

KEN MICALLES

ATC CDA2 Mk2

CD PLAYER-PRE AMPLIFIER

In the early 1990s, the Compact Disc was all the rage, and vinyl records were being executed en masse.

Thirty years later, and oh, how our tables have turned. Mint first pressings of tenor saxophonist Hank Mobley's 1957 album *Hank Mobley* (Blue Note BLP 1568), which once could be had for \$40, now bring upward of \$8000. Each. Vinyl continues to enjoy a global resurgence of popularity, while CD sales have plummeted to all-time lows.

What happened? Apparently, yesterday's pops and ticks are today's "warmth," Record Store Day exclusives, and skyrocketing vinyl values. All things old . . .

If, in audio as in life, history repeats itself, will we one day miss the "clarity, convenience, and low-end extension" of the "Red Book" CD? Is the story of the impending "CD revival" about to go global?

In the U.S., Tidal offers admirable streaming quality, and Qobuz promises to follow suit. Spotify, not so much. But if I'm going to play a digital medium, I'd rather spin the fully lossless CD, and on a well-equipped, solidly built CD player. Perhaps this is part of the thinking behind the latest iteration of ATC's flagship CD player-preamplifier, the CDA2 Mk2 (\$4249).

Beginning in 1974, the Acoustic Transducer Company supplied drivers and loudspeakers to the British professional audio market, and pioneered the soft-dome midrange driver and active speakers. In 1996 they launched their first audio-



Will we one day miss the "clarity, convenience, and low-end extension" of the CD?

phile amplification products, the SCA2 preamplifier and SPA2-150 power amplifier. Today, ATC's passive and active loudspeakers are popular throughout the UK and the U.S.

Design

The CDA2's "Mk2" designation refers to multiple upgrades to the original player, introduced in 2010. The beating heart of the revised CDA2 is twofold: a Chinese-made, Teac 5020A-AT CD transport claimed to deliver faster play and seek times and lower noise than the previous, Philips transport, and Asahi Kasei Microdevices' 32-bit AK4490EQ DAC chip. Also new: a USB input that can natively play high-resolution PCM files; a dedicated headphone amplifier; a 3.5mm analog input for connecting a smartphone, media player, or tablet (no streaming here); and a stronger power supply. The CDA2's fully balanced preamplifier and class-A output stages also received upgrades.

"The input and output gain stages in the CDA2-2 are operational amplifiers built around discrete components," according to ATC's Richard Newman, Transducer and R&D

SPECIFICATIONS

Description One-box CD player with volume control and analog and digital inputs. CD player: Distortion: 1kHz, 0.0015% (-96dB); 10kHz, 0.003% (-90dB). Frequency response: 20Hz-20kHz, 0.2dB. Preamplifier: Frequency response: 2Hz-280kHz, -3dB. Distortion: 1kHz, 0.0008%/102dB. Input sensitivity for 2V output: Aux inputs, 600mV; 3.5mm inputs, 400mV. Maximum output level: RCA, 9.2V

RMS; XLR 18.4V RMS. Overload capacity: 13dB. Input impedance: 14k ohms. Output impedance: 10 ohms. Signal/noise: wide-band, 96dB; DIN, 108dB; IEC "A," 112dB. Absolute phase, phono & XLR: 0°. Output: XLR, CMRR (100Hz-10kHz): 60dB. Digital inputs: Distortion: 0.001% at all supported sample rates: 44.1, 48, 88.2, 96, 176.4, 192, 352.8, 384kHz. DSD frequency response: 10Hz-50kHz,

-1dB. Supported DSD rates: Windows, DSD64, DSD128, DSD256; MacOS, DSD64, DSD128.

Dimensions 17.5 (445mm) W by 3.5 (90mm) H by 13 (330mm) D. Weight: 15.4 lb (7kg).

Finish Silver.

Serial number of unit reviewed 0046.

Price \$4249. Approximate number of dealers: 7. Warranty: 6 years (2 years, CD transport).

Manufacturer ATC, Loud-

speaker Technology Ltd., Gypsy Lane, Aston Down, Stroud, Gloucestershire GL6 8HR, England, UK. Tel: (44) 1285-760561. Fax: (44) 1285-760683. Web: www.atcloudspeakers.co.uk.

US distributor: Lone Mountain Audio, 7340 Smoke Ranch Road, Suite A, Las Vegas, NV 89128. Tel: (702) 365-5155. Web: www.lonemountainaudio.com.

Engineer. “There are six common gain blocks, two for left and right input buffering, and four to provide a true differential output for the left and right channels. The output stages are configured as unity-gain complementary compound (Sziklai) pairs, biased in class-A. Optimizations were made to the above gain stages to further reduce distortion and noise. Also, the maximum output of the CDA2-2 is now 9V RMS, with a capability of driving high capacitive loads.”

The original CDA2 had only optical and digital inputs; the Mk2 adds an Amanero Combo 384 USB receiver module that provides an array of digital functionality. The Amanero can handle “sample rates from 44.1 kHz to 384kHz, with word lengths to 32 bits,” Newman wrote. “The Amanero module will also decode DSD sources at 2.822 MHz (single rate, DSD 64), 5.644 MHz (double rate, DSD 128), and 11.288 MHz (quad rate, DSD 256).”

The CDA2 Mk2’s first-rate construction—each CDA2 Mk2 is wholly assembled by a single ATC employee—includes the hand-soldering of “surface mount components on the legs of specific chips.” This care is reflected in the player’s bomb-proof appearance.

Early thinking regarding stored digital files vs real-time disc playback gave the former format the edge—supposedly,

it eliminated jitter. “The AKM DAC has a high inherent tolerance to jitter,” Newman wrote. “To aid its performance, we have added many regulators around the DAC, paying particular attention to the All-important reference line, which sets a reference level (voltage). Over and above that, we have tried to ensure that through signal delays, ground problems, interference, and noise are kept to a minimum.”

Why did ATC forgo both streaming capability and a phono stage in the CDA2 Mk2?

“To incorporate a streaming feature on the CDA2 Mk2 would have involved major software development,” Newman replied. “ATC’s strengths are not currently in software design but instead in high-quality audio electronic circuitry and loudspeaker transducer and system design. Clearly, with the increased popularity of vinyl, we can now look back at when we started development on the CDA2 Mk2, a phono stage would have been a welcome addition.”

Under British Steel

The CDA2 Mk2 measures 17.5 wide by 3.5 high by 13 deep, and its wraparound case, rear panel, and chassis are made of steel; its brushed-silver front panel is a 13mm-thick aluminum extrusion. Constrained-layer damping was used to

MEASUREMENTS

I measured the ATC CDA2 Mk2 using my Audio Precision SYS2722 system (see the January 2008 “As We See It”). Looking first at its performance as a CD player, the CDA2 Mk2 had the best error correction I have ever encountered, playing every track on the Pierre Verany Digital Test CD without glitches. This included the track with a single 4mm gap per revolution in the data spiral, and the track with repeated 3mm gaps! (The Compact Disc standard, the so-called “Red Book,” requires only that a player cope with gaps of up to 0.2mm.)

As the output RCA jacks had been broken, I used crocodile clips attached to the inside of the jacks for the measurements. The balanced output impedance was 20.5 ohms at 20Hz

and 1kHz, rising to 46 ohms at 20kHz. These impedances are higher than the specified 10 ohms, but still very low. The unbalanced output impedance was higher, at 460 ohms, as was the headphone output impedance, which was 121 ohms at low and middle frequencies, and 115 ohms at the top of the audioband.

A 1kHz digital signal at 0dBFS resulted in an output level of 14.8V at the balanced output jacks, 7.37V at the unbalanced jacks, and 7.85V at the headphone output, all measured into 100k ohms with the volume control set to its maximum. All three sets of outputs preserved absolute polarity for both CD playback and for the coaxial and optical S/PDIF inputs. The latter locked to datastreams with all sample

rates up to 192kHz.

Apple’s USB Prober app identified the USB input as “Combo384 Amanero” from “Amanero Technologies,” and the CDA2 Mk2’s serial number as “413-001.” (The serial number on the player’s rear panel was 0046.) The USB input operated in the optimal isochronous asynchronous mode, in which the DAC, not the computer, controls the flow of data packets. My MacBook Pro’s AudioMIDI app reported that the CDA2 Mk2’s USB input would accept 32-bit integer data sampled at all rates from 32 to 384kHz.

The ATC’s impulse response with 44.1kHz data (fig.1) indicates that its reconstruction filter is a minimum-phase

¹ See www.stereophile.com/content/measurements-maps-precision.

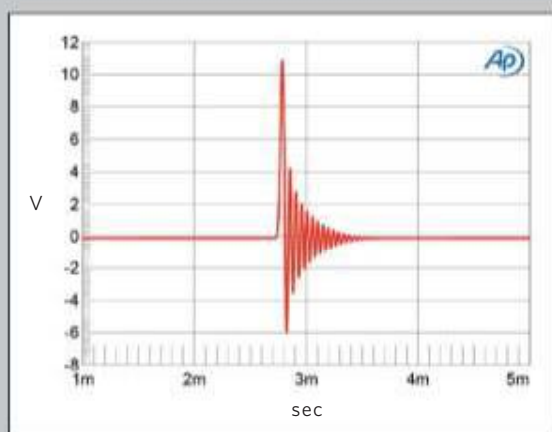


Fig.1 ATC CDA2 Mk2, digital input, impulse response (one sample at 0dBFS, 44.1kHz sampling, 4ms time window).

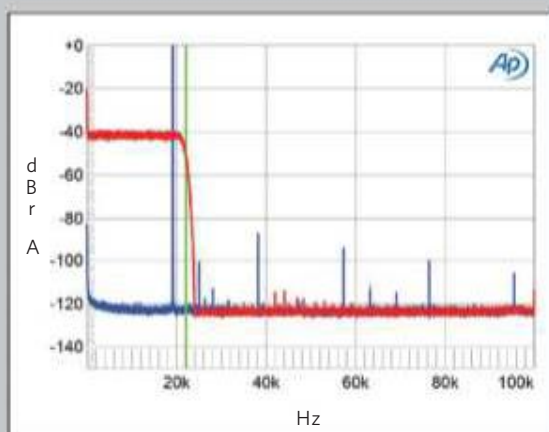


Fig.2 ATC CDA2 Mk2, digital input, wideband spectrum of white noise at -4dBFS (left channel red, right magenta) and 19.1kHz tone at 0dBFS (left blue, right cyan), with data sampled at 44.1kHz (20dB/vertical div.).

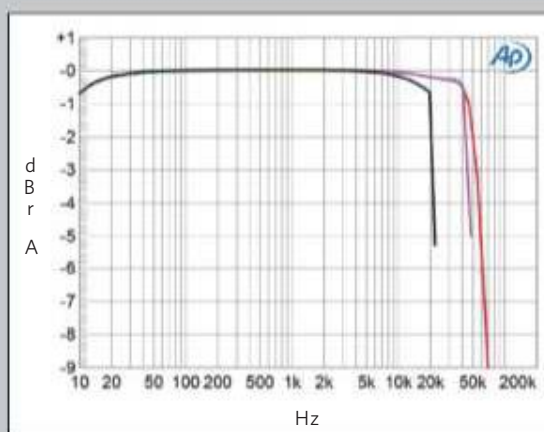
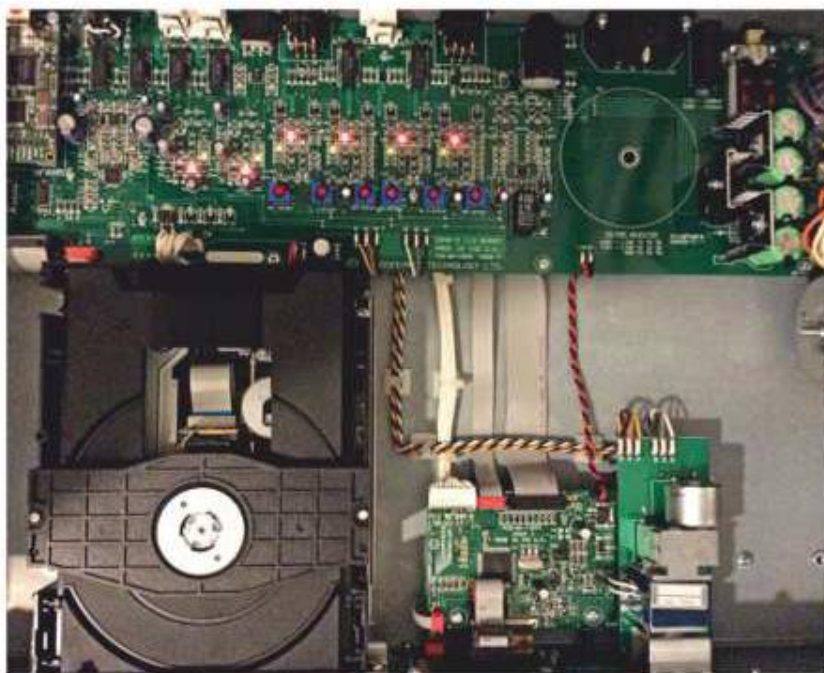


Fig.3 ATC CDA2 Mk2, digital input, frequency response at -12dBFS into 100k ohms with data sampled at: 44.1kHz (left channel green, right gray), 96kHz (left cyan, right magenta), 192kHz (left blue, right red) (1dB/vertical div.).

control resonances. The ATC's front plate, with its raised and rounded double stripes at each end, looks like a large military epaulet stood on edge. When the review sample arrived, the heft of the two-layer box presented by my understanding UPS delivery person surprised me; nonetheless, an unpacked Mk2 looks heavier than its 15.4 lb.

The CDA2 Mk2's front panel is laid out simply and logically. From left to right: the CD tray, below which are five metal buttons for Play, Stop, Previous, Next, and Open/Close. To the right of the tray is a column of five tiny indicator LEDs; from the top down, CD, Aux 1, Aux 2, S/PDIF, and USB. To the right of this column is a small digital display, and below that are two buttons, for Mute/Function and Standby. At far right is a motorized Alps Blue volume control. By the way, the bolts securing the CDA2 Mk2's front panel look so like the pushbuttons that I often pressed a bolt, then stood there waiting for something to happen. It never did.



Most of the front panel's controls are duplicated on ATC's small SCA R2 remote-control handset, which also lets you fast-forward or -reverse through tracks, dim the display, repeat one track or the entire disc, and put the CDA2 Mk2 in standby mode. Unlike Art Dudley, I greatly enjoy having a remote, and the ATC R2, while made of plastic and of relatively low build quality, performed perfectly. However, the remote has no Function or Open/Close button of its own; to close the disc tray, you must reach under the extended

tray to press the Open/Close button. Awkward.

The CDA2 Mk2's rear panel is similarly minimalist. From left to right are: a small Power button; a fuse bay; an IEC power inlet (power cord included); a $\frac{1}{4}$ headphone jack powered by a discrete headphone amplifier capable of driving input impedances from 600 to 30 ohms; one pair each of balanced (XLR) and unbalanced (RCA) outputs; three analog inputs (one 3.5mm mini jack, two pairs RCA jacks);

measurements, continued

type, with all ringing occurring after the single sample at 0dBFS. With 44.1kHz-sampled white noise (fig.2, red and magenta traces), the CDA2's response rolled off sharply above 20kHz, but didn't reach full stop-band suppression until above the Nyquist frequency of 22.05kHz (green vertical line). An aliased image at 25kHz of a full-scale tone at 19.1kHz (blue and cyan traces) can therefore be seen, though this lies at -100dB (0.001%). The distortion harmonics of the 19.1kHz tone are visible above the ultrasonic noise floor, the second harmonic being the highest in level, at -86dB (0.005%).

When I examined the ATC's digital

frequency response with S/PDIF data at 44.1, 96, and 192kHz, the response began to roll off below each Nyquist frequency, with then a sharp rolloff at the two lower sample rates (fig.3, green and gray traces, 44.1kHz data; cyan and magenta, 96kHz data). The ultrasonic response with data sampled at 192kHz (fig.3, blue and red traces) extended slightly higher than that with 96kHz data. I haven't shown the response with data sampled at 384kHz, as it overlaid the 192kHz traces up to 96kHz, above which it continued smoothly rolling off, reaching -30dB at 130kHz. Channel separation (not shown) was excellent, at 115dB below

500Hz, and still 90dB at 20kHz. The low-frequency noise floor with 24-bit TosLink data was clean (fig.4), though a spurious tone can be seen 120Hz below the spectral spike that represents a full-scale 1kHz tone.

When I increased the bit depth from 16 to 24 with a dithered 1kHz tone at -90dBFS (fig.5), the noise floor dropped by almost 20dB, meaning that the CDA2 Mk2 offers more than 19 bits' worth of resolution, which is excellent. With undithered 16-bit data representing a tone at exactly -90.31dBFS (fig.6), the three DC voltage levels described by the data were well resolved, the waveform was per-

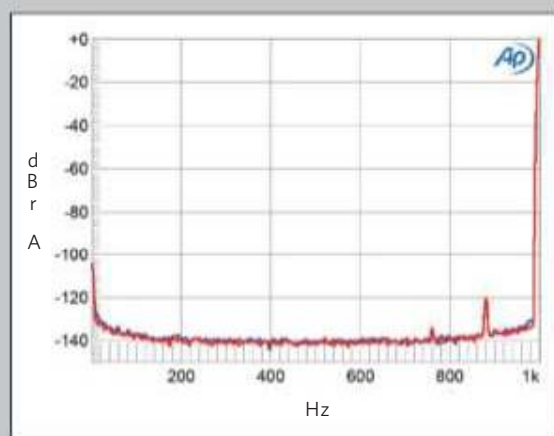


Fig.4 ATC CDA2 Mk2, digital input, spectrum of 1kHz sine wave, DC-1kHz, at 0dBFS (left channel blue, right red; linear frequency scale).

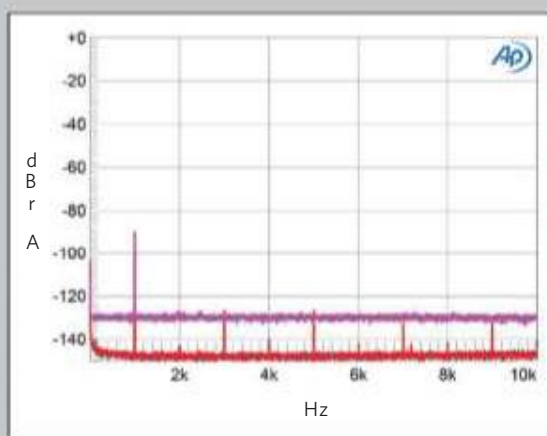


Fig.5 ATC CDA2 Mk2, digital input, spectrum with noise and spurious of dithered 1kHz tone at -90dBFS with: 16-bit data (left channel cyan, right magenta), 24-bit data (left blue, right red) (20dB/vertical div.).

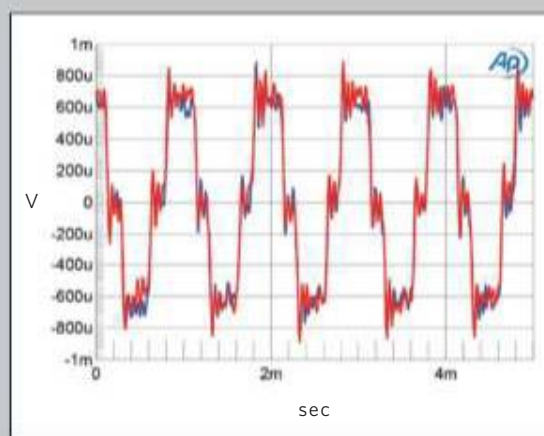


Fig.6 ATC CDA2 Mk2, digital input, waveform of undithered 16-bit, 1kHz sine wave at -90.31dBFS (left channel blue, right red).

and coaxial, optical, and USB inputs. Above the headphone jack, and below the label "Stereo CD Preamp," is ATC's 1970s-styled logo.

Setup

I'd say 15 lb is more or less the perfect weight for a CD preamplifier: not so light as to make you distrust its build quality, not so heavy as to split your ribs when you move the thing around. The CDA2 Mk2 slid easily into each of my hi-fi racks. In both rigs, I placed it on an IKEA Aptitlig bamboo board, atop four rubber-and-cork pucks sitting on an MDF shelf.

To test the ATC's CD-playing abilities, I used a pair of Auditorium 23 XLR-to-RCA interconnects from the CDA2 Mk2's balanced outputs into my Shindo Laboratory Allegro preamplifier's single-ended inputs. (I started the auditioning with single-ended Dimarzio interconnects, which have screw-down RCA plugs. Unfortunately, these became frozen on the CDA2 Mk2's RCA jacks and when I unplugged the cables I dislodged the collars from the player's RCA jacks.) When I evaluated the ATC as a CD player and preamplifier, a pair of Shindo XLR-to-RCA interconnects joined the

ATC's balanced outputs to the Mytek Brooklyn and Shindo Haut Brion power amplifiers' single-ended inputs.

Throughout my listening for this review, when I switched between the ATC's USB and CD inputs, it made a loud buzzing sound for about two seconds before going silent again. Scared me every time.

All about the CDs

If you've read my previous reviews, you know I'm all about vinyl. But the CDA2 Mk2 demanded that I dive deep into my collection of CDs, many of which were pressed during my 30 years as a jazz, pop, and electronic music critic. Nowadays, while electronic and popular music arrives as e-mailed files, jazz publicists still send CDs—a smart move, as I'm more likely to play things I can touch, smell, and generally handle.

Words that habitually popped up in my listening notes for the CDA2 Mk2: rich, dense, transparent, truthful, powerful, subtle, revealing. One CD with which I heard all of these qualities was *Loves Here to Stay*: Diana Krall and Tony Bennett's romp through the George Gershwin songbook (CD, Verve 002870302). While most of Krall's music is well recorded,

measurements, continued

fectly symmetrical, and the minimum-phase ringing on the transitions was clearly evident. With undithered 24-bit data, the result was a clean sinewave (not shown).

As well as very low analog noise, the ATC CD player featured very low levels of harmonic distortion. Even into the punishing 600 ohm load, a full-scale 50Hz tone had just 0.0004% of second-harmonic content (fig.7). Intermodulation distortion with a mix of equal levels of 19 and 20kHz 24-bit tones sourced via TosLink was at low levels (fig.8), though the noise floor to either side of the high-level tones included low-level spurious tones. These spurious tones could also be seen when I tested the CDA2 Mk2's rejection of word-clock jitter with 16-bit

TosLink J-Test data (fig.9). The coaxial S/PDIF input behaved identically. However, when I repeated the test with CD data (fig.10) the tones were absent, and the odd-order harmonics of the LSB-level, low-frequency squarewave were all reproduced at the correct level (sloping green line). A pair of sidebands at 120Hz are present, but these are low in level.

Turning to the line-level analog inputs: With the ATC's volume control set to its maximum, the maximum voltage gain at 1kHz into 100k ohms measured 16.3dB from the balanced outputs, 10.4dB from the unbalanced outputs, and 10.85dB from the headphone outputs. The analog inputs preserved absolute polarity (ie, were non-inverting), and the input impedance

was close to the specified 14k ohms, at 13k ohms from 20Hz to 20kHz. The frequency response from the analog inputs was flat from 30Hz to 30kHz, with slow rolloffs above and below that range (fig.11). Channel separation was excellent, at 110dB in both directions below 2kHz and still 90dB at 20kHz.

With clipping defined as when the percentage of THD noise in the output reaches 1%, the CDA2 Mk2's balanced outputs didn't clip until a very high 19V into 100k ohms (fig.12). The downward slope of the trace in this graph indicates that actual distortion lies below the very low noise floor until the output approaches 10V. The picture is very similar into the punishing 600 ohm load (not shown), a tribute to the CDA2 Mk2's apparently bombproof

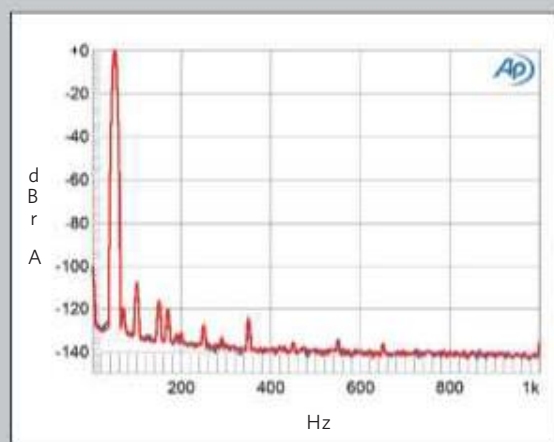


Fig.7 ATC CDA2 Mk2, digital input, spectrum of 50Hz sinewave at 0dBFS, DC-1kHz, into 600 ohms (left channel blue, right red; linear frequency scale).

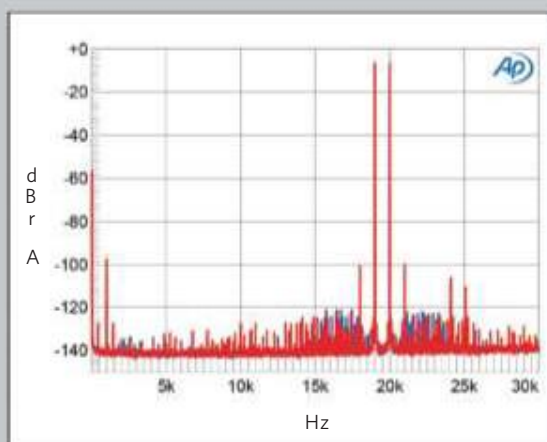


Fig.8 ATC CDA2 Mk2, digital input, HF intermodulation spectrum (DC-30kHz), 19 20kHz at 0dBFS into 100k ohms (left channel blue, right red; linear frequency scale).

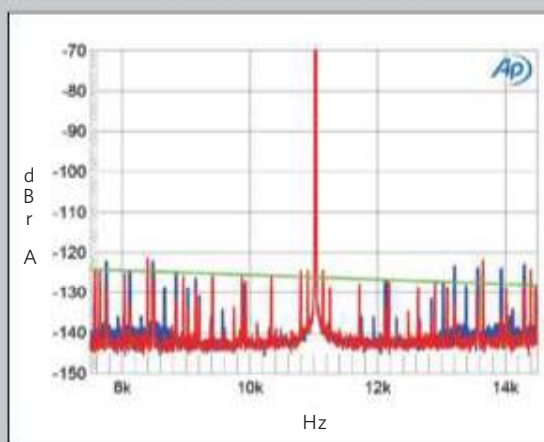


Fig.9 ATC CDA2 Mk2, digital input, high-resolution jitter spectrum of analog output signal, 11.025kHz at -6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: 16-bit TosLink data (left channel blue, right red). Center frequency of trace, 11.025kHz; frequency range, 3.5kHz.

the sound of the piano trio backing her and Bennett is a revelation.

The music is performed with relish and recorded with immaculate care—Kral's and Bennett's voices are

measurements, continued

discrete output devices. Spectral analysis reveals that the distortion signature for the analog inputs, like that for the digital inputs, is primarily second-harmonic in nature.

ATC's CDA2 Mk2 offers generally superb measured performance, though its S/PDIF inputs aren't up to the standard of jitter rejection offered by CD playback and the USB input. —John Atkinson

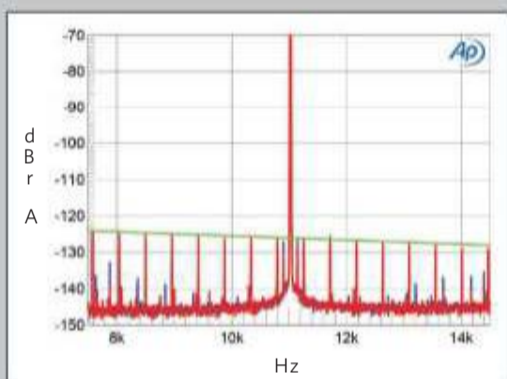


Fig.10 ATC CDA2 Mk2, digital input, high-resolution jitter spectrum of analog output signal, 11.025kHz at -6dBFS, sampled at 44.1kHz with LSB toggled at 229Hz: 16-bit CD data (left channel blue, right red). Center frequency of trace, 11.025kHz; frequency range, 3.5kHz.

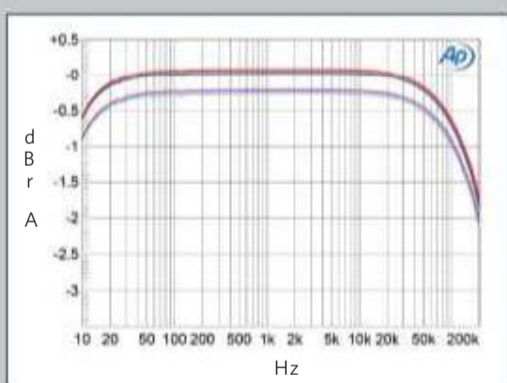


Fig.11 ATC CDA2 Mk2, analog input, frequency response at 1V into 100k ohms (left channel blue, right red) and 600 ohms (left cyan, right magenta) (0.5dB/vertical div.).

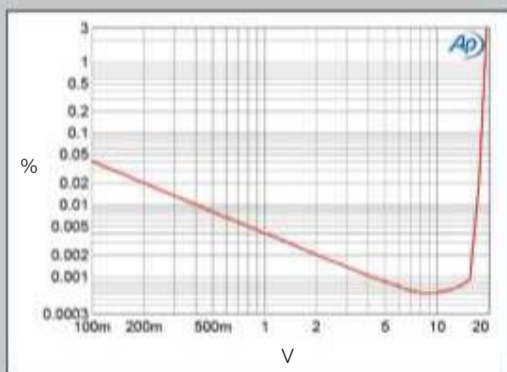


Fig.12 ATC CDA2 Mk2, analog input, distortion (%) vs 1kHz output voltage into 100k ohms.

laid bare, and it's a wondrous thing, even if, undoubtedly, some studio enhancement was involved: Kral's voice is whisper-lush and intimate, while old Tony's sounds rather small. Through the CDA2 Mk2, every glide and syllable of Kral's dark, husky voice was a joy, and Peter Washington's double bass and Kenny Washington's drums sounded huge and transparent. Bill Charlap's piano wasn't as effervescent as the other instruments and the voices, but it's a testament to the CDA2 Mk2's powers of resolution that it presented all this nuance and subtlety with consistent clarity and naturalness. It tempered utter faithfulness to the recorded event with a dash of romance.

With the Kral-Bennett CD standing as the ultimate in fidelity, other reference CDs fell in line as either less well recorded or with a different sonic goal in mind. Even with a recording of lower quality, the ATC imbued the music with a trace of richness that I found enjoyable. There was nothing threadbare or etched or bright or thin in the ATC's sound, only adherence to the recording with a dab of soul and lushness. That last quality sometimes added plumpness to bass notes, yet the CDA2 Mk2 consistently resolved the details of a CD's production and its ambient details—the space around the notes.

One thing that at first bothered me was the ATC's seeming reproduction of modern jazz CDs as mono productions, with aural images clustered toward the center of the soundstage. But as soon as I played a well-loved CD, such as the 2009 re-mastering of the Beatles' *Magical Mystery Tour* (CD, Parlophone 4 58221 0), its wide if not terribly deep stereo spread snapped into immediate, panoramic focus. (Does modern jazz involve lazy, mono-centric production techniques?) I played a wide swath of CDs—the ATC presented each as a character study of a unique sonic personality telling a singular story. The CDA2 Mk2 was unfailingly transparent to the source, warts and all.

Air's *Talkie Walkie* (CD, Astralwerks ASW 18270) resounded from my DeVore Fidelity Orangutan O/93s as never before. The French electronic duo's stacked synths and honeyed voices are always compelling, but through the CDA2 Mk2 *Talkie Walkie* was a complex orchestral vision with the density of Stokowski's *Fantasia* soundtrack. Bass tones were fleshy and Technicolor

vivid, voices mysterious and hypnotically layered (especially in "Run"); the music was intensely immersive. Where before I'd heard simple layers of synths, now I heard a midnight forest humming with a thousand breathing insects and animals. The Mk2 created a nearly hallucinogenic experience.

Brad Mehldau's *Seymour Reads the Constitution!* (CD, Nonesuch 79344-8) sounded small and veiled, his piano lacking color and scale. Two CDs from Lisbon's Clean Feed label, *The Heat Death's The Glenn Miller Sessions* (CD, CF460CD) and *Igor Lumpert & Innertextures' Eleven* (CD, CF462CD), followed suit, though their avant explorations had a livelier overall sound than the pale-sounding Mehldau.

It's commonly believed that a good recording of an acoustic piano will reveal your system's tonal fidelity, and its ability to render clean macro- and microdynamics and spatial cues. The CDA2 Mk2 burned brightly with the second volume of Christoph Ullrich's traversal of Mozart's piano sonatas, K.310, 331, 540, and 570 (CD, EigenArt 10360), revealing fast transients and a chilled-sunlight-pouring-through-my-brain transparency I've heard with no other CD player. The leading edges of piano notes had a brilliant, burnished quality that lent this music great vitality, with excellent spatial and tonal virtues.

My jazz discovery this time out was singer Judy Niemack's *New York Stories* (CD, Sunnyside SSC 1515), recorded in Copenhagen with the Danish Radio Big Band, Jim McNeely conducting his own arrangements of standards and not-so standards. The recording's personality is to the fore and life-size, each instrument well realized, and with a touch of treble filigree creating a lustrous glow. As with the Krall-Bennett disc, but on a larger scale, I could hear the studio walls, the distance between the singer and her mike, the truth of the recorded event warmed by a touch of aural splendor.

Meet the Files

Allied to my MacBook laptop and Western Digital hard drive via a Mytek USB cable, the ATC CDA2 Mk2's internal DAC made quick work of AIFF files. Scrolling through thousands of files I'd forgotten about, the ATC's DAC sounded smooth, tonally convincing, clean, and reasonably dynamic. Going from physical CD to ripped files is like switching vinyl out for



digital, but with the edges polished and dynamics truncated. The sound was very good overall, including from DSD files, but it lacked the visceral grip of CDs through the ATC's transport. I didn't stay here long.

Out with the Shindo, In with the ATC

When I swapped out my Shindo Allegro preamplifier for ATC's internal preamp running direct into the power amp, things got only better. While music now sounded slightly more forward, it also grew in scale, resolution, and weight—especially bass weight, which turned boomy with some CDs. Now, with the Krall-Bennett CD, I could hear piano hammers striking piano strings. Tony Bennett's voice was more detailed, the sense of its fleshiness more vivid; his and Krall's voices were better balanced with each other. Ullrich's disc of Mozart sonatas also revealed the unique sound of hammers on strings, and weight and tonality also improved, creating a massive soundstage and a more forward sound. All in

all, I was surprised at how different the ATC's internal preamplifier sounded from my Shindo Allegro preamps. Warmth remained, as did the ATC's luminous translation of digital material, while resolution—and, to a larger degree, weight and soundstage height—improved by considerable margins.

Conclusions

You could easily spend \$2000 apiece on a CD player and preamplifier and not get the construction quality, ease of use, and fantastic sound of ATC's CDA2 Mk2 CD preamplifier. I was shocked when the ATC went head-to-head with my more expensive Shindo preamp and bettered it in some regards, and it worked very well with my tubed power amplifier. With ATC's CDA2 Mk2 offering pleasing tonality, resolution, and dynamics, a versatile feature set, and rock-solid build, all for a decent price, it's impossible not to crown it with the highest recommendation. It can provide a fine starting point for a solid high-end system. ■

ASSOCIATED EQUIPMENT

Analog Sources Kuzma Stabi S turntable & Stogi S tonearm, Thorens TD 124 turntable & Jelco TS-350S tonearm; Denon DL-103, Ortofon Quintet Bronze cartridges.

Digital Sources Apple MacBook computer running Audirvana Plus; Halide DAC HD, PS Audio NuWave DACs; LG BD550 BD player; Western Digital T2 Mirror Drives (2).

Preamplification Auditorium 23 A23 moving-coil step-up transformer, Mytek Brooklyn DAC, Shindo Laboratory Allegro preamplifier, Schiit Audio Valhalla 2 headphone amplifier.

Power Amplifiers Mytek Brooklyn Amp, Shindo Laboratory Haut-Brion.

Integrated Amplifier Heed Audio Elixir.

Loudspeakers DeVore Fidelity Orangutan O/93, Elac Debut B6, Quad S-2.

Headphones Master & Dynamic MH40.

Cables Digital: Mytek (USB). Intercon-

nect: AudioQuest Water, Auditorium 23, JPS Labs Superconductor, Shindo Laboratory, TriodeWire Labs American. Speaker: AudioQuest Castle Rock, Auditorium 23, Tellurium Q Black. AC: manufacturers' own.

Accessories IsoTek EVO3 Aquarius line conditioner, Mapleshade Clearview Double Helix Mk.II power strip; Music Hall Aztec Blue & Mooo record mats; Spec AD-UP1 Analog Disc Sheet; Salamander five-tier rack; IKEA Aptitlig bamboo chopping boards (under preamp, power amps); Mapleshade maple platform (15 by 12 by 2, under turntable), mahogany blocks (2 by 2 by 0.5); 3"-thick studio-treatment foam damping (ceiling, walls).

Listening Room 12 L by 10 W by 12 H, system set up along long wall; suspended wood floor, 6"-thick walls (plaster over 2x4), wood-beamed ceiling.—Ken Micallef