

TAD-CE1TX loudspeaker system

AN OVERWHELMING
EXPERIENCE THAT
FEELS "LIKE REAL"

TAD-CE1TX
loudspeaker system

lite Verdict
2024

100+

Luxury Class

www.lite-magazin.de

Impressive
design
with
marvellous
texture

Immersive
illusionary power





TAD-CE1TX loudspeaker system

An overwhelming experience that feels "like real"

Impressive appearance: The TAD-CE1TX loudspeaker system radiates absolute high quality with its large dimensions and elegant, exclusive design.

Next Level: With the CE1TX, TAD Labs present the successor to their excellent CE1 loudspeaker system - and once again enhance the performance of this compact high-end sound transducer with a number of further developments and technology transfers from the Reference series. Of course, the famous beryllium tweeter in the coaxial CST driver also guarantees the immersive sound experience typical of TAD. We experienced the breathtaking performance of this three-way loudspeaker in the test.

TAD Labs starts where other manufacturers stop: The Japanese high-end forge was spun off from Pioneer almost fifty years ago as a development laboratory to explore what was technically feasible - and so the Technical Audio Devices Laboratories have always maintained a claim to "engineering excellence", with which they initially specialised in the professional speaker sector: Numerous film and sound studios from Pixar to Electric Ladyland work with the Japanese company's high-tech sound transducers. With this top-notch approach, TAD has also been developing high-end sound transducers for the consumer sector since 2003 and launched the "Evolution" series in 2011 in order to make the manufacturer's acoustic



Our test model is clad in a beautifully grained walnut veneer. This veneer consists of one sheet and therefore extends continuously and uninterrupted across the front, top, back and underside of the carcass. The excellent lacquer finish emphasises the texture of the wood - and at the same time develops a shine and depth as if the lacquer had just been applied and was still wet. The black cheek areas in particular are reminiscent of the look of real piano lacquer.

trademarks - namely homogeneous-immersive presentation and absolutely balanced reproduction - possible at more moderate prices. And all this measured by TAD standards: Because even with this entry-level series, in which the CE1 has so far functioned as a bookshelf loudspeaker, development and production are carried out entirely in Japan - with cost-intensive, uncompromising meticulousness and largely by hand by a small team of certified employees.

Absolute high quality

Of course, TAD Labs has also applied this outstanding accuracy and categorical quality standard to the new CE1TX, which now replaces the CE1 - and so this compact loudspeaker system exudes absolute high quality through its mere appearance. Despite the great visual similarity, the CE1TX surpasses its predecessor in terms of elegance and sophistication. The aluminium panels on the sides of the bass reflex system, which were previously integrated into the side panels, are now mounted on top - resulting in a harmonious, sleeker appearance thanks to the harmonious bevelling. The black cheek pieces are no longer satin matt, but high-gloss like the central body. This again promotes homogeneity. TAD has refined this finish once again. After an elaborate and time-consuming process of painting and polishing, the surfaces have a flawless, mirror-like evenness and - with their deep, intense lustre - convey the illusion that this paint is still wet. In the all-black version, this results in an aristocratic piano lacquer look.

Impressive design with marvellous texture

On our test model - in which the front, back, top and underside are covered throughout with a genuine walnut veneer - this new lacquer also emphasises the wonderful grain of the wood all the more intensively. Underneath this elegant cladding is a thick-walled housing that con-



Verdict
2024

100+
Luxury Class

www.lite-magazin.de

Model:	TAD-CE1TX (Compact Evolution One TX)
Product category:	Bookshelf speakers, compact speakers
Price:	€ 34,000.00 / pair
Guarantee:	5 years when purchased from an authorised specialist dealer
Versions:	- Housing: Walnut real wood veneer (high gloss), black (high gloss) - Cover: Black
Distribution:	TAD Labs Europe, Krefeld Phone: +49 2151 932 618 www.tad.tokyo
<hr/>	
Dimensions (HWD):	- 510 x 287 x 447 mm - 1101 x 399 x 485 mm (with optional stands) - 1135 x 399 x 485 mm (with optional stands and spikes)
Weight:	29 kg / piece
Design:	3-way, passive, bass reflex enclosure
Tweeter/ midrange driver:	Coaxial chassis (CST [Coherent Source Transducer]) - Tweeter: 1 x 35 mm (spherical cap, beryllium) - Midrange driver: 1 x 140 mm (cone, magnesium)
Woofers:	1 x 180 mm (cone, MACS II [Multi- Layered Aramid Composite Shell])
Frequency response:	1 x 155 mm (cone, MACC [Multi- Layered Aramid Composite Cone])
Frequency response:	34 Hz - 100 kHz
Transition frequencies:	250 Hz, 1.8 kHz
Impedance:	4 Ω
Characteristic sound pressure:	85 dB (2.38 V, 1 m)
Load capacity:	200 W

Score

Overall rating:	100+
Class:	Luxury class
Price/performance:	reasonable

tributes significantly to the hefty total weight of 29 kilograms. This body combines robust birch plywood struts with medium-density fibreboard to provide the desired combination of extreme rigidity and a high degree of vibration damping. The bracing has been further optimised in the CE1TX. The resulting improved resonance and vibration resistance made it possible to reduce the amount of damping materials used to prevent standing waves in the housing. The volume that can be used for sound conversion remains unchanged, although the CE1TX is slightly slimmer in both height and width than its predecessor. Measuring 51 x 29 x 41 centimetres and designated as a bookshelf speaker, the CE1TX is nevertheless an impressive speaker in terms of its dimensions.

Sophisticated bass reflex tuning

The aluminium panels screwed to the body also contribute to the dimensions, weight and vibration immunity of the body. These ten millimetre thick panels – radiating a fine shimmer with their brushed and anodised surface – are actually part of the sophisticated bass reflex set-up developed by TAD, which already distinguished its predecessor: The air exits the housing on each side via a tailored, gently chamfered slot and is then channelled forwards and backwards through the aluminium panels. Because the flat air duct widens from the slit to-

wards the front and rear mouth, the sound guide has a horn-like structure. This bidirectional and double-sided “Aero-Dynamic Slot” thus offers several advantages: It minimises airflow noise and ensures a wide and even dispersion of the sound – and thus contributes to the fact that this compact speaker offers an amazingly powerful and deep bass throughout the room, reaching an astonishing 34 Hertz.

Amazing woofer with one-piece multi-layer cone

Compared to its predecessor, the frequency response has thus been extended by five hertz. In addition to the ample body volume and the bass reflex tuning, the new woofer also contributes to this. Although an 18-centimetre chassis is still used for the bass, it has undergone a significant upgrade: The newly developed cone is derived from the R1TX woofer in the Reference series. The CE1TX is designated as “MACS II” – this standing for “second generation multi-layer aramid composite construction”. This is also an exclusive TAD speciality: The membrane consists of five layers of both woven and non-woven aramid fibres. This multi-layer membrane is amazingly one-piece: The cone and central dust cap form a continuous oscillating surface. This increases the stability, so the membrane is highly resistant to deformation



The ten-millimetre-thick aluminium panels on the cheeks contribute to the exclusive design and vibration calming of the enclosure – yet are primarily part of the elaborate and sophisticated bass reflex tuning: The panels deflect the air that flows through the slit-like body openings. Rounded elements between the body and panels create a horn-like sound guide. This ensures that the air is radiated widely and evenly both forwards and backwards. This bidirectional and double-sided “Aero-Dynamic Slot” also prevents air turbulence and flow noise.



The multi-pleated surround of the woofer surrounds the cone and its shape ensures defined guidance: It combines the best possible freedom of movement for the vibrating surface and - in conjunction with the centring spider - ensures a controlled return of the cone to its rest position. In order to avoid unwanted vibrations and resonances, this special surround is provided with a damping coating.

despite its low mass. The aramid mat material on the back of the membrane has also been reworked to further increase rigidity and internal damping. Even the multi-folded special surround has a damping coating. As a result, this woofer performs briskly, with low colouration and distortion.

TAD speciality: CST coax for mids and highs

At around 250 Hertz, the woofer then hands over to the mid and treble fractions. This is where the next TAD speciality, including a new development, comes into play with the CST. The "Coherent Source Transducer" is a coaxial system that was originally developed for the TAD Reference One floorstanding loudspeaker. Coaxial drivers offer great advantages: Here, the tweeter sits in the centre of the midrange driver, so both drivers radiate sound from the same place, acting as a point source - just as sound propagates in nature. The reproduction of a coax system is therefore very homogeneous and has excellent spatiality. However, one problem needs to be solved: The sound of the embedded tweeter is also guided through the surrounding cone of the midrange driver - while the midrange driver cone also moves. This means that the dispersion behaviour of the tweeter is constantly changing. TAD has moulded the cone of the midrange driver in such a way that it controls the directional characteristic of the coaxial tweeter.

New magnesium midrange driver with special coating

To achieve this, TAD relies on a newly developed magnesium midrange cone: This ultra-light metal makes it possible to produce an extremely rigid oscillating surface that also has a high level of internal damping. It is therefore resistant to the formation of partial vibrations on the membrane. Its surface also has a new coating: It first underwent a chemical transformation process and was

then painted. This not only eliminates material-specific resonance noises - the mid-range reproduction is clearer and free of distortion too. The resting point of the cone diaphragm was also readjusted. This again reduces distortion in the mid-frequency range and improves linearity at the smallest excursions. The phase and directional characteristics of the tweeter and midrange drivers have also been tuned in the range of their crossover frequency - at around 1.8 kilohertz to be precise. Together, they consequently achieve a coherent and desired directional dispersion across the entire bandwidth in their field - not only on the axis of the driver, but also off this axis. This ensures an extremely natural, vivid and three-dimensional presentation.

Light metal tweeter from the beryllium tamer

These TAD trademarks are also made possible by the beryllium tweeter. TAD has achieved world fame with this diaphragm material; the Japanese are beryllium pioneers: Over almost fifty years, they have built up outstanding expertise in harnessing this expensive and delicate material for sound conversion. Beryllium is extremely hard and super light - ideal properties for fast, accurate and impulse-true sound conversion. Unfortunately, beryllium is also highly sensitive and brittle - and therefore at acute risk of breakage. However, TAD has tamed this capricious light metal: The membrane is manufactured using a proprietary gas separation process that has been continuously refined over the decades. The beryllium is vapour-deposited in the process. This process gives the material an extremely high rigidity and, due to the bonding of the particles during vapour deposition, an internal damping that a metal in its original state would never achieve. The beryllium diaphragm thus converts sound with a very smooth frequency response and an extremely clear sound. The beryllium diaphragm of the CE1TX tweeter also originally came from the reference series model R1TX.

Computer analysis for spherical cap optimisation

Thanks to its material properties, the tweeter can convert even extremely high frequencies. To ensure that this happens evenly across the entire frequency range, TAD uses a computer-aided optimisation technique called the "Harmonised Synthetic Diaphragm Optimum Method" (HSDOM) when developing the diaphragm shape. With the help of this computer analysis, a dome design was achieved that enables precise control of both the vibration and resonance behaviour as well as the piston-shaped back-and-forth movement of the unusually large 35 millimetre dome - and thus clean reproduction up to a stratospheric one hundred kilohertz, according to the data sheet! The crossover for the tweeter, midrange and woofer consists of separate circuit boards that are also installed separately in the housing to ensure that all the chassis of this three-way loudspeaker work together harmoniously and precisely. This prevents mutual interference. First-class, strictly selected and tightly tolerated components are used on the component side. The crossover has also been modified to optimise the phase



The coaxial driver for mids and highs is surrounded by a matt aluminium ring and protected by a fine-mesh metal grille. This benefits the sensitive beryllium tweeter, which sits in the centre of the midrange cone. Together, this coaxial duo produces a point source-like dispersion that is extremely spatial, homogeneous and natural.

and amplitude characteristics of the drivers in line with the modified shape of the CE1TX enclosure and its new drivers.

The TAD-CE1TX in practice

Now we finally want to hear the Compact Evolution One TX, as the loudspeaker system is called in full. In the test room, we connect it to an extremely suitable TAD electronic system consisting of the TAD-D1000TX SACD player, the TAD-C1000 preamplifier and the TAD-M1000 stereo power amplifier. When positioning the speakers, we follow the TAD instructions, which recommend 30 to 60 centimetres from the rear wall and more than one metre from the side walls. The distance between the loudspeakers should then be smaller than their distance from the listening position. Here we start with a ratio of 1.80 to 2.20 metres. To do this, we align the speakers with the listening position, as recommended in the instructions. For this setup, it is helpful to place the CE1TX on suitable stands. We start with "Beat Hotel" by Allan Taylor - and his guitar introduction immediately makes us look up from the laptop on which we're writing this text:

Excellent fine resolution

What a direct, clear, brilliant sound! Taylor plays an acoustic guitar, the low strings of this six-string are metal wound and the high strings are made of pure steel. And the CE1TX lets us experience this steel: We hear how Taylor first plucks the treble strings with his index, middle and ring fingers, which have a brighter and harder sound - and then plucks a wound bass string with his thumb, which sounds somewhat muted in tone. What a fine resolution! Taylor now continues this plucking pattern, and we can hear even the most subtle playing noises: the smallest slips and touchdown noises of the playing hand fingers on the strings, minimal buzzing when the strings briefly touch the frets after plucking with the strumming hand: the CE1TX presents this guitar playing so vividly and richly detailed that we can see Allan Taylor playing right in front of us - including the movement of his hands and fingers.



Close-up of the "Coherent Source Transducer" (CST), TAD's coaxial driver speciality: Here you can see the complex moulding of the chassis. The dome shape of the 35 millimetre diameter - and thus unusually large beryllium tweeter - was achieved using a computer-aided optimisation technique for optimum control of the oscillation and vibration behaviour. With the manganese midrange driver, the tweeter embedding and the cone design are designed in such a way that the entire system delivers a harmonious, coherent dispersion - even beyond the sweet spot.

Outstanding spatiality

This plasticity and fine resolution is now complemented by outstanding spatiality: After Taylor's intro, drums, percussion, bass and saxophone join in - and so the stage, which the songwriter initially occupied sitting alone on the right, fills up with the musicians in his band. That happens magnificently: First, the drummer positioned in the centre back lets his ride cymbal vibrate with felt clappers - yes, the CE1TX also reveals such subtleties. The percussionist then intensifies this atmosphere with the rustling of his shaker, where we can virtually hear the grains of sand in the shaking. Then a second guitar on the left plays additional interjections, while a saxophone in the centre of the stage contributes a melody in a minor key. The CE1TX presents these instruments with a superb presence and tangibility, spreading out the musicians generously in front of us on a wonderfully wide and deep stage. The three-dimensionality and depth gradation is simply excellent!

Astounding power in the bass

Now the bass begins on the ultra-low, thick B-string with a gentle slide from d to e - and this now sustained low note has a surprising fullness. But it can be even better: We move the sofa back another thirty centimetres - and now we've found the ideal position: The bass now has an almost astonishing power, with its volume it fills our room effortlessly and seemingly endlessly, until we feel the pressure of this attack in our stomach when we pluck the bass string again. Despite its ample volume for a bookshelf loudspeaker, we would not have believed the CE1TX to have this low-frequency capability! With our eyes closed, we would bet that we had a full-grown floorstanding speaker in front of our ears - especially as the bass has a marvellous effortlessness that a compact sound transducer normally lacks. This bass provides a fantastic foundation for the mysterious intro of the song, which is held in a dark minor key.



The CE1TX terminal has four large solid brass connection terminals on a five millimetre thick aluminium panel. Thanks to the large receptacles, even high-cross-section stranded wires can be used. The weighty clamps are wonderfully smooth to turn and can be tightened easily thanks to their good grip. With their solid design, they also hold very thick and heavy cables securely.

Intense musical life

Then Taylor starts to sing - or rather, to murmur. The songwriter tells us what happened at the end of the 1950s in the legendary Paris Beat Hotel - an actually nameless dosshouse where the who's who of the Beat Generation from Ginsberg to Kerouac celebrated their excesses. Taylor practically murmurs his fantastic story into our ears, that's how close he seems to be to us: We can hear every nuance of tone and even his breathing in his soft, sometimes almost whispering voice - in fact we almost feel Taylor's physical presence. This immense presence means we have real problems writing down what we've just heard as a text: The reproduction is so lifelike, intense and involving that it demands our full attention. We've rarely experienced such a captivating rendition - in the best sense of the word. This loudspeaker is made for listening and being a musician, not for background music.

Immersive illusionary power

The CE1TX also succeeds in capturing the imagination with its almost immersive quality: The image is so enveloping, the 3D visualisation so perfect, that we forget our real space in an instant and immerse ourselves in the imagined ambience. This illusionary power is of course particularly effective in live recordings. We experience this in George Gershwin's piano concerto, which the world-class pianist Kirill Gerstein performs with the St. Louis Symphony Orchestra in St. Louis' Powell Hall. Here, the short pause before the final allegro is enough to promptly transport us to the concert hall: The high-resolution CE1TX immediately conveys the hall atmosphere, which is made up of the sounds of the musicians and the audience as well as the room reflections of all these sounds in Powell Hall. In this magnificent theatre hall, the CE1TX now places us right next to the stage: Gerstein plays the fast-paced final movement right in front of us. We hear every single keystroke of his ten fingers - ..



The rounding at the top and the bevelling at the sides of the enclosure ensure a smooth appearance and reduce the acoustic effect of edge-related sound refraction. The bevelling of the black cheeks continues harmoniously and seemingly seamlessly in the aluminium panels - creating a slender, harmonious appearance. This coherence is only spoiled by the different edging and fixing of the chassis.

Explosive dynamics

... and this closeness and immediacy alone make it a thrilling experience, because Gerstein sometimes uses the piano like a percussion instrument in this gripping Allegro - performing rapid excursions and leaps over the entire keyboard. But there is also an almost explosive dynamic that we experience in the interplay with the orchestra: we flinch several times because the powerful and high-level tutti beats of the orchestra with rich timpani and trumpets hit us in the limbs. But the CE1TX also delivers the many quieter passages and gradual build-ups with the excellent intensity and volume gradation with which David Robertson conducts his orchestra through this movement. So here, too, we have the feeling of a live sounding body that's "just like real". Once again, this is aided by the perfect width and depth staggering, as the musical action is repeatedly distributed to individual instrument groups - these sitting far apart from each other and maintaining a constant dialogue with the piano.



The multi-pleated surround of the woofer surrounds the cone and its shape ensures defined guidance: It combines the best possible freedom of movement for the vibrating surface and - in conjunction with the centring spider - ensures a controlled return of the cone to its rest position. In order to avoid unwanted vibrations and resonances, this special surround is provided with a damping coating.

Superb radiation pattern

The first violins on the front left are answered by trumpets on the centre-right, while the marimbas and the wood-blocks of the percussionists respond to the really close piano trills from a distance at the back. The CE1TX, with its superb dynamics and 3D imaging, delivers the back and forth Gershwin wanted as an exciting and thrilling interaction between all the instruments. The coherence of the reproduction is also maintained far outside the sweet spot. We have a homogeneously balanced image even next to the sofa. It is also retained if we significantly reduce the angle of the speakers. With its superb radiation pattern, the CE1TX achieves a highly stable, homogeneous and immersive reproduction. All this is confirmed by a musical tour through various genres. This begins with electro brand Trentemøller, who composes sound spaces with synth layers and noise samples in "Evil Dub", the effect of which is also based on a clean, deep, non-compressing bass - above which the sound layers float freely, interweave and detach themselves so as to whirl around unchecked in the art cosmos.

Perfect timing

The programme then moves on to jazz-pop à la Donald Fagen, who is known for his superb productions with a strong line-up. Eleven musicians make up "Mary Shut The Garden Door": Besides drums, percussion and bass, guitars, keyboards, horns and backing vocalists play behind frontman Fagen. Despite the resulting dense vocal-instrumental movement, the performance is wonderfully clear and transparent. Freddie Washington's bass provides a deep, natural-sounding foundation on which all the

other musicians can unfold just as naturally. Despite the variety of voices and instruments, we experience a harmonious, relaxed reproduction with perfect timing - as if it could not be otherwise. This allows us to follow every instrumental interjection and even the middle voices in the backing choir. We understand the ingenious ideas Fagen has composed here, the virtuosity and skills his superb musicians bring to the interaction - and so listening to music with the CE1TX is a double pleasure.

Conclusion

The CE1TX is a high-end loudspeaker system of breathtaking quality. This begins with the extreme material quality, the meticulous accuracy and the categorical quality standards with which this sound transducer is manufactured - and culminates in the outstanding performance that this compact sound transducer delivers: The reproduction is absolutely homogeneous and balanced, wonderfully clear and transparent, offering a phenomenal wealth of detail. This is one of the reasons why the image has excellent plasticity and presence. However, the fantastic dynamics in both fine and coarse detail also contribute to this. In addition, the CE1TX shines with the truly enveloping, highly three-dimensional imaging for which TAD is famous. The powerful yet calm bass reproduction is completely astounding. Thanks to its superb dispersion behaviour, the CE1TX also offers all these merits far beyond the sweet spot. This speaker system thus achieves an immersive and involving reproduction: It rightly and logically attracts full attention - and so listening to music becomes an overwhelmingly "life-like" experience.

*Test & Text: Volker Frech
Photos: Branislav Ćakić*