

# HIFICRITIC

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## FOUR CAPTIVATING CARTRIDGES

Chris Bryant tries four classy cartridges, including the Audio-Technica AT-ART1000, DS Audio DS 002, Linn Krystal and Rega Aphelion

## NAIM ND555

Naim's new top-of-the-line ND555 streamer/DAC, assessed by Martin Colloms, Andrew Everard and Jon Honeyball

## WARSAW SHOW 2018

Andrew Harrison has close ties to Poland, so his report, from what is fast becoming the number one European show, has some unusual perspectives

## LOUDSPEAKER PHASE, STRAIGHT AND TRUE

Keith Howard examines the whole concept of phase response in loudspeakers, looking at the history and predicting future developments

## AUDIO ALCHEMY

Chris Frankland investigates the mysterious world of the step-up device, listening to a selection of m-c transformers and talking to leading designers

## SONUS FABER SONETTO VIII

Martin Colloms assesses this new and very powerful floorstander from a well established Italian brand

## MUSIC & MORE

## REVIEWED THIS ISSUE

Naim ND555

Audio-Technica AT-ART1000

DS Audio DS 002

Linn Krystal

Rega Aphelion

KEF R5

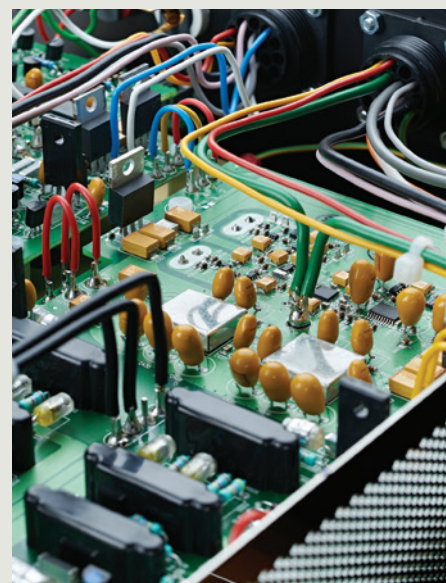
Life-Changer Audio Icon 2

Thores Phono Enhancer

Kirmuss KA-RC-1 Record Cleaner

Sonus Faber Sonetto VIII

Pro-Ject Stream Box S2 Ultra



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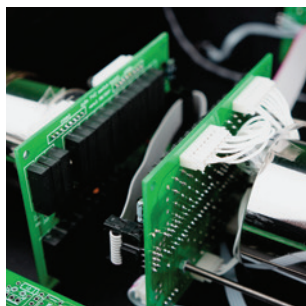
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# Life-Changer Audio icOn 2

ANDREW HARRISON CHECKS OUT AN EXCEPTIONALLY FLEXIBLE TRANSFORMER-BASED PASSIVE CONTROLLER, WITH FULL REMOTE CONTROL



Transformer volume control (TVC) units are rarely criticised for their sound quality. Indeed, for some listeners the finest transformer-based pre-amplifiers can stand above the best that's possible from a boxful of glass or silicon. But there are reasons why the technology is not more popular, besides the difficulty of manufacturing the essential transformers in volume, inevitably leading to the higher entry price. However, the £2090 *icOn 2* seems to have the answers to most drawbacks, despite its cheeky use of capital letters.

Most TVCs I've tried have been unashamedly manually operated, with typically point-to-point wiring between tapped transformers and rotary switches. Such design purity aids sound quality, with no extraneous interference as the signal traverses the kilometres of core wiring. This simplicity means that many of the features of a modern pre-amp are often absent, such as full remote control of volume and source, instant muting and channel balance.

Reliance on mechanical contacts that make and break with every twist of the rotary volume knob also leads to deterioration over time that demands service. After around 10 years steady use, my first-generation Music First TVC had become unbearably noisy whenever changing volume. After dismantling to clean it, I discovered that the silver contacts on the Elma rotary were not just dirty but visibly worn down to the brass – not an ideal interface for line-level audio signals.

The *icOn 2* is based on balanced tapped transformers, just like the Music First *Passive Magnetic* that pioneered the renaissance in such controls. Crucially all the switching here uses relay switches regulated by a microcontroller. Not only do these relays have a much longer life (one billion switching operations versus 25,000 for the popular Elma switches), they also enable greater creativity from the designer.

The unit is housed in a black-anodised aluminium case 233x90x285mm (WxHxD), with a small colour TFT display (55 x 42 mm) on the fascia. A detented rotary encoder serves primarily as volume control, but also acts as a multipurpose controller for navigating the menus, using twist and press actions.

Various user tweaks can be made while in a special setup mode, found by depressing the controller on switch on. Here it's possible to match

levels for each input, fix step size (1 or 2dB), set startup volume, specify volume display (in decibel or linear numbers), and also display colour (gold, green, blue or white). A circumferential feedback LED indicator set around the control can be activated, and its brightness adjusted. Most intriguingly for fans of passive controllers, one can also switch between normal transformer and autotransformer mode.

The fascia has two toggle switches, the upper to switch earthing strategies to suit balanced and unbalanced operation, the lower acting as a 'soft' power off. A full power-off switch appears on the rear, alongside a tiny 5Volt/1amp socket for a switch-mode wall plug. Firmware upgrades are *via* a USB port, and a 12V socket allows remote triggering. The fully loaded rear panel has XLR and RCA options; one minor quibble is that the XLRs are mirror-imaged, making connection with unyielding cables trickier.

Inside the case are the all-important transformers, customised *STA-522A* tapped attenuators, sourced from SAC Thailand, and housed in cylindrical shielding cans. These are mounted sideways, adjacent PCBs carrying the banks of hermetically sealed reed relays. Two more PCBs support display electronics and the Arduino microcontroller programmed to operate all the relays.

The transformers use Supermalloy cores and include 21 secondary taps. When combined with an additional small primary tap and some cunning control logic, it allows the relays to dial in between +1 and -48dB of adjustment in 1dB steps. Channel balance is specified to be within 0.05dB.

Remote control uses the popular alloy-cased Apple handset. Up and down on the 'compass rose' controls volume; left and right cycles through inputs; and the centre button toggles between TVC and AVC operation. Other features are also accessible remotely.

Different hardware configurations are available to order, using a selection of XLR balanced and RCA/phono unbalanced sockets. The most basic of four models (£1390) omits the display and volume indicator, offering three RCA inputs and one RCA output. The top model, tested here, features two XLR and four RCA inputs, and one each XLR and RCA outputs, all for £2090.

The *icOn 2* is made in the UK by Life-Changer Audio (formerly known as Triple M Audio until



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a Dutch-Polish firm with the same name came to light), and is the brainchild of Hungarian engineer Pál Nagy based in Manchester. As well as crafting the pre-amp circuit, Nagy writes all the software code for the embedded logic.

Designer Nagy is no recluse, shackled to his lab bench. On the contrary he loves to work with his customers, devising modifications he can possibly include. One user suggested absolute phase switching, which he quickly devised as a one-off with some extra relays and a firmware revision.

### Operation

Once set up the *icOn 2* proved easy to operate and a delight to use. It might require powering down and up to access setup menus, but thereafter there's little need. The numerical display indicates current volume for each channel at all times, and was just readable from 5m.

This unit is a revelation after using TVC units which lack remote switching and other creature comforts. The freedom to set level by wand to within 1dB proved a boon, even if a maximum attenuation of -48dB may be too little for a loud source played late at night into sensitive loudspeakers. Despite the banks of relays, the unit is effectively silent while sweeping volume. There are no clicks through the speakers, just a gentle 'tink-tink-tink' of relays from within the unit.

As followers of the breed will recognise, the *icOn 2*'s audio background proved blissfully silent in circuit between source and amplifier. Besides inaudible hiss, there was no resulting mains hum in my system (which normally demands experimentation with earth switches).

### Sound Quality

Initial listening was in a balanced signal setup using Nordost Valhalla XLR cabling. Tonally the *icOn 2* was close to neutral, with just a slight lift apparent in upper mid and higher harmonics. This could lead to a shiny tone that subtly spotlight cymbal shimmer, for example, although never fatiguing.

The generally crisp character would sometimes be evident as a hint of sibilance on vocals, or as increased awareness of vinyl surface noise. Midband character was excellent: not as transparent as the class leaders, but certainly open and explicit, and easily challenging the comparatively clouded character of similarly priced solid-state pre-amps.

Stereo depth was superb, able to preserve the deep soundstages found in classical and acoustic recordings, though the whole stage was fractionally closer than the references, possibly due to that trace of treble emphasis. Layering and the sense of audio



holography rated just behind the reference units, while soundstage width was also very good.

Swing and timing accuracy were also short of the very best TVCs, although not by much, while bass precision was quite acceptable if not as explicit with challenging programme, such as the overlapping bass pulses in Massive Attack's *Three* from *Protection*.

As standard the unit operates in transformer mode, good for balanced operation and able to provide galvanic isolation between source and amplifier. But through its programmed relay shuffle of winding connections, the *icOn 2* readily becomes an autotransformer design. Setting it in this mode also significantly reduces the magnitude of those large out-of-band resonant peaks of up to 18dB at 50kHz (source/load impedances: 25ohm/100kohm), albeit now with the effective high frequency limit reduced from around 60kHz to 40kHz. Do note that autotransformer mode is limited to unbalanced connections only.

Now we enjoyed a sweeter sound, restoring some of the gravitas found in the top reference TVCs. Bass weight appeared greater now, and listener focus was drawn more into a more satisfying midband. In quick-fire comparisons this mode might sound duller, but ultimately I found it had the more accurate and satisfying sound.

### Conclusions

The *icOn 2* is an unusually versatile unit that sets a new standard in affordable and high-quality TVCs. It can be easily – probably uniquely – switched between the options of transformer and autotransformer modes. Although its absolute transparency didn't quite match the references, its operational convenience outstrips any conventionally switched model. The sound quality of the *icOn 2* is great for the price and the considerable versatility makes it a highly Recommended benchmark in TVC technology.

HIFICRITIC  
RECOMMENDED

### The Review System

Michell Orbe SE, SME 309, van den Hul Grasshopper III SL4, MFA Reference Phono, vinyl player; Chord DAC; Bespoke Audio, Music First Audio reference controllers; Chord SPM 1200C power amp; Bowers & Wilkins 802D loudspeakers; Nordost Valhalla V1 cables

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