



*We need to talk about Nigel...*

# Understanding CH Precision's I1 – no ordinary Integrated

by Roy Gregory

I don't know if CH Precision has a company motto, officially or even just internally, between themselves, but if they did it would probably be "Dare To Be Different." Functionally, operationally, visually, topologically and technologically, their products are definitely distinctive: as distinctive and, yes, different as the thinking behind them. Yet, even by CH's well-defined standards, let alone the norms applicable to other 'high-end' integrated amps, the I1 integrated can (and should?) be considered an outlier. It might look like every other CH product, offer the same card cage construction, configurable options and operational sophistication – features that more than just suggest the family DNA – but look closer and functionally it is entirely distinct...

Every other CH product takes one function or set of related functions and applies itself to doing them supremely well. The I1 takes multi-functionalism to a new extreme.

Every other high-priced, 'high-end' integrated promises high-end performance in a single box, the ability to be bigger, better and in particular more capable when it comes to driving speakers, than its size or price suggests: think Rowland Daemon or D'Agostino Momentum MxV, Gryphon Diablo 333 or even the Moon 64I or Levinson 585. But not the I1 – an amplifier that concentrates on functionality and versatility rather than the ability to drive a car up a hill.

## **Not just a face in the crowd...**

In fact, pretty much everything about the I1 sets it apart from both the crowd and its siblings. Rather than a conventional integrated amp with a bolt on DAC section, the I1 is a digital controller with a bolt on amp: It offers multiple digital inputs (including the proprietary CH-Link HD for native replay of SACD and MQA encoded discs from a D1.5 transport); it



▶ provides both balanced and single-ended analogue inputs – which are duly converted to digital; it offers the option to add a network replay capability, to convert either or both of the RCA analogue inputs to the current-sensing MC phono function (complete with switchable EQ curves); you can add the company's Clock-Sync card to allow the setting of clock priorities between digital components, or the addition of an external clock; you can opt for a USB input or even a second set of standard digital inputs. Then there's the 100 W/Ch power amplifier and a set of balanced pre-outs...

in their own right, they don't offer the sophistication DSP muscle or run the same PETER algorithms as the DACs in the CI.2.

The analog inputs pass directly into an A-to-D stage, after which all adjustments (input gain, phono replay EQ etc) are performed in the digital domain. It is this reliance on digital control and the software that drives it that allows the II not just its astonishing array of functionality, but also underpins its audio performance. Take for example the volume control, so often a potential performance bottleneck in any analogue or digital control circuit. The II employs a



It's a feature list that has suckered many a dealer and not a few customers into the preposterous belief that the II represents a CI.2 DAC, an LI line-stage, A1.5 amplifier and, possibly, a P1 phono-stage – all in a single box. Guys – you only need to look at the size of an A1.5 – some 50% bigger than the II – to realise that ain't so. All of which begs the question, what exactly is the II – a product so different yet so clever that perhaps they should have called it Nigel!

When it comes to unwrapping this particular curate's egg, the place to start is with the functional versatility and the hardware that enables it. In operational terms, the II does indeed combine most of the functionality you'll find in the CI.2 and P1 (assuming you add the optional phono-input cards). But in hardware terms, it's a completely different animal. The dual mono DACs in the II are closely related to the ones that you can specify for the D1.5 (to turn the transport into a player). Undoubtedly fine

clever hybrid solution, with large 6dB steps made in the analogue domain, while finer adjustments are made entirely in the digital domain – a solution that allows the topological elegance of digital control without eroding bit depth or the DACs' resolution. It's also worth noting that it's an approach that's yet to surface anywhere else in the CH range, further underlining the distinction between the II and the other CH products.

On either side of that digital core, the inputs and output circuitry are drawn from the rest of the range. The familiar card-cage construction allows use of the input modules from the CI.2 as listed above – although the dual-mono analogue input boards that are fitted to the II as standard are unique to this product, offering both inputs and the pre-out socketry. At the other end of the circuit, the power amplifier section in the II is based on the original A1 amplifier, now superseded by the larger and vastly more capable A1.5. ▶

## ►► Not your starter for 10...

In many ranges, the integrated amp is seen as an introductory or 'gateway' product, the most affordable way for customers to buy into a company's product line. In one sense, the same is true of the II, but here we get to what is perhaps the biggest distinction between the integrated amp and the rest of the range. CH's well-worn mantra of "upgradable, configurable, expandable and future proof" embodies the underlying ethos of a product line in which pretty much every box can be taken dual mono, with or without external power supplies, a ready made, cost neutral upgrade path that retains every bit of hardware you've purchased. There are two exceptions to this rule: the TI Time Reference master clock (which is itself the upgrade!) and the II. Unlike the CI.2, PI or LI, there's no option to go dual-chassis or even add an XI external power supply. This is

makes the unit future proof (it's worth remembering that the original CI, launched well over a decade ago, is fully upgradeable to current CI.2 status), while as we shall see, the firmware operation itself makes the product upgradable. Secondly, although the II itself cannot be doubled up or expanded, you can add a second power amp, running from the pre-out sockets, in order to bi-amp your speakers. You can integrate it into a I Series system involving the DI.5 transport and TI clock, but that's pretty much where your external options stop. There's no route upwards onto the rest of the CH performance ladder. Of course, that's just another way of saying that II owners find themselves in the same boat as other integrated amp users. But it's a point worth making, given that owners of other I Series products enjoy first-class travel come upgrade time.



the product where the "expandable" part of the sales pitch grinds to something of a halt. In part, that reflects the digital nature of the unit, something that demands a single point for source contact (hence the three-box configuration of the CI.2) but it also reflects the financial and physical realities of the II's position and topology. What it also makes clear is that, unlike the CI.2 (which can be expanded to an all-singing, all dancing nine-box digital front-end) or the PI and LI (both of which can grow into four-box 'true-mono' configuration, with a separate chassis and power supply for each channel) the II is both an entirely separate platform and in terms of the CH range, an 'endgame' product.

That doesn't mean that there's no upgrade path. For starters, the modular card cage construction

Original IIs were plenty flexible but notoriously picky when it came to partnering speakers (something that made the bi-amp option particularly appealing): for example, the Stenheim A2 or A5 worked beautifully, while the more recalcitrant A3 was a definite no-no. Even with carefully chosen speakers the amp tended to a clean, polished, restrained and poised performance, rather like a frosty deb wearing a white dress to the prom. If you wanted your 'date' to grab you by the tie and haul you onto the dance-floor, you'd be better served looking elsewhere. But all that changed as 2022 transitioned to 2023. CH launched a firmware upgrade for the II, which resulted in substantially improved musical performance. The ads at the time featured a picture of Muddy Waters, over the tag-line, "Got my mo-



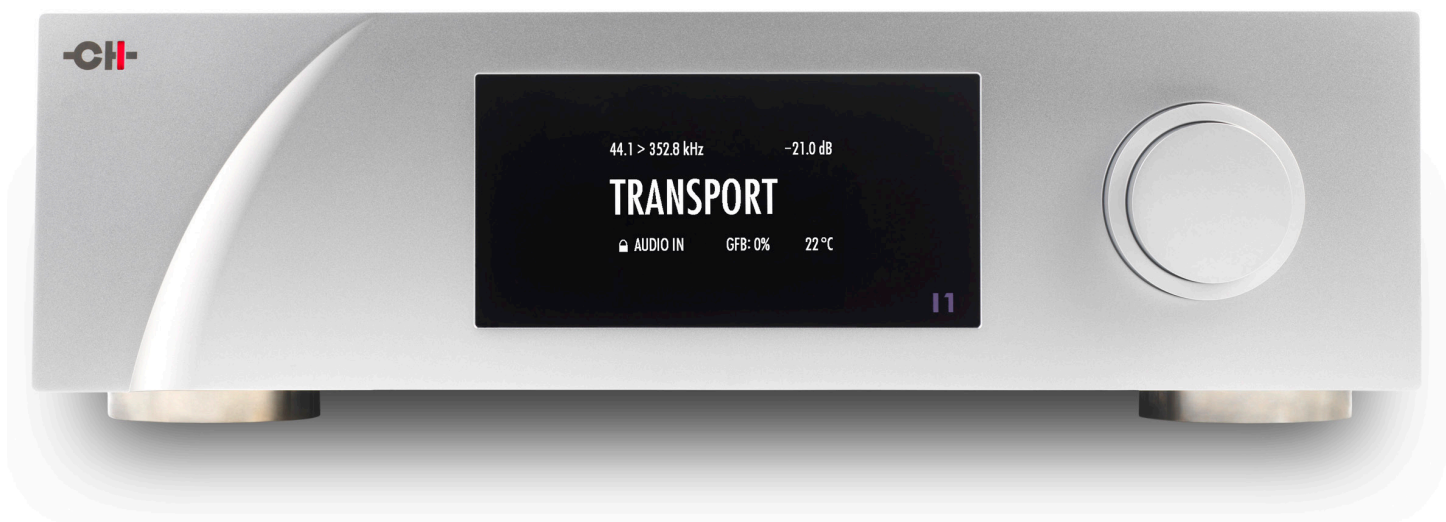
▶▶ jo workin'..." a sentiment which summed up the improvements perfectly. In fact, if I were writing just about that update/upgrade, you'd probably be reading an article entitled, *How Stella Got her Groove Back*. Best of all, the update was free to all owners, further underlining the benefits of software control. The newly updated II, all grown up, suddenly gained a significant measure of dynamic, temporal and musical authority – exactly the qualities it needed to add to its impeccable carriage and manners.

## Not just heavy metal...

Time then to return to the question of the thinking behind the II and the job(s) it's intended to do. The integrated amplifier's software control and

amps in the I Series and their equivalents in the IO Series). As an integrated amp you might assume that this is how the II is also configured. But as we have seen, that isn't the case. In fact, in conceptual terms at least, the product the II most resembles is the CI.2 DAC/Controller. Maybe, because of the presence of its output stage it might be more useful to think of it as a 'Power DAC' – except that this is also misleading, given the standard provision of analogue inputs and the option to convert them to MC phono usage.

By now, having figured out that the II resists being pigeon holed with an intellectual recalcitrance equivalent to the sulky intensity with which the average cat resists being put in its basket for a trip to the vet, you might well wonder just why CH set



the functional versatility that results are common features with all CH Precision products. Even an analogue amplifier like the M1.1 features a heavy investment in software. Don't confuse that with the unit being a 'digital' amp. Nothing could be further from the truth. It is in fact a classic, fully differential, fully complementary, ultra-short signal path, Class AB design, built around a massive linear power supply. Where the software comes in is in monitoring and maintaining the amp's optimum operating conditions, even under load (the patented Exact Bias system) and in allowing the switchable output topology, adjustable gain and global feedback – as well as all of the ergonomic niceties, like display content, brightness and colour. In other words, it wraps the crucial analogue signal path and amplification in a protective cocoon of software – a basic approach that applies to all of the CH analogue components (the PI, LI and the power

out on this particular path, especially when it comes to engineering what many observers might assume would/should/could be their most popular and saleable product? The answer lies in that operational versatility. Ask Florian Cossy (the C in CH) that question and it quickly emerges that the *raison d'être* behind the II was to bring the same operational versatility and sophistication, the same user configurability and App driven control interface, to smaller systems and smaller spaces. Think those people who recognise the advantages of the CH 'software driven' approach to audio engineering but can't accommodate a full I Series separates system. Or those who already own a full CH rig, but want a second system for a smaller space, pied à terre or second home. The only way to offer that within a single, standard CH chassis was to build the unit around a digital core – and hence the II concept emerged.



▶▶ All of which would be irrelevant to all but the very few, if the amp didn't sing: but in its latest guise (firmware version 2.2), sing it does – and with a much wider range of speakers. If the Firmware updates centre around the DACs' time and phase performance, the musical results are expressed in terms of dynamic range, musical intent and a renewed sense of purpose and performance that have very real, real world implications. Earlier versions of the II were perfectly at home with compact floorstanders from the likes of Apertura and LivingVoice, but struggled to get a grip on speakers like the Vienna Acoustics Liszt, leaving the latter combination sounding pale and sluggish, musically disjointed and the musicians heavily hung over. Well, that's all change! With new model VA Liszts in-house for review, what better time to revisit the rejuvenated II – and with extremely rewarding results. Previously, playing a track like 'Safeway Cart' (from *Sleeps With Angels*) generated a soggy morass from which the vocal struggled to emerge. Now, the pulsing bass/drum line is properly deep, weighty and propulsive, bringing proper meaning to the term rhythm section. The etched guitar line is crisp but also suitably delicate, the vocal clear and solid. But the most impressive upshift in performance lies in the sense of overall musical structure, the way the different strands work together, filling the soundstage, filling the room, without blurring or muddling the edges between instruments and voice, or tripping over the measured beat that constrains the song and gives it its desolate emotional power. Fullness and emptiness at the same time? It's a neat trick if you can pull it off – and the II does, with Neil Young and Shostakovich, The Pretenders and Miles Davis. That grip and musical authority isn't established at the expense of articulation or emotional range, but acts as an enabler for both.

### Not your average phono-stage, anyway you look at it!

Perhaps most impressive of all though, is the II's phono-performance. The musical insights, integrity and access delivered by the combination of the current gain input stage and switchable EQ curves (the same RIAA, eRIAA, EMI, Columbia, Decca and Teldec/DGG options you'll find in the PI) regularly reveal musical gems buried within what have previously been dismissed as 'ordinary' or 'mediocre' recordings. You can almost

see the implications dawning on the consciousness of jaded, record collecting listeners as the possibility of mining the rich seams of discarded second-hand discs hits home: and that's before they even realise that the sound they are listening to has been digitised. Indeed, if you need a justification for CH's obtuse approach to building an integrated amp, you'll find it here, not just in the astonishingly involving musical performance offered by the phono-option, but by the fact that it is the processing muscle provided in the digital domain that contributes so much to the end result.

If the analogue replay astounds and the pairing with the DI.5 (via the CH-LINK HD) is nearly as impressive, don't think that the streaming input or the other digital connections are sub-standard. Yes, the Ethernet input benefits from the addition of an Aardvark inline filter – but what streaming input doesn't? So equipped, Roon replay of streamed files from Qobuz has the sense of musical substance and rhythmic/dynamic integrity that so often escapes dematerialized music, making it a viable source for serious listening and elevating it well above the 'background wallpaper' role which is all most streamed material is fit for. That same sense of musical confidence and easy access informs the S/PDIF replay, in this case from the digital outputs of the Wadia S7i – the II easily eclipsing the performance of the Wadia's on-board DAC, which sounded dull, rounded and somewhat muddled in comparison. The II's relaxed clarity and sense of natural musical proportion are CH hallmarks and the integrated certainly possesses a full measure, combined with the ability to get down and get dirty if required. The raucous 'Piece Of Crap' (another track from *Sleeps With Angels*) has never been a personal favourite, one of the better reasons to reach for the skip button if you are playing the CD as opposed to the record. The II does nothing to soften, round or mute the abrasive and aggressive onslaught – and nor should it. It's an object lesson in the new, balanced and purposeful performance that the CH integrated can deliver.

### Is it time for a rethink?

If (like me) you thought you had the measure of the II, based on earlier experience, you might want to think again. The all-singing, all-dancing, single-



▶▶ box solution has moved the goalposts. Or, perhaps more accurately, it has extended its footprint. It still doesn't occupy the same ground as the hunky, middle-weight power house integrateds the market apparently demands and loves so much – at least according to the manufacturers building them. Instead it takes a more cerebral approach to the problem and is arguably capable of more subtle and thought provoking results. The previous pickiness about partnering speakers has been significantly reduced, further broadening its possible applications and appeal. An amp for all seasons and everyman? No – but as Jackson Browne might have it, perhaps it's time to “give up the race and maybe find something better”...

Or at least start appreciating the possible benefits of a different mind-set and a different approach to what seems like a familiar problem. Sometimes, putting an old picture in a new frame makes it look a whole lot different. The II isn't a complete I Series system in a box. It isn't a cut-price way of buying the performance of I Series separates. Let's be honest, even the II can't be described as cheap! It isn't even the first rung on the I Series ladder. What it is though, is a compelling example of the musical power and engineering advantages of CH's software driven approach: not just in terms of performance or versatility, but also upgradability and longevity. What it is – or should be – is food for thought... 