

Linn Products Klimax system

By Alan Sircom

In an issue filled with systems, Linn's latest range-topper is perhaps the most 'systemic' of them all. The Klimax system does not have a high degree of mix-and-match potential; the streamer feeds the digitally active loudspeakers, and any substantial variations on that theme demand stepping back from that top-of-the-range concept, using passive crossovers, separate power amplifiers, and so on. This runs counter to Linn's 'source is in the speaker' ethos, which really has its ultimate expression in this system. We'll come back to that later.

Last year, *Hi-Fi+* looked at the latest version of the Linn Products Klimax DS/DSM network music player with its new Katalyst DAC architecture. As the streamer was partnered in many cases with the Linn Klimax 350 loudspeakers, with its own Exakt room compensating digital crossover network, there was a slight hole in the storyline where those with Linn's top loudspeaker were missing out on the full benefits Katalyst can bring.

This year, the 'architecture' developments in Katalyst have now reached the Klimax 350 loudspeakers, and if the effect was exceptional in the DS/DSM models, it's a total revelation in the Klimax 350. OK, so the name sounds a bit like the title of a rapper's difficult third album ('Klimax 350 Loudspeaker, featuring Katalyst DAC Architecture'), but it's the only real way to explain how this works.

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It's hard not to extend the 'remix' idea out to the products, too, because both streamer and loudspeaker are not new products, but revised, updated, and – best of all – upgradable versions of existing models in the Klimax line. Essentially, as a system, what we have here is a hub-like version of the Klimax network music player, one that only features the RJ45 connections between DS and loudspeaker, with the Exakt – and now Katalyst – processing and the active power amplifiers built into the back of the Klimax 350 loudspeaker cabinets.

But what is Katalyst? Put simply, it's a sophisticated series of power supply checks and balances to ensure the DAC is working as per the original and best intentions of the digital designer. Unlike many digital systems, where digital conversion is effectively dictated by the circuit design laid down by the application board of the chip design company, Linn sought a chip 'fabber' that produces a design that allows the company to drill deep into its power supply and logic feeds, and ended up with a board that doesn't just supply a single voltage to the DAC, but provides two separate voltages for modulation and three for current to voltage conversion, all of which are fed from highly stable and isolated voltage sources. If you consider how important a power supply can be for a product like a preamplifier, the ability to control the power feed of the digital converter to this degree of sophistication makes the chip extremely flexible. Of course, it was handy that Linn liked the sound of that particular chip on audition!

The quality and consistency of that power feed alone makes a big difference to the performance of the DAC, but that's only part of the Katalyst architecture. The signal is fed through a data optimization process (a 16x, 768kHz upsampler working at 35 bit precision, then to a 8x, 6.144MHz modulator) before being passed to an array of bitstream DACs, and finally passed to a revised analogue output driver. A high precision master clock governs the whole digital signal path from upsampler to the main conversion of the DAC array. This data optimization system largely obviates the need for super high-resolution files and DSD, because the upsampling process raises 16/44 to 24/192 PCM files up to such a high performance level internally. If you are keeping up with all things Linn, you may well find this has a lot in common with the Katalyst-strength versions of Linn Klimax DS and DSM digital players, because it's the same concept, in a speaker!

Linn has not been shy to criticise and comment upon what it considers 'closed' formats like DSD and, more recently, MQA, so it's perhaps little wonder that these formats are not supported through Linn's system. In fairness, Linn is extremely consistent in its drive for open source, as it both welcomes third-party app designers and invites loudspeaker designers, engineers, and enthusiasts alike to explore Linn's design tools. OK, so visitors to the factory never get past the entrance to the research and development floor, so 'open source' does not extend to 'open to espionage', but the company is surprisingly and refreshingly transparent in its stance on design. As a result, if you already have a Linn Klimax system with a pair of Exakt-ready active Klimax 350, you can upgrade them to support Katalyst, and you can even upgrade still earlier models with a set of complete Exakt modules. But if you haven't gone down the Linn Klimax 350A route, there are also Exaktbox upgrades for users of some older Linn, Bowers & Wilkins, Kudos, and KEF models. There is even a 'roll your own' concept for designers and builders.

The simplest way of describing this raft of options here is if you have an existing pair of Klimax 350s with the Exakt module, the back plate with all the electronics is taken off, and the cruciform central circuit board (containing DAC and Exakt digital crossover, and associated power supplies) is replaced. The new board looks superficially similar to the old one, but the intervening years have radically improved FPGA designs, and this one now has double the digital horsepower but takes up half the size. This allows the individual subsystems in the board to be more physically isolated from one another, and also allows the Linn engineers greater scope for processing.

To discuss the Klimax DS or DSM network music player at length, we refer you to our review in issue 140, but the slimline version of that review is that of one of the first network players (dating back to 2007, which is equivalent to the early Jurassic era in networked audio terms) to take the format seriously. The Klimax DS player and DSM player/preamplifier were subject to one major revision a few years ago, and the Katalyst updates last year. The player is an elegant standalone streamer in its own right, and the Katalyst upgrades take the already excellent Klimax into new heights. For use in a full Klimax Exakt Aktiv system, though, the full-fat Katalyst Klimax DS or DSM is gilding the lily





► somewhat, as the digital audio conversion is performed inside the Klimax 350 loudspeakers. So, for the last year or so, the best Linn digital audio stream was not the best Linn system, but an analogue Aktiv system with a Katalyst-enhanced Klimax DS or DSM. The source – temporally – worked best outside the speaker.

Order is restored with the Katalyst-upgraded (Katalysed?) Klimax 350 loudspeakers. The Klimax 350 is a large, six-way floorstander that can be run in part-passive operation (with active bass modules to drive the pair of 200mm active servo bass units), but really comes into its own in active digital 'Exakt Aktiv', and now Katalyst Exakt Aktiv operation. It's possible to upgrade practically everything, thanks to a removable rear panel in all models. Those who wish to retain external amplifiers can opt for an Exaktbox, or the whole passive rear crossover panel can be removed and replaced with the latest specification active digital drive.

The drivers reflect the sophistication of the design itself, with a 13mm silk dome super-tweeter, 25mm polyurethane dome tweeter and 75mm polyurethane dome midrange in a single, die-cast '3K Driver Array' chassis sitting above a front-firing port. A 165mm glass-fibre composite cone drives the upper bass, and then that pair of active servo-driven 200mm bass units bring up the rear. This makes for a very 'physical' loudspeaker, big and heavy, but surprisingly less large and unwieldy than many high-end designs. Even with the full amp package in place, the 71.2kg loudspeaker is a two-men-and-a-trolley lift, rather than a team-of-piano-movers dead-weight. When correctly installed, however, the loudspeaker is designed to have precisely zero movement, and a professional installation will make the Klimax seem cemented to the floor.

An advantage to the full Exakt (and now Katalyst) Aktiv system is it includes Linn's Space Optimisation system. This is a graphical representation of the installation, which creates a set of mild DSP tailoring options to deal with room nodes and best suit your speaker to your room. The advantage to this is you no longer need to be pin-point precise in installation, as the Space Optimisation makes up for less-than-perfect room positioning. I'd argue that if you are spending north of £50k on a pair of loudspeakers, you want the installation perfect, but there are times when 'perfect' meets 'domestic pragmatism' and sacrificing the optimum position with Linn's Space Optimisation takes less of a toll. And is cheaper than a divorce!

The Klimax system here is divided into three different potential owners. The first is stupidly easy to resolve. If you have a pair of Klimax 350 loudspeakers with the Exakt modules in place, you will soon have a pair of Klimax 350 loudspeakers with Katalyst DAC Architecture modules in place. This is not up for discussion. You have an already excellent pair of loudspeakers, but if you perform a comparison test between the two modules (which realistically means performing the test between two pairs of Klimax 350, at a dealer), you are about three seconds from placing an order. Seriously: play a piece of music. Play it again, swap the loudspeakers over. Play it a third time. Hand over credit card. The time it takes you to read this sentence is longer than you need to get what the Katalyst can do.

And what those six Katalyst DACs do is bring more composure, more authority, more space, and more, er, music to the music. And it does this to almost any music. I played Linn Records' own Beethoven piece that was so musically ►

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► satisfying a few months ago. This time, the space between the notes that lets the musicianship in was more to the fore (and yes, I am more than aware just how pretentious that sounded), giving not only a real sense of scale to the piano and orchestra, but an authentic sense of the amount of work and practice and musical skill that went into making the performance. If the Klimax system was like a textbook musical performance, then Klimax with Katalyst was the same performance with more high-fives and the musicians pulling a few congratulatory fist-pumps. And the system gets you right in the feels, too: you are moved by the music, and all its blood-pressure lowering musical mastery, but with that sextet of Katalyst DACs in place, the sense of being physically there with the musicians is brought tantalisingly close.

You really can throw everything at this system, rather than just the sanitised, curated output you often hear at audio shows. Yes, it can play all that stuff, and play it rather well (I gave the system a good burst of Buddy Holly's 'True Love Ways' on Sony from TIDAL), but all the stuff that we don't usually play in public; the guilty secrets, like Frankie Goes To Hollywood's 'Two Tribes (Annihilation Mix)' [ZTT, through TIDAL], played at silly levels. Or how it sounded damn fine playing 'Cold' from Stormzy's excellent *Gang Signs & Prayers* album [Merky, also through TIDAL] or the acoustic version of 'Traktor' on the deluxe version of *Black and White* by Wretch 32 [Ministry of Sound]. Maybe Grime isn't your thing, though. I also played everything from Abba, to Biber (the composer of the *Mystery Sontatas*, not Justin... I have some limits), to John Zorn.

In truth, I have to walk a fine line here. If I lay it on thick, you could mistake the tone to say that the existing Klimax 350 is some how a poor loudspeaker that suddenly got good.

On the other hand, if I don't lay it on thick, you'll never quite get just how big a difference this makes. It's a great speaker made greater, but that's not enough. The fact is, however, I admit to 'admiring' the Klimax 350 more than 'liking' it in the past. I thought it detailed, precise, musical... and a little too dry sounding. With the Katalyst upgrades in place, it's still 'dry' in character, but that dryness is more like a well-mixed Martini now (and as someone who invented the Three Martini Breakfast, I approve of this). It doesn't have the lush soundstage of some designs, but where in the past you might kind of miss that broad, large presentation, here you just wonder why all the fuss about soundstage, because it provides all you need and no excess. For a 71.2kg loudspeaker, it's surprisingly fat-free and fast, and that's what you come to really like about these loudspeakers

I'll finish up for the existing owners in saying this; get in quick! Once word gets out just how big a jump this makes in the Klimax 350 performance, every existing Klimax 350 owner will want the upgrade and want it right now, and if you aren't first in line, you might be waiting. That will be extremely frustrating! You will go home after an audition to what was once the best loudspeaker you knew of, which is now the promise of an even better loudspeaker. See what I mean about walking a fine line?

Those wanting a damn fine system with no pre-existing Linn Konditions are a little more nuanced in approach, but not much. In a way, the complete Klimax system makes multiple arguments at once: it makes a case for the Linn way of doing things, it makes the ultimate expression of active, Exakt, and Katalyst performance, and it suggests why that "the source is in the speaker" tag line actually makes quite a lot of sense when you listen to the ultimate expression of that concept. ►





In a way, coming to the Linn system entirely 'cold' (as in, with no strong 'dunking' in the pre-conceived notions of what 'good audio' supposedly is and isn't) is the best way of hearing precisely what this system does best. That way, you don't get caught up and bogged down in 'audiophile' ideas of good sound and get lost in striving for 'limpid pools of pellucidity' instead of opting for equipment that sounds good on a more fundamental level. The full-on Linn Klimax system at its best asks difficult questions about what we want from a good system, and many seeming audiophile-friendly systems simply fail to answer those questions.

My expectations of how big a change Catalyst would bring to the Linn Klimax 350 speaker system were largely governed by the experience I had with the Linn Klimax DS digital player. I thought there would be a big change, but didn't expect the significance and the instantaneous sense of 'no going back' it brought, arguably more marked than with the player. If you have Klimax 350 speakers, you will be buying into the Catalyst upgrade... it's more a question of 'when' you can get the audition in, and 'if' you can afford it there and then. If you don't have a Linn Klimax system, it's now the best it has ever sounded and makes a stronger-than-ever case for you to own a Linn Klimax system. We haven't had a chance to try it on non-Linn active speakers yet, but the chances are it will have a similarly powerful effect. Linn has realised something in audio in Catalyst that is very significant in the high-end, and comes highly recommended. +

PRICES

Linn Klimax System

Full price: £58,700

Upgrade prices: £3,400 (Exaktbox upgrade),

£6,800 (Catalyst board only),

£24,000 (Exakt modules + KDSM/DSM package upgrade)

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