

# ATC CDA2 Mk2

With an upgraded specification including an asynchronous USB input with DSD capability, ATC's CD player/DAC/preamp aims to be a complete system front-end  
 Review: **Andrew Everard** Lab: **Paul Miller**

Is this a new twist on the CD player? Or yet another new variation on the DAC? Well, neither actually, for as that 'Mk2' suffix suggests, this is a revised version of ATC's innovative CDA CD player/DAC/preamp combination, selling for £2950 and designed as the perfect partner for the company's £3375 P2 power amplifier [*HFN* Mar '17], or its range of active speakers.

Combine the CDA2 Mk2 with the P2, which has a more-than-healthy 300W per channel output, and you have a simple two-box system with both CD playback and plenty of inputs – both analogue and digital – able to drive a wide range of speakers. Combine it with a pair of ATC's active speakers, the company suggesting the SCM19A as a starting point, and you have a minimalist set-up, albeit one capable of very high standards of performance.

## ELEGANT SOLUTION

As a result, the CDA2 Mk2's mixture of facilities is something of a masterstroke in simplifying what could be a multi-component system. Then again, there will be those who sound a note of caution, as they would with any multifunction device of this kind: in what is still a rapidly-evolving digital audio market, buying such a product might be putting too many eggs in one basket. After all, while the CDA2 Mk2 might be convenient, it is prey to the appearance of future formats requiring decoding or processing beyond its capabilities, and appears to have no clear upgrade route through modular design or firmware updates.

And, of course, there are formats and services already available to which the CDA2 Mk2 doesn't provide access. So it may handle files up to DSD256, but it won't play SACDs, and neither does it have any streaming capability onboard. If you want to play music from network or

Internet sources, then you will have to do so via a computer connected to the USB-B input provided, or add a dedicated network music player. And with line analogue inputs only, turntable users will have to add an offboard phono stage, too.

## ATC'S VELVET SOUNDS

So the CDA2 Mk2 is a comprehensive solution, if not a complete one. Mind you, it compares favourably on price with contemporary products. For example, the AVM Evolution CS 5.2 offers a similar specification, plus onboard 330W amplification, and is about twice the price of the ATC unit – or a bit less than the CDA2 Mk2/P2 combination.

The CDA2 Mk2 uses a Chinese-made TEAC drive to spin the CDs and includes the celebrated AK4490 DAC from Asahi Kasei. Part of AKM's Verita Series, and using what the company calls its 'Velvet Sound' architecture, the AK4490 supports up to 768kHz/32-bit PCM (the CDA2 Mk2 uses this capability up to 384kHz) and 11.2MHz DSD, and offers a choice of five digital filter

settings. However, ATC has decided not to give the user direct access to these filters, choosing what it thinks sounds the best and making this the default mode [see PM's Lab Report, p65].

The DAC also receives data from the CDA2 Mk2's range of digital inputs, including USB-B, coaxial and optical. The USB audio input requires downloadable drivers for use with Windows computers, but is driverless with Macs – what is unusual, however, is that it will support DSD256 when used with Windows, but only DSD128 with OS X machines.

The output of the DAC stage, and the three analogue inputs (one of which is of higher sensitivity, and provided on a 3.5mm stereo socket instead of a pair of RCA phonos) feed into a fully-balanced preamp stage on the main board stretching the width of the rear of the housing. Even the 6.35mm headphone socket, driven by its own amplifier, is on the rear panel to keep signal paths short, and the front panel controls are 'fly by wire' rather than being coupled mechanically to the audio board.



**RIGHT:** The CD transport [lower left] is sourced from TEAC, the USB input board [top left] is powered by an Atmel processor and the (balanced) analogue stage [top] features a premium AKM 'Velvet Sound' AK4490 DAC



Also notable is the abundance of fresh air inside the CDA2 Mk2 [see picture, p62]. While sometimes derided by those who feel they're only getting their money's worth if the interior of a product is crammed with circuitry, this actually has advantages when it comes to keeping sound-critical components away from potential sources of interference.

As an aside on the same subject, it's worth noting that the main audio board has a clear circular 'landing pad' marking for the toroidal transformer, complete with a hole drilled for its mounting bolt. In the original CDA2 this is where the transformer was mounted, but in the Mk2 the location is unoccupied. Instead, the transformer is bolted in vertical orientation to the right-hand side-panel of the unit – presumably as this location distances it from the audio circuits, further reducing interference and noise.

Outputs are provided on both balanced XLRs and conventional RCA phonos, and the CDA2 Mk2 is built on a chassis combining steel and aluminium and using constrained mass damping to control resonances, with the front panel machined

from a 13mm aluminium extrusion with a brushed and anodised silver finish.

## EXTENSIVE REWORKING

What's new here? Well, the obvious things are on the input side – both the USB and the 3.5mm stereo socket have been added, but the CDA2 Mk2 is also the result of extensive reworking under the lid. The AKM DAC is new, as is the TEAC-supplied transport, chosen for faster seek times, lower mechanical noise and improved error correction, while the power supply has gained

nine extra voltage regulators and better decoupling. The input/output gain stages have been upgraded with discrete op-amps in six blocks – two for input buffering and four to deliver the balanced output.

The output section is also designed to drive long cable runs, as might be the case when, for example, the CDA2 Mk2 is connected directly to a pair of active speakers. ATC says it's good for balanced cables of up to 50m, which should be adequate for even the largest room. Other gains are brought about by more

**ABOVE:** No frills sound meets functional style: buttons below CD drawer operate transport functions, while those to the right cover input selection and on/standby. And that's about it!

meticulous construction, including hand-soldering of components, each unit being assembled by a single ATC employee, while the headphone amp has also been upgraded, to give it better drive for tricky loads. The package is completed by a comprehensive IR remote control, handling all the CDA2 Mk2's functions, a neat touch here being a 'CD standby' button to turn off the disc section when listening to other inputs, thus reducing the potential for noise and vibration.

## A JOY TO USE

ATC recommends J River Media Centre 22 for playback on both Windows and Mac OS X, and provides illustrations in the user manual for the optimum set-up for the best possible sound. Mind you, it also recommends Windows 7-based PCs, and El Capitan for Macs, saying that was how the CDA2 Mk2 was developed, but I had no problems running it with Windows 10 and more recent OS X versions – most of my Macs now run either Sierra or High

Sierra – along with playback software including Amarra and Audirvana.

What's clear, however you feed the CDA2 Mk2, is that this unusual hybrid device

sounds very special indeed, whether playing discs, receiving audio via its S/PDIF inputs, connected via its analogue ins or handling hi-res audio from a computer. Simply, there is a rightness and directness about the sound, with tight, powerful bass, a clean, informative midband and a treble that's as explicit as it is sweet, all suggesting that the CDA2 Mk2 is just letting the music through, and not messing with it in the process. It's this neutrality that makes it a joy to use – it is ☺



## PRO HERITAGE

The CDA2 Mk2 is the latest arrival in a range of ATC electronics, originating with its own electronic crossovers for active operation of the company's speakers: these first appeared 36 years ago, just eight years into the life of ATC. While the Gloucestershire company is still best-known for its speakers, which are widely used in studios, it has long had amplification components to back them up. All its products are grounded in the company's heritage – after all, it was founded by Billy Woodman back in 1974 to make drivers for the pro audio industry, most notably in high-quality PA applications. Its first model was the PA75-314 12in bass unit, designed for high power, low distortion and – above all – big SPLs. Today, its drive units are still made in-house, both for its 'domestic' and widely-used professional monitors. Having joined the catalogue in 1996, the standalone 'hi-fi' electronics line is a relatively recent arrival, beginning with the SCA2 preamp and SPA2-150 power amp, closely followed by its first integrated amp, the SIA2-150.

## CD PLAYER/DAC/PREAMP



**ABOVE:** Digital inputs are covered by DSD-compatible USB-B and S/PDIF on coax and Toslink optical, with two sets of line-level analogue inputs on RCAs, alongside a 6.35mm headphone socket, balanced (XLR) and single-ended (RCA) preamp outputs

amazing how its 'nothingness' can prove highly addictive! You could pay a lot more for a CD player, DAC and preamp and still find the components imposing something of themselves on the sound. That this (relatively) affordable combination offers so much and yet adds or removes so little is a major achievement by ATC's engineers.

### FRESH AS A DAISY

For an indication of that in action, I needed look no further than the eponymous debut album by The B52's, already eight years old when it appeared on CD in 1987 [Island Records CID 9580]. Yes, some saw the 'High Fidelity' logo on the cover as a joke, given the snappy, jerky rhythms, dense mixes and campy vocals, but the album lives up to the description right from the opening riff of 'Planet Claire', and the CDA2 Mk2 delivers it with real drive and a wide open view of the layers of the recording, charging through the album's paltry 39-minute playing time with such verve that it seems to be over almost before it's started.

This front end may come out of a studio heritage, but it knows how to have a good time, and there's nothing anonymous or 'technical' about the way it plays music.

The same is very much in evidence with Pink Floyd's *Wish You Were Here*, in DSD64 [from EMI 5099952243325], played in via the USB input. The crisp resolution of the CDA2 Mk2's digital section allows the lumbering rhythms of 'Have A Cigar' to power out into the room, while making every detail of the lyrics and recording plain to hear. Meanwhile its unfettered dynamics

are perfectly suited to the slow burn of 'Shine On You Crazy Diamond' before it lets the guitar riffs scream out with fine attack.

Get somewhat spikier with Elvis Costello And The Attractions' *Armed Forces* album [Imp Records FIEND 21], now unfathomably almost at its 40th birthday, and the gutsy Nick Lowe production combined with the still punky charge of the band on tracks such as 'Oliver's Army' and 'Goon Squad' is meat and drink for the wide-open ATC sound.

It's an album on which you can hear Costello's sound changing, his voice opening up, the songs still hard-hitting lyrically but now becoming more layered with keyboards, more guitars and harmonies. Here it comes up fresh as a daisy, reminding you what all the fuss was about back in 1979.

Come bang up to date with Beth Hart & Joe Bonamassa's *Black Coffee* [Provogue PRD75445], an album that looks dynamic range in the face and laughs, and the CDA2 Mk2 lets the full-on, 'bouncing off the limiters' effect thunder through with all its melodrama intact. It ain't pretty, but boy is it effective! ☺

### HI-FI NEWS VERDICT

The music centre, ATC style: the CDA2 Mk2 may have all the air of 'a horse designed by committee', as it does so much, but this is more thoroughbred than camel, with a wide-open sound, masses of detail and unrestrained slam. It makes a fine partner for power amps and active speakers alike, getting on with the business of delivering the music without adding or subtracting anything. If it does all you need, it's a bargain.

Sound Quality: 84%

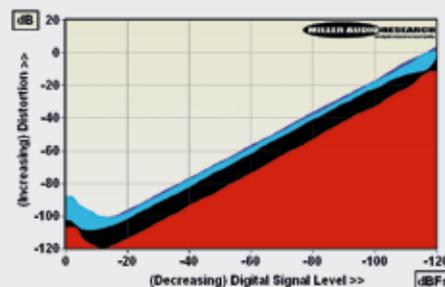


### ATC CDA2 MK2

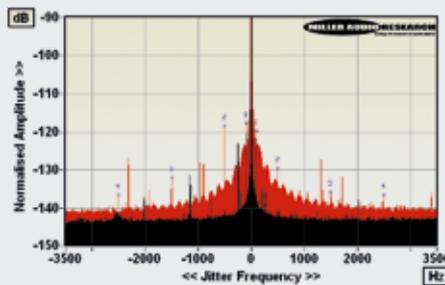
ATC has extracted an exceptional performance from its choice of AKM's 768kHz/32-bit AK4490 'Premium' DAC although the player's massive 14.5V (balanced) output with CD/digital inputs is still rather higher than typical. The maximum achievable output is 18.4V (via the analogue input) and, with its low 9.85ohm source impedance, the CDA2 Mk2 will surely drive the most adventurous interconnect/power amp combinations! The response via digital sources, and its favourable time domain behaviour, is governed by ATC's choice of the 'Short Delay/Sharp roll-off' digital filter – one of five algorithms offered by the AK4490 DAC that we explored in depth in our review of the TEAC UD-503 DAC/headphone amp [HFN Apr '16].

This minimum phase filter offers a 100dB suppression of stopband images with CD and a response that rolls-away very gently to -0.3dB/13kHz and -0.6dB/20kHz. With 48kHz, 96kHz and 192kHz digital inputs the response is -0.5dB/20kHz, -1.15dB/45kHz, and -1dB/48kHz to -17.6dB/90kHz respectively, although the inherent (analogue) response of the preamplifier is -1dB/4Hz to -0.04dB/20kHz and -0.7dB/100kHz.

The A-wtd S/N ratio is 110.7dB (digital, re. 0dBfs) and 101.7dB (analogue, re. 0dBV) while 'digital' distortion is as low as 0.0001%/1kHz and 0.0009%/20kHz at -10dBfs [see Graph 1, below]. Distortion via USB and S/PDIF inputs is 0.0006-0.004% from 20Hz-20kHz at 0dBfs (measured at 4V balanced output) while the inherent THD of the preamp stage is 0.0001-0.001% over the same span. Digital jitter is well managed although not entirely eliminated at 55psec (48kHz/24-bit) and 35psec (96kHz/24-bit) [see Graph 2, below]. PM



**ABOVE:** Distortion vs. digital signal level over a 120dB dynamic range – 48kHz/24-bit LPCM (1kHz, red; 20kHz, cyan) vs. CD (1kHz, black; 20kHz, blue)



**ABOVE:** High res. jitter spectrum with 48kHz/24-bit data (black) and 96kHz/24-bit data (red, w. markers)

### HI-FI NEWS SPECIFICATIONS

Maximum output level / Impedance	18.4Vrms / 9.85ohm (XLR)
A-wtd S/N ratio (LPCM / CD / Preamp)	110.7dB / 110.7dB / 101.7dB
Distortion (1kHz, 0dBfs/-30dBfs)	0.00064% / 0.00035%
Distortion & Noise (20kHz, 0dBfs/-30dBfs)	0.0043% / 0.00075%
Freq. resp. (20Hz-20kHz/45kHz/90kHz)	+0.0 to -0.5dB/-1.2dB/-17dB
Freq. resp. (Preamp, 20Hz-20kHz/100kHz)	+0.0dB to -0.05dB / -0.7dB
Digital jitter (48kHz/96kHz / CD)	55psec / 35psec / 145psec
Power consumption	10W (9W standby)
Dimensions (WHD) / Weight	445x90x330mm / 7kg