their discretion.”

He continues, “During the development, we also made sure to pay close attention to technical specifications such as distortion, noise floor and clock accuracy. This, coupled with a phenomenally clean analog circuit and precise tuning, resulted in a truly exceptional product that offers users a precise and versatile tool for attaining their desired sound—at least as clean, if not more, than leading comparable interfaces on the market.”

Yaniv Litmanovich, who oversaw the development of IONIC 16, sheds light on the process and inspiration behind the product: “Our experience crafting engines for analog-modeled plugins like Waves NLS, which use similar concepts for creating optimal analog-style harmonic distortion in a CPU-efficient way, proved to be invaluable when tweaking and tuning the IONIC 16 to achieve the desired sound. Graphs that display the noise floor and harmonic distortion of the product, when being compared to leading interfaces, showed impressive results, to say the least. When repeating the signal, the harmonies reach almost to the end before distortion commences, which is a clear indication to the product’s exceptional quality. I aspired to add the same level of excitement one gets when working for example with vacuum tube-based preamps. These preamps tend to have distinctive characteristics and a unique color that enhances a wide range of musical instruments. They add character to bass, shine to guitars, and enhance the vocals. The balance between even and odd harmonies makes it possible.”

Yaniv continues, “The IONIC 16 uses 32-bit processing, which provides ample headroom and dynamic range without the need to reduce either. Rich’s past experience in modeling and R&D at Audio Precision are evident in the resulting clarity and quietness of the IONIC 16.”

“The analog circuits that Rich Cabot had designed are truly phenomenal,” Meir Shashoua picks it up. “Two techniques that have revolutionized the industry are circuit modeling and testing. Rich utilized both angles to create a remarkable product by designing an analog circuit that is as clean, if not more than leading interfaces available in the market today.”

Rich remarks, “The front end was designed for a very wide dynamic range: the mic input (XLR) can handle +27 dBu before clipping. Equally important, it can handle massive common mode interference without driving the input into misbehavior. The front end incorporates very-low-noise discrete transistors to ensure that the other end of the dynamic range equation was optimized. A user will appreciate the headroom in that the transients will not clip, and one can choose between a super-clean tone, or a warmer, more analog sound like in a classic console.”

About his philosophy when it comes to building the ultimate preamp circuit, Rich comments,“First and foremost is to listen to people. I leveraged my industry contacts to pick the brains of users, systems designers and other design engineers. I asked them what they valued in the input channel of a console, and which ones on the market they and their clients liked best. Even more important was *why*: What was it that made those products special? Where was there room for improvement? The most crucial objective was to create the absolute best circuit possible, resulting in the best IO!”

He adds,“I worked closely with the Waves team, making sure that the product fit the requirements of the Waves customer base. Meir developed the digital distortion modeling that’s built right into the hardware so it doesn’t consume plugin resources. Yaniv’s critical ear fine-tuned the algorithm parameters to get a classic analog sound that must be heard to be believed. This required me to perform at my absolute best in order to match Waves’ proven high standards. Also, as far as manufacturing, this is the first analog product Waves has produced in its new manufacturing facilities. We developed an automated test system for the production line, as well as burn-in facilities in order to catch any ‘infant failures’ before the units reach the customer. The Waves commitment to quality is evident in the large amount of resources that have been invested in these stages.”

“The unique advantage of IONIC 16,” Rich adds, “is that it handles bigger signals. This is a unit that does not have restraints. The user can be confident: as long as you adjust your input gain you are good to go. We made certain that every link in the chain is designed carefully so that no link in the chain is weaker than others, the signal makes its way through each stage. This ensures that Waves Signature Preamps have enough dynamic range to handle your audio correctly.”

He continues, “Selectable input impedance and digital distortion modeling allows the IONIC 16 to mimic the sound of a wide range of consoles and preamps, or to behave like the proverbial ‘straight wire with gain.’ High-input impedance mode offers another benefit: It’s not uncommon in live sound to have the FOH and the monitor engineers demand their own completely independent signal chains. Putting a Y cable on each mic and driving two inputs can result in the mic seeing too heavy a load. The high impedance mode also allows IONIC 16 interfaces to be paralleled with consoles or other input devices without affecting the sound of the mic. Furthermore, this unit enables your mic the option of sounding like your cherished console. Or you can just turn it off. The beauty of it is that if you were to use plugins to reach this result, it would burn resources.”

Rich adds, “We designed the board with great care, focusing on the wiring so that it would not affect the sound. Live sound is very demanding: close-miked vocals, kick drum, condenser mics, all conspire to produce very high output levels. The IONIC 16 can handle those with ease and its preamps rock. They will handle anything you throw at them and simply sound amazing!”

Meir Shashoua sums it up: “With the innovative circuitry of the IONIC 16, coupled with the HMX harmonic enhancer, Waves has successfully created a new standard in the world of high-end professional stageboxes. With its Waves Signature Preamps, precise control over the even and odd harmonies, its dynamic domain, how they behave, and their spectral domain, the IONIC 16 is a product that we meticulously designed for users to deliver exceptional sound quality.”

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Photo file 1: Waves\_IONIC16.JPG

Photo caption 1: Waves IONIC16 stagebox

About Waves Audio Ltd.:

Waves is the world’s leading developer of audio DSP solutions for music production, recording, mixing, mastering, sound design, post-production, live sound, broadcast, commercial and consumer electronics audio markets. Since its start in the early ‘90s, Waves has developed a comprehensive line of over 250 audio plugins and numerous hardware devices. For its accomplishments, Waves received a Technical GRAMMY® Award in 2011 and an Engineering, Science & Technology Emmy® Award for its Waves Clarity Vx Pro plugin in 2023, and its early flagship plugin, the Q10 equalizer, was selected as an inductee into the TECnology Hall of Fame.

Increasingly leveraging pioneering techniques in artificial intelligence, neural networks and machine learning, as well as the company’s three decades of accumulated expertise in psychoacoustics, Waves technologies are being used to improve sound quality in a growing number of market sectors. Around the world, Waves’ award-winning plugins are utilized in the creation of hit records, major motion pictures, and top-selling video games. Additionally, Waves now offers hardware-plus-software solutions (including the revolutionary eMotion LV1 mixer) for professional audio markets. The company’s WavesLive division is a leader in the live sound sector, spearheading the development of solutions for all live platforms. Products from Waves Commercial Audio enable A/V system integrators and installers to deliver superior sound quality for corporate, commercial, government, educational, entertainment, sports and house-of-worship applications. Under its Maxx brand, Waves offers semiconductor and licensable algorithms for consumer electronics applications, used in laptops, smartphones, smart speakers, gaming headsets, TVs and more from industry leaders such as Dell, Google, Fitbit, Acer, Asus, Hisense and others.

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