

III

KYRON

MUSIC | DESIGN | NO COMPROMISE



G A I A  
EVOLUTION



# Gaia

## Evolution

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## MESSAGE FROM THE CHIEF SYSTEMS ARCHITECT

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I am pleased to present the all new Gaia - Evolution.

Almost exactly 10 years since the launch of the original, Gaia Evolution is the culmination of an intensive research, design and testing program to improve on what was already one of the world's great speaker systems.

I would like to thank our team of talented designers and engineers for their tireless efforts to bring this next generation of audio product to the world. While undeniably descended from the Gaia that won "Best Sound" awards upon release in 2011, the Evolution shows a significant improvement in all areas.

Some of the improvements are easily spotted upon first glance although most are hidden within the internal circuits and structures. The Gaia Evolution is the result of a combined 18 years of dedication to the art and science of audio reproduction and is the ultimate in accuracy, musicality and musical enjoyment.

Leon Suter

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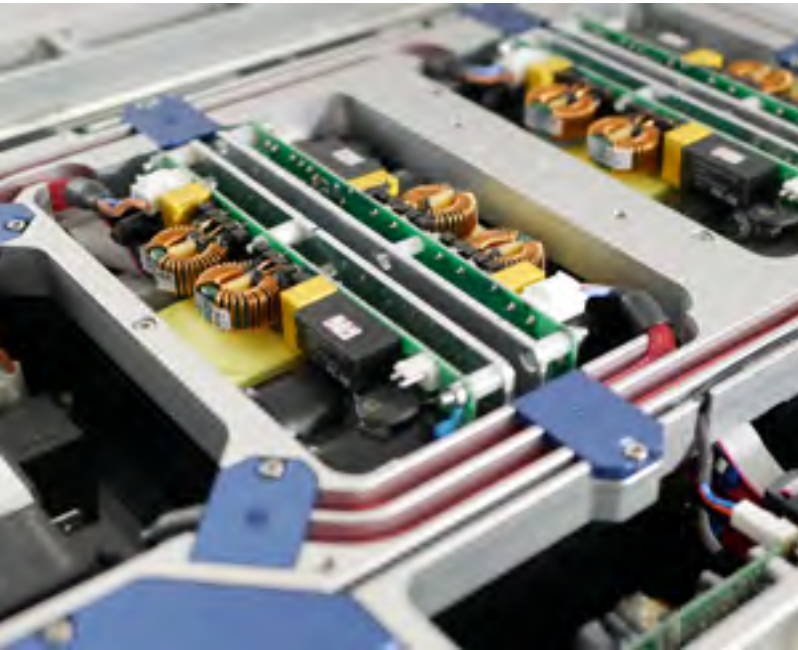
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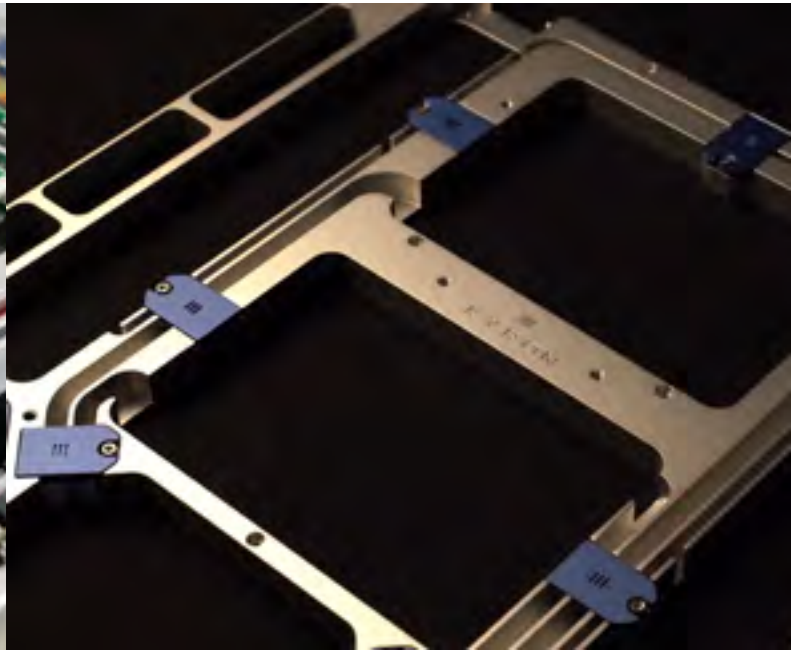
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# GAIA - EVOLUTION

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# G A I A - Evolution

## Remaking an Icon

First unveiled at the 2011 International Hi-Fi show in Melbourne, G A I A quickly became known as one of the best sounding music systems in the world. What many didn't know, is that GAIA was our first commercial boxless speaker design and that it took 8 years of research, development, testing and tuning to create.

Early versions of the prototype included a massive sealed box subwoofer, 4 midrange drivers and an oversized ribbon tweeter. The technology required to create the speaker was only just becoming available and we were moving very quickly to try and test for suitability.

We had already developed an ear for the sound we wanted, or perhaps more importantly, for the sounds we *didn't* want. As professional musicians, we were looking for the accurate reproduction of tone and attack of real instruments, while discarding anything that added colour, resonance or distortion.

Today, the technologies we pioneered and settled upon early in the process are used extensively in the recording studio space... things such as DSP, directivity control and active multi-amp topologies.

Much has changed since 2003 when we began work on the first GAIA, however many of the defining characteristics remain the same as the physics and rationale behind the concept is still exceptional.

The original Gaia was a 3-way design - split as bass, midrange and high frequencies. Our new Gaia is a 5-way system and always includes a sealed subwoofer. To achieve the same volume level of bass as our sealed subwoofer at 20Hz, we would have required 20 boxless woofers! Including the subwoofer in the system design from the start allows for seamless integration, and at no time does it draw attention to itself.





# Gaia - V2 Driver Updates

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*“a number of seemingly small but quite significant updates to each driver to raise the level of fidelity from excellent to extraordinary.”*



The drivers are the final step in the recreation of recordings, moving the air to create variations in pressure our brain interprets as sound. They are a complex structure made up of electrical and mechanical moving parts and as such have the potential for adding distortion.

Every driver in the Gaia system was re-evaluated as part of our V2 Evolution process to ensure the maximum performance was obtained. We made a number of seemingly small but quite significant updates to each driver to raise the level of fidelity from excellent to extraordinary.

## Tweeter

The Gaia has both a front and rear tweeter to ensure that the high frequency balance within the room closely matches that of the midrange and bass. Both front and rear tweeters use the same revolutionary ring radiator motor design, with patents on the phase plug design and the SD-2 Symmetrical Drive motor system.

The ring radiator overcomes some of the design trade-offs of dome design tweeters while helping to more closely match the directional characteristics of the woofers.

For our V2, we developed our own waveguide shape machined directly into the front baffle. The shape has created a smoother response in addition to creating a more seamless and streamlined visual focal point for the listener.



## Midrange Driver

The beating heart of any music system is the midrange, where the vast majority of the audible energy in most music lies. The Gaia midrange drivers were chosen for their incredibly accuracy, vanishingly low distortion and enhanced rear airflow to create the acoustical properties we desired.

The patented SD-3 Symmetrical Drive motor is an under-hung design, and is coupled to a unique patented sandwich cone designed to limit resonances developing that would otherwise colour the sound.

Changes to the rear mounting and airflow and also to the electrical connection and cabling has further enhanced the midrange of our V2 Gaia to give startling midrange tonal and transient accuracy.



## Bass Driver

The bass sound produced by open box speakers is perhaps the most intoxicating and addictive component of our music systems. If ultimate quality is desired, one can not simply take a driver designed for an enclosure and expect it to perform without a box.

Designing a system with no enclosure creates great demands on the driver to move extra air. There is also no trapped air behind it to act as a brake during large movements.

Our bass drivers are custom made specifically for us and include special touches to raise their sonic performance and visual appeal.

V2 enhancements include changes to the suspension to further decrease distortion, silver plated, solid copper binding posts and silicon coated lead out wires for the ultimate in signal integrity.



# Amplifiers

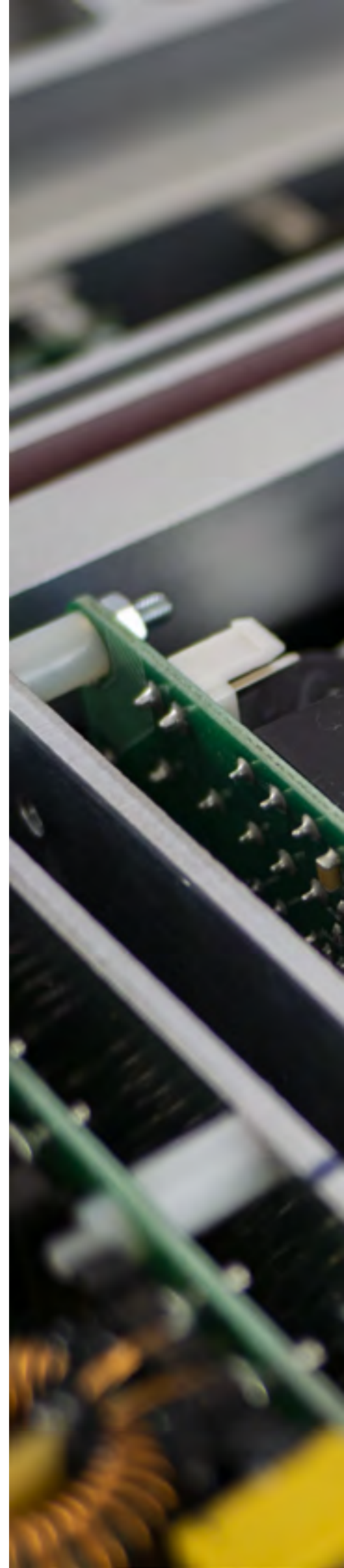
## Power and precision

Like the drivers, the amplifiers need to be exceedingly accurate to deliver on our desire for realistic tone and transient attack of real music. They also need to be powerful enough to move our open box woofers to their full operating range while having exacting control over the start and stop of the signal.

Part of the V2 evolution of Gaia was to isolate the power amplifiers from the line level electronics to lower the noise floor and also to give flexibility in physical placement within the intended listening environment.

The amplifiers have gone through much more of an upgrade than simply a change of location however. The noise and distortion figure has been reduced significantly to a level less than 1/20th of the original design, giving the quietest, blackest background as a canvas for the original recording to be recreated upon.

The final power stage is handled by the patented NCore® circuitry however this only provides half of the amplification. Feeding the power stage is a new Kyron designed amplifier section with extreme low noise and incredible musicality.





# Gaia Amplifier Updates

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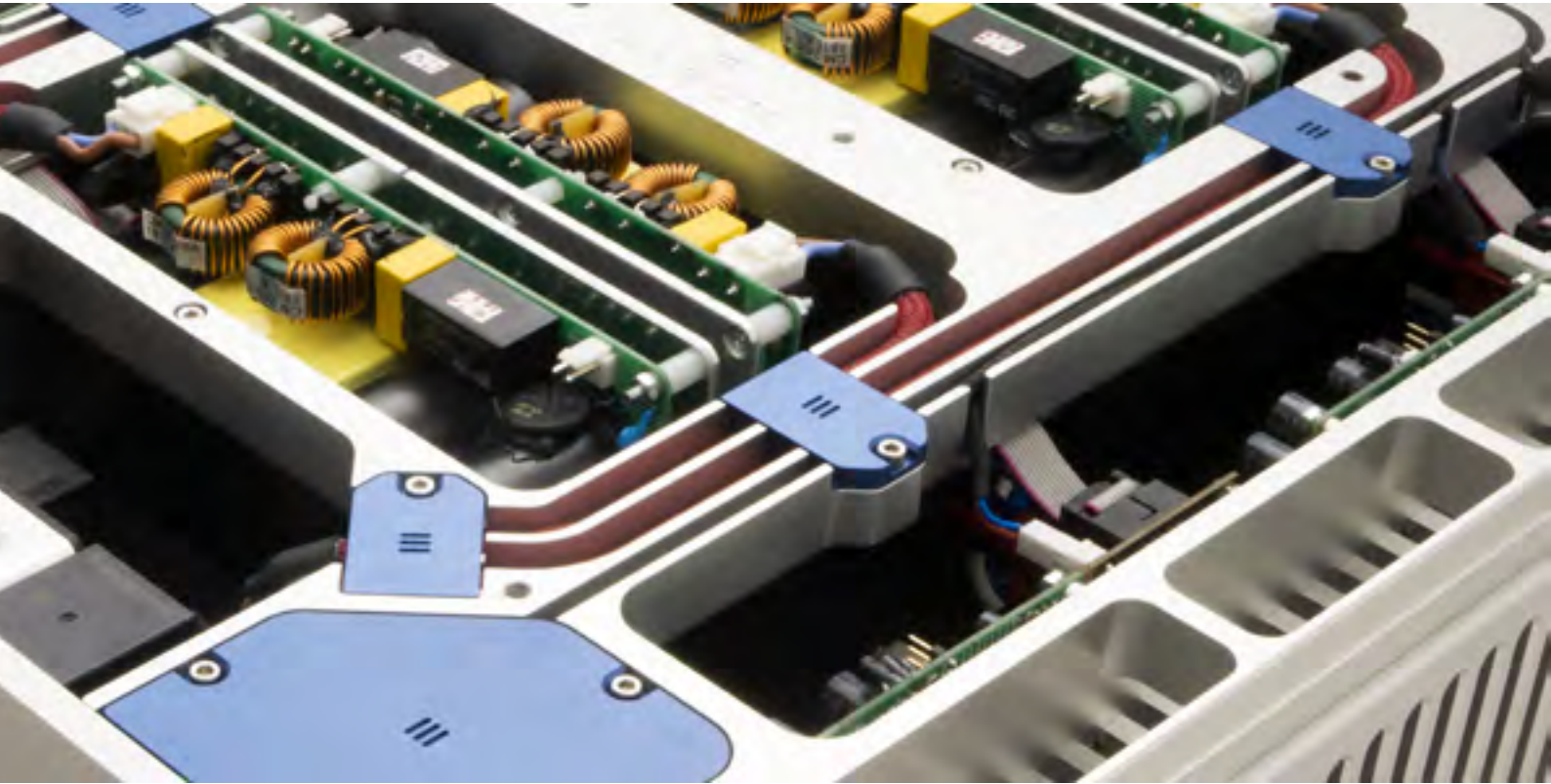
## New Chassis Design

To achieve the ultimate performance from a power amplifier requires that attention is paid to every detail.

The chassis is largely built from one large slab of aluminium, with separate sections for the AC power, power supplies and patented NCore™ amplifiers.

Each cable is carefully routed through the chassis in cable tracks designed to separate the power from the signal, to lessen the noise of the power section degrading the precious audio before being amplified.





Signal cabling utilises extensively shielded, low capacitance and low microphonic cable, ensuring that the intended music signal reaches the amplifiers perfectly intact and without noise.

The Gaia amplifiers are synced to the control unit and will turn on and off when the main power switch is pressed.

There is also a proprietary start up surge current protection circuit that limits in the inrush of current normally experienced when large amplifiers turn on.

## Control Unit Updates

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The Control Unit houses much of the technology that is responsible for the superlative performance of a Kyron music system.

At its core, the Control Unit is a preamplifier, and has inputs for audio source components such as CD Players, Record Players and Network Streamers. Four digital source inputs are available in addition to the asynchronous USB Audio input that accepts high resolution audio up to 192KHz. One balanced and one unbalanced analogue audio input is also provided.

The “brains” of the system is the Digital Signal Processing or DSP which is responsible for providing linear phase crossovers, frequency response correction and group delay correction.

The combination of these elements provides an unmatched accuracy in not only the volume of each sound but also the timing coherence, and is simply not possible without digital technology.

The Evolution GAIA has twice the DSP power of the previous model.

# GAIA - EVOLUTION

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One of the most crucial components of a home audio system is the home, and the Control Unit is equipped with a microphone input to measure and correct for distortions associated with room acoustics.

Every GAIA is installed by a Kyron factory professional, and part of the process is to measure and correct for room acoustics anomalies.

Boomy bass notes are surgically removed from the room to reveal more of the music that was previously hidden by the otherwise unsurmountable room issues.

There are five stereo DACs (Digital to Analogue Converters) utilised within the control unit that converts the corrected signals from high resolution digital into ultra clean analogue.

From the DACs, the signal proceeds through a Kyron designed analogue stage that provides the correction as required for the no box bass efficiency.

The Evolution upgrade has seen our filter stage combined with the amplifier buffer stage, lowering noise, increasing fidelity and raising the level of musicality.

# Gaia - Subwoofer

## Special Edition Mercury

The six long throw woofer drivers on our GAIA music system are capable of moving more air than many concert public address systems. This is necessary due to the relative bass inefficiency of the no box technology that is responsible for the accurate and realistic sounding bass Kyron is revered for.

There does come a point however when fighting against the laws of physics becomes futile. At 20Hz (nearing the lower limit of human hearing in the bass) it would take more than 20 no-box drivers to create the same level of sound as our one subwoofer driver.

The challenge then is to create a subwoofer in a box that integrates seamlessly with our music systems that have been described by industry professionals as the best bass they have ever heard.

A combination of advanced cabinet design, extreme driver engineering, an uber-powerful amplifier and an integrated DSP unit has allowed for bass that hands over flawlessly to the GAIA main drivers.

The GAIA version of our Mercury subwoofer incorporates stainless steel for the leg assembly with matching mirror polished stainless steel spikes. The amplifier-driver connection is done with military spec silver plated copper wire to ensure that the power is delivered in its entirety and the audio signal is delivered with the same low noise, low capacitance, low microphonics cable as used in the Control Unit and Amplifiers.





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BY BEOLA

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