

# The 2025 Editors' Choice Awards

# the absolute sound

THE JOURNAL OF HIGH-END AUDIO

MARCH 2025

## Wadax Studio Player Streaming DAC and Disc Player



# Contents

ISSUE 358

**the absolute sound**

THE JOURNAL OF HIGH-END AUDIO



**17**

## **Editors' Choice Awards, Dedicated Room Edition**

We bring you our top recommendations—complete with mini-reviews—of the very best speakers, amplifiers, DACs, turntables, cartridges, cables, phonostages, equipment racks, AC power conditioners, room treatments, and more!

## **Equipment Report**

**160**

## **Crystal Cable Infinity Power Cords and A.R.T. Electro-Magnetic Treatments**

Jonathan Valin considers a pair of products that dramatically lower the noise in an audio system.

**12**

## **Letters**

**14**

## **From the Editor**

Robert Harley reports on a new high-end store in Dubai designed to bring audio culture to the Middle East.

**195**

## **Manufacturer Comments.**

**200**

## **Q&A**

Neil Gader chats with Michael Manouselis, President, Dynaudio Americas.

**166**

## **Wadax Studio Player Streaming DAC and Disc Player**

The Spanish company Wadax has somehow distilled the soul of its \$465k six-chassis Reference digital-playback system into a single more affordable component. Robert Harley offers a full assessment and interviews Wadax founder Javier Guadalajara.

# ONE BOX WONDER

## WADAX STUDIO PLAYER STREAMING DAC AND DISC PLAYER

ROBERT HARLEY • PHOTOGRAPHY BY WRIGHT-STEEL

**R**egular readers will know that I'm a big fan of the Wadax Reference digital products. Their sound quality is unmatched in my experience, delivering a warmth, ease, dimensionality, resolution, and timbral realism that are the state of the art in digital playback.

But there are two big problems with the Wadax Reference products—their size and cost. In the full-blown configuration of the Reference DAC with dual outboard power supplies, Reference Server, Reference PSU (the Server's optional outboard power supply), Reference Transport (review pending), and the proprietary Akasa optical interface, the system consumes six massive chassis, weigh in at a combined 472 pounds, and have a cost approaching a breathtaking half-million dollars.

Now, in a single stroke, Wadax has condensed the proprietary technologies pioneered in its Reference Products into a single chassis in the new Studio Player reviewed here. This one-box product combines a DAC, streamer, CD/SACD disc transport, and volume control. Simply add an internet connection, power amplifier, and speakers and you have a complete playback system. The Studio Player's price is \$39,800, less than one-tenth the Reference system's cost.



## WADAX STUDIO PLAYER STREAMING DAC AND DISC PLAYER

How much of the Reference products' performance has been incorporated into the Studio Player? That's the question this review will explore. An enticing detail is that the Studio Player's DAC circuit is identical to that of Wadax's \$175k Reference DAC, but with a less elaborate implementation. Fortunately, I'm able to directly compare the full suite of Reference products with the Studio Player. It should be interesting.

Three of us from *The Absolute Sound* heard the Studio Player at its introduction in Munich last year, and to a person we were greatly impressed. The Studio Player directly fed a pair of Audio Research's new 330M monoblocks (watch for JV's upcoming review), which drove Magico S3 2024 loudspeakers, all connected with Shunyata's new affordable Theta interconnects and speaker cables. As someone with many hundreds of hours of listening time with the Wadax Reference components, I could hear the Wadax "DNA" in the sound. Tom Martin remarked that within seconds of hearing the first piece of music he had the impression that something was fundamentally right about the sound. Tom, Alan Taffel, and I singled out this room as one of the best-sounding in Munich, which is saying a lot in a show packed with vastly more expensive systems.

### DESCRIPTION

The Studio Player's casework is unmistakably Wadax, with a close family resemblance to the Reference products. The Studio Player, however, is more streamlined and conventional looking than the polarizing styling of the Reference components. The front panel is dominated by a 5" color touchscreen that controls all functions. The Studio Player can also be controlled by the supplied ultra-slim remote control, although you'll need to use the touchscreen for setup. Beneath the touchscreen is a disc drawer for CD and SACD playback, which glides in and out with silky smoothness.

The rear panel holds a pair of XLR analog output jacks. No RCA analog outputs are provided, although an option provides RCA outputs as well as a headphone jack. There are three digital output jacks in case you want to use the Studio Player as a streamer or disc transport (AES/EBU, RCA, BNC) as well as two clock inputs. The two clock inputs and optional power-supply jack allow the Studio Player to be upgraded as your budget permits.

The Studio Player can connect directly to Spotify, Qobuz, and Tidal through their native apps, with more streaming services on the way. The Studio Player is also one of the first streamers to support Tidal MAX, a new option that provides for up to 192kHz/24-bit playback through Tidal. Within the various streaming apps, you can see artwork, select music, and create playlists. Wadax has applied for Roon certification, but at press

time the Studio Player is not yet a certified Roon Endpoint. The option of streaming from one of the streaming services directly is a feature that's friendly to non-audiophiles in the household. Any user logged into the network can send music or playlists to the Studio Player through the native Spotify Connect, Tidal Connect, or Qobuz Connect apps. MQA from both disc and streaming is supported, as is DSD streaming (DSD64, DSD128, DSD256). (Note that MQA decoding isn't provided on the digital outputs because of digital rights restrictions.) The Studio Player is UPnP compliant and incorporates AirPlay. This latter capability allows you to stream from a TV to the Studio Player, with the Studio Player acting as the audio device to reproduce soundtracks from Netflix, Prime, and any other AirPlay device for improved sound quality. For example, if you have an AppleTV streaming box, you can select the Studio Player as the audio output device in the setup menu and enjoy movies and television shows in much greater fidelity through the Studio Player's vastly superior DAC, power supplies, and clocking. The

only requirement is that the Studio Player and AppleTV must be connected to the same network.

Qobuz, Spotify, and Tidal, in their "Connect" mode, as well as when used with a music-management app like Roon, are clocked by the master clock inside the DAC—a good thing. But AirPlay is the opposite; it wants to be the master clock to which the DAC locks, an arrangement that introduces jitter. This applies to any AirPlay device, from an iPhone to AppleTV, to Macs, and to iPads. To sync the DAC to the incoming data stream, the typical method is to use an asynchronous sample-rate converter (ASRC). The problem with an ASRC is that it resamples the incoming data

so that it can output data at a known and precise sample rate to which the DAC can lock. That means that it changes the sample values, introducing small amplitude errors in the output signal. This was unacceptable to Wadax, so they designed a proprietary AirPlay implementation that allows the DAC to be the master clock without an ASRC. Wadax reports that in their listening tests, their method is significantly better sounding.

The front panel provides a wealth of set-up adjustments. One setting is whether the Studio Player has a fixed or variable output level. The former is for using the Studio Player with a preamplifier, the latter when driving a power amplifier directly. When in the variable-output mode, you can select the size of the steps in the volume adjustment. When I started using the Studio Player, I found the volume step sizes a little too big but easily reduced the step size, which made it easier to dial-in the precise volume I wanted. You can also set the nominal output level to 1V, 2V, or 4V (2V is the standard output level of DACs). Other adjustments include the player's output impedance, polarity inversion,

The Studio Player benefits from Wadax's proprietary "musiC 3" feed-forward error-correction system.





## WADAX STUDIO PLAYER STREAMING DAC AND DISC PLAYER

balance control, and the default playback layer of hybrid CD/SACD discs. When streaming, the display shows the album art and volume level. When playing a disc, the display shows track and time information.

### DESIGN

As with Wadax's Reference products, the Studio Player is built to a very high standard of construction. It is made from more than 4500 discrete parts distributed over 40 separate printed circuit boards. The power supply is elaborate, with distributed regulators next to the circuits they supply. There are five stages of initial DC regulation followed by 30 local regulation stages.

A power supply regulator smooths out any fluctuations in the DC voltage that supplies a circuit. A large number of regulation stages better isolates the subsystems from each other as well as delivering cleaner DC to the audio circuits. Cascaded regulation, in which the output of one regulator feeds the input of another, results in smoother and quieter DC. Indeed, Wadax claims the total noise on the voltage rails is  $0.5\mu\text{V}$  (1Hz–100kHz), an astonishingly low figure. This is a very sophisticated power supply by any measure.

The Studio Player benefits from Wadax's proprietary "musIC 3" feed-forward error-correction system that operates in the time domain. According to Wadax, "by mapping the error mechanisms of a chosen DAC chip under load using Adaptive Delta Hilbert Mapping, we can develop an algorithm that examines the incoming signal and calculates the induced error (both linear and non-linear) that will result. By applying an inverse signal at the input, we can real-time correct for the time and phase error that is so musically destructive in other, conventional decoding systems. This process requires a massive number of mathematical operations and a considerable data transfer rate of 12.8GBytes/s. Processing is done at 128-bit internal resolution to precisely render the output and generate the smallest feed-forward corrections." This Wadax-developed technology has proven itself in the Reference DAC.

As I mentioned previously, the Studio Player's DAC circuit is the same as that in the Reference DAC, but without the cost-no-object implementation. It is a fully balanced dual-mono design with complete physical separation of the left and right channels in both the analog and digital domains. The balanced DAC operation is why the Studio Player has only balanced outputs; the performance would be compromised by summing the two halves of the balance signal, or simply discarding one phase (which is sometimes done). The DAC stage benefits from the topology developed for the Reference DAC, as well as from the use of the same approach to clocking and power supply design but imple-

mented within space and cost restrictions. The Studio Player's DACs are on modular boards that can be replaced in the future as technology improves.

An unusual feature is the ability by the user to adjust the Studio Player's output impedance. This feature, also found on the Reference DAC, allows you to better electrically match the Studio Player to the power amplifier it is driving. It's a subtle difference but meaningful at this level of performance.

The Studio Player is solidly built, weighing 66 pounds out of the carton. The build-quality and fit 'n' finish are exceptional. It's also very easy and pleasant to use daily.

### LISTENING

I auditioned the Studio Player primarily in its variable-output mode driving the CH Precision M10 amplifiers directly through AudioQuest Dragon interconnects. Being intimately familiar with the sound of Wadax's cost-no-object Reference digital playback system, I was eager to hear its technical and spiritual descendent through the same playback system—Wilson Chronosonic XXV loudspeakers driven by the CH Precision amps.

It was immediately obvious that the Studio Player was cut from the same sonic cloth as its antecedent; the Studio Player shared a similar sonic signature to that of the Reference system.

Specifically, the Studio Player had fabulous bass—extended, full, warm, and rich. This tonal foundation set the stage for the Studio Player's overall density of tone color and saturation of timbre. This is one quality I greatly appreciate in the Reference products, and now in the Studio Player; the Wadax products don't have the characteristic thinness of tonal density and bleaching

of tone color so common in digital. The weight and textural density in the bottom octaves through the lower midrange establish the player's overall warmth. The Studio Player avoids a common shortcoming of digital—a threadbare character in the mid-bass that bleaches tone colors like an overexposed photograph,

The Studio Player avoided another drawback of digital—a bottom end that has weight but no textural detail. In many digital products, there's plenty of energy in the bottom end, but the presentation sounds a bit mechanical, lacking the inner detail that reveals the mechanism that produced the sound. Two reference-quality tracks for assessing this attribute are the famous Ray Brown release *Soular Energy*, along with "Blue Bossa" from Brian Bromberg's *Wood II*. On the Ray Brown album, the Studio Player not only reproduced the full weight and inner detail of Brown's instrument; it also conveyed his unmatched sense of swing (you can also hear him swing hard on the terrific *Duke's Big 4*). Bromberg's solo acoustic bass performance covers an amazingly wide scale, revealing any anomalies between registers. The

The Studio Player avoided another drawback of digital—a bottom end that has weight but no textural detail.





## WADAX STUDIO PLAYER STREAMING DAC AND DISC PLAYER

Studio Player's highly resolved bottom end reveals nuances of expression in dynamics, timing, and timbre that add to the sense of hearing music-making. The acoustic trio album *The Rite of Strings* by Jean-Luc Ponty, Al Di Meola, and Stanley Clarke features some intricate unison passages between all three acoustic instruments (violin, guitar, bass). Through the Wadax Reference system, and now through the Studio Player, I could clearly hear the pitch and dynamics of Stanley Clarke's acoustic bass rather than a slow and muddled blur. The Studio Player beautifully revealed the timing precision of these three superb musicians. This quality added to the sense of liveliness and musical energy.

The Studio Player's midrange manages to sound rich, warm, and dense in tone color without being overly romantic. I attribute this quality to the Studio Player's purity of timbre and its lack of grain, edge, and hardness. The Studio Player's freedom from a hard and glassy edge on forte piano passages was evident on the beautiful solo by Rachel Z on the track "Inamorata" from her album *Sensual*. I can't overstate how important the Studio Player's smoothness and liquidity of timbre is to its overall sense of ease and ability to become absorbed in the music. Without the whitish grain and metallic edge overlaying timbres, music listening is so much more involving because one's attention is on the performance without having to listen past the artifice. The rich density of timbre and lack of grain gave the music a natural and organic sound that promotes the experience of engaged relaxation, of slipping into musical immersion quickly and deeply. In fact, that's perhaps the best barometer of a component's quality—along with the urge to continue listening long past the planned time of the session.

Similarly, the treble is smooth and extended yet infused with detail. On the Rachel Z album, drummer Omar Hakim (Rachel Z's husband) provides some delicate and sympathetic percussion that the Studio Player reproduced with gentle ease. Listen, for example, to the sensitive and perfectly balanced ride cymbal accents on the title track. The cymbal shimmers with a wealth of inner detail without a trace of hardness or glare. Moreover, the Studio Player resolves the cymbal's inner detail as it decays. For another example of the Studio Player's purity of timbre, check out Roy Hargrove's trumpet on Jimmy Cobb's *Jazz in the Key of Blue* on a Chesky SACD. This is perhaps the best-recorded trumpet sound I've heard, and the Studio Player reproduced it with a bell-like clarity and freedom from artifact that were breathtaking.

The Studio Player's great achievement is delivering this smoothness and ease without sacrificing resolution. The resolution is presented not as sonic detail, but as musical expression. It's not resolution that's thrust at you and calls attention to itself. Rather, the resolution is in subtle details that reveal the inner character of an instrument's timbre, the low-level decay of a

cymbal, a vocalist's unique turn of a phrase that adds poignancy to a lyric.

Although the Studio Player has a highly refined and sophisticated presentation, it doesn't lack rhythmic drive and power. It can convey the high energy of a great band hitting on all cylinders. In addition to the fabulously weighty bass mentioned, the Studio Player has exceptional transient speed and dynamic agility. You can hear this in the way a bass guitar and kick drum work together to create a whole-body rhythmic flow. Listen to the track "Hands On" from Bob James' *Morning, Noon, and Night* to hear the Studio Player's dynamic prowess unleashed. Or how the Studio Player conveys the electric energy of Diana Krall's first-rate band on *Live in Paris*, here played via SACD in the Studio Player's disc transport.

Finally, we come to a quality that distinguishes Wadax from other digital products—dimensionality. The first time I heard the Reference DAC I was taken aback by the soundstage's depth and three-dimensionality. The Studio Player continues that legacy,

not just with depth and layering but also with a tangible sense of air between images. Images appear in the soundstage spatially distinct from other images, as separate entities rather than fused into the soundstage fabric. A recording with an amazing sense of space is *The Astounding Eyes of Rita* by the Tunisian oud master Anouar Brahem. The unusual instrumentation combines this ancient Middle Eastern instrument with bass, percussion (the darbuka and bendir), and bass clarinet. This ECM recording is spectacular in its dimensionality, with tangible air and the instruments lighting up the surrounding acoustic. Through the Studio Player, the playback system completely disappears, with images detached from

the speakers and precisely located in space. The fabulous bass clarinet solo on the nine-minute title track also exemplifies the Studio Player's richness and density of tone color in the lower registers, conveying the delicious deep woody character of this instrument. This recording also revealed how the Studio Player makes images suddenly appear in the soundstage in a way that is sometime startling—the entrance of the percussion, for example. I attribute this to the Studio Player's transient speed as well as the utterly silent background.

As great as the Studio Player sounds, it is unsurprisingly not at the same level as the Reference system. That \$465k package has deeper and more precise bass, greater dimensionality, and even smoother textures. But I'll share with you an experience I had on more than one occasion that puts the difference into perspective. Many times, I was in a listening session at night for pleasure (not critical listening) and would completely forget that I was listening to the Studio Player and not to the usual Reference System. That's how musically involving it is. When reviewing a "lesser" component in place of your reference component,

Through the Studio Player,  
the playback system  
completely disappears.

## WADAX STUDIO PLAYER STREAMING DAC AND DISC PLAYER

there's the tendency to feel something is missing and to want to finish the evaluation so that you can go back to hearing the system at its maximum performance level. The greatest testament to the Studio Player's fundamental musical rightness is that I spent many evenings completely immersed in the music and didn't give a second thought to the Reference system sitting in my rack unused. And remember that this comparison was made within the context of an ultra-high-resolution system of the Wilson Chronosonic XVX driven by state-of-the-art CH Precision amplification.

### CONCLUSION

I'm thrilled that Wadax has distilled the technology and "soul" of the Reference system into the convenient, easy-to-use, and relatively affordable Studio Player. It's a wonder that they managed to combine a streamer, DAC, CD/SACD player, and volume control into a single chassis while retaining the virtues that have distinguished Wadax's best efforts. The Studio Player is the ideal heart of a compact and user-friendly system—just add a control tablet, power amplifier, and speakers. I also like the fact that it can be upgraded in the future with the addition of an outboard power supply and external clock. Moreover, the DACs are on modular boards that can be swapped if new technologies come along, protecting your investment. Best of all is the Studio Player's sound quality. It has a tonal warmth and body that comes from its rich full bass and midbass, coupled with a lack of metallic sheen in the upper midrange and treble that make for a relaxed and involving listening experience. This ease doesn't come at the expense of resolution; the Studio Player's resolution

is the musical kind that doesn't rely on sonic fireworks. And then there's the outstanding dimensionality and expansive soundstage that better allows the speakers to disappear.

Although not a budget-priced component, the Wadax Studio Player is, nonetheless, a bargain that delivers fabulous sound, sophisticated technology, upgradability, and ease of use in a single chassis. I think of it as The One-Box Wonder.

### SPECS & PRICING

**Disc formats:** CD, SACD

**Streaming:** Tidal and Spotify (more streaming services coming)

**Analog output:** Balanced on XLR jacks, fixed or variable, selectable output levels

**Digital outputs:** AES/EBU, SPDIF on RCA jack, SPDIF on BNC jack

**External clock inputs:** 2 on BNC jacks

**Other inputs:** Optional external power supply

**Display:** Five-inch color touchscreen

**Output level:** Fixed level selectable, 1V, 2V, 4V; variable output level from front panel or remote control

**Dimensions:** 18.9" x 10.45" x 17.1"

**Weight:** 66 lbs. net, 99 lbs. shipping

**Price:** \$39,800

#### WADAX S.A.

Ulises 108, 2A

28043 Madrid

wadax.eu

info@wadax.eu

#### Associated Equipment

**Analog source:** Basis Audio A.J. Conti Transcendence turntable with SuperArm 12.5 tonearm; Air Tight Opus cartridge; Moon 810LP phonostage; DS Audio ST-50 stylus cleaner

**Amplification:** CH Precision L10 linestage, CH Precision M10 power amplifiers

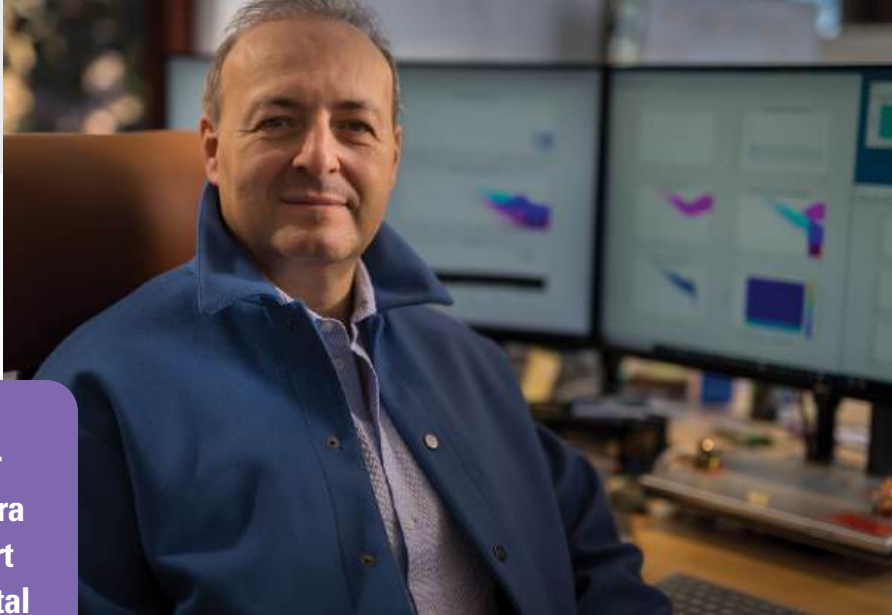
**AC Power:** Shunyata Everest 8000 conditioner, Omega and Sigma NR V2 power cords; Shunyata AC outlets, five dedicated 20A lines wired with identical length 10AWG

**Support:** Critical Mass Systems Olympus equipment racks and Olympus amplifier stands; CenterStage<sup>2</sup> isolation, Arya Audio RevOpods isolation

**Cables:** AudioQuest Dragon interconnects and AudioQuest Dragon Zero and Dragon Bass loudspeaker cables

**Acoustics:** Acoustic Geometry Pro Room Pack 12

**Room:** Purpose-built; Acoustic Sciences Corporation Iso-Wall System



**Wadax Founder  
Javier Guadalajara  
Talks with Robert  
Harley about Digital  
Audio and the new  
Studio Player.**

**I understand that you were exposed to high-end audio from an early age. Tell us about that.**

My exposure to high-end audio began at the age of 14. I was lucky to have two different kinds of exposure, the technical and the commercial, both led by my father (and mentor). Technically, he was a brilliant analog and electroacoustics design engineer, one of a kind I would say. Plus, he was one of the first hi-fi distributors in Spain. In today's terminology, I would call that living a 360° high-end audio experience. I grew up in that environment.

**What is your educational background?**

Observing my father, I realized the significance of having a multi-disciplinary engineering skill set. He demonstrated to me that when the aim is to recreate music in both its formal structure and emotional essence, it requires understanding the interconnectedness of the different domains or disciplines.

So, I pursued different engineering skills. I hold engineering degrees in Telecommunications, Electronics, Signal Processing, and Acoustics. But this is a continuous learning activity, the way leading-edge doctors are continually searching for more advanced treatments to expand their knowledge. In my case, it is to advance our state of the art as in the Reference series or, as in the Studio, make products accessible to a wider audience. The more time I invest in design work, the more it reaffirms this holistic relationship. Every day is a learning experience.

**What was your goal in founding Wadax?**

One of the habits my father taught me as a teenager was to regularly go to live musical events and performances. And then he used to show me the big gap between a reproduction and the live event. Not just the formal difference but more importantly, the excitement difference.

My goal in founding Wadax is to design products that help to narrow these gaps. I'm very happy with what we are achieving from our signal sources, consistent with our brand promise and mission.

**The Reference digital products are filled with some extremely sophisticated and unusual technology. What was your thought behind creating such an ambitious and elaborate digital playback system?**

Looking back, I can say that the digital playback system has been traditionally oversimplified. At university, we were taught that if the bit information is preserved from the source to the D/A circuitry, and standard engineering practices are employed, the playback quality would be as good as that of the D/A converter. But I experienced other factors that according to orthodox engineering practice should not make any difference. But they did. So, I widened my scope to look for other "polluting agents" that could affect digital-to-analog conversion. I found so many of them that I had to split the whole digital playback system into smaller blocks to find, isolate, control, and eliminate these polluting agents. These agents were obscured by the integration of many functions in a single device. We had to separate each function and examine it on its own, starting with the data source, power supply, and conversion. The final step was integrating all the blocks so that they worked in harmony. This was my *leitmotif* in creating the Reference line.

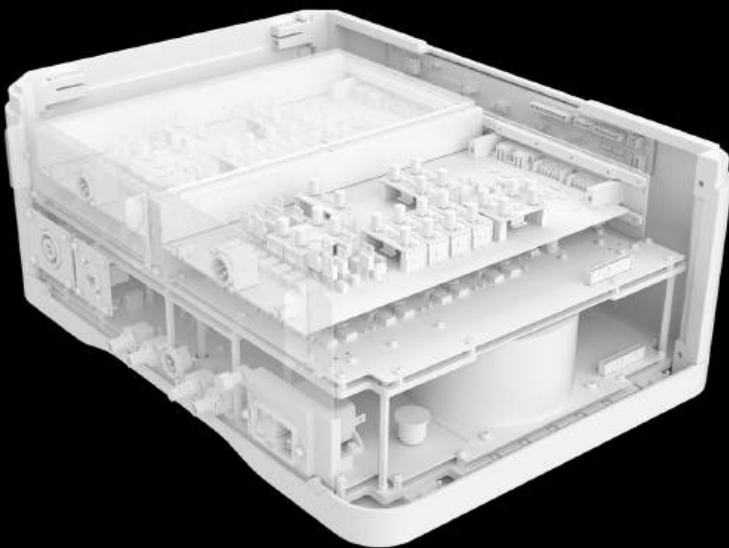
**Was it part of the idea to develop technologies that could trickle down into more affordable products like the Studio Player?**

I was open-minded in the sense that we knew where to start and what we wanted to achieve. Part of the expectation is that once we found, understood, and developed new technologies, we could trickle them down to other products.

**What is an example of a technology developed for the Reference series that's in the Studio Player?**

The D/A conversion circuitry is an example. It remains fully modular, ready to accept any future modules. The musIC process is another example. One way or the other, all different blocks in the Studio Player have been inspired by the long work done for the Reference series.





**You mention the musIC process, a unique feed-forward error-correction technology that's been fundamental to your designs. How does the musIC process work?**

The signal path in the entire digital-to-analog converter has a transfer function which is the relationship between the input and the output. This transfer function is the essence of how the analog and D/A circuitry changes the signal. By modeling this transfer function, it's possible to predict (i.e. simulate) the real output of the whole system before sending the audio content to it. This prediction allows us to identify the desired output and the error that will occur. Conceptually, feed-forward means changing the input data so this change cancels the predicted error.

This is opposite of feedback, where the error needs to be measured at the output to be fed-back to the input. This loop takes some time to be corrected, so the maximum correction frequency is limited, as is the amount of error reduction. Feedback is a cost-effective approach for many applications. In contrast, feed-forward is not inherently limited in frequency, and the error reduction can be as good as the model of its transfer function. But it is also much more costly to design and implement.

**Tell us about the design team at Wadax.**

The design team in Wadax is multi-disciplinary, comprising engineers with different skill sets—system management and digital control, PCB design and integration, A/D signal, industrial/mechanical design, power, optical, prototyping, production, and QC. We have a total team of ten engineers specialized in their respective areas.

I envision the idea or develop the foundation of the core-technology and then work on proof of concepts and prototypes. That work is continued by the team, which I monitor. The level of complexity and performance of Wadax products nowadays requires a team to develop and to keep the pace of the projected road map.

**The Reference Server offers the user the ability to adjust the waveshape of the digital signal. Although the data remains unchanged, these adjustments produce a subtle but meaningful difference in the sound. For many people, that conflicts with the belief that if the ones and zeros are the same, the sound must**

**be the same. What is the mechanism behind that phenomenon?**

This would require a lengthy and technical explanation. But let's make it simpler with the following analogy. Imagine we have two identical one-gallon water buckets connected with a pipe. By physics, we know the water level in both buckets will be the same. One bucket is labeled with the word "source" and the other "D/A." Both buckets have graduated vertical marks that quantify the water level. If we pour a ten-ounce glass of water into the "source" bucket, the level in the "D/A" bucket will rise the same amount as in the "source" bucket. We can think of the water-level rise as the bit information.

Now, we can empty the glass in the "source" bucket smoothly, or we can drop it more abruptly from a given height. This will create perturbations in the "source" bucket that will propagate to the "D/A" bucket in the form of pressure differences in the pipe that will result in ripples at the "D/A" bucket's water level.

After a while, in both cases the "D/A" bucket will show the same water level. But in the short term, there will be a variation (modulation) in the water level shown in its vertical scale. These short-term disturbances will affect the D/A in different ways. Of course, this is a super-simplification of the whole picture, but nevertheless a valid case to illustrate the existence of other disturbances and polluting paths in digital audio transmission that affect sound quality.

These and other phenomena are still neglected by many but fact-checked by others. I always surrender to facts and experiences. It's not mandatory to have obtained an analytic formula to believe in something if I can touch and hear it.

**What's next for Wadax?**

We owe our success to our clients who choose Wadax as the best digital source for its unique musicality and overall experience. Anything in the signal path that improves overall performance and brings us closer to the musical experience becomes a legitimate interest for us.

We will continue with this mission, and have a multi-year plan that will, among other goals, push performance higher and higher. That prospect is thrilling and fun, which is where it should all begin. **tas**

It's not mandatory to have an analytic formula to believe in something you can touch and hear.