

Review of TAD' CR1TX
by Wojciech Pacula,
March 2022, on :



「 TECHNICAL AUDIO DEVICES LABORATORIES, better known as TAD, is a Japanese company founded in 2000. Its roots, however, date back to 1978, when a separate department was established in the Pioneer Electronics corporation to develop high-quality loudspeakers. The first TAD product was the Model One. In 2012, electronics joined the speakers in the lineup - a preamplifier, power amplifier, SACD player and DAC. 」

The TAD COMPACT REFERENCE ONE LOUDSPEAKERS, whose name is shortened to TAD-CR1TX, are the most expensive and one of the largest monitors I have had at home and listened to anywhere, ever. For 74,000 EUR, plus the cost of the stands, you can buy absolutely high-end, large, great-looking, multi-driver floor-standers from well-known companies, so why would you pay so much for stand-mount speakers?



The answer lies both in the technologies found in the TAD-CR1TX and in their performance. This is because this company, founded in 2000, builds loudspeakers, the heart of which is a two-way coaxial system. Both its diaphragms - midrange and tweeter - are made of beryllium. As TAD informs in its instruction manual - as is usual with Japanese engineering companies that are excellent and informative - it is "the lightest and most rigid material available for this type of diaphragm". This system is manufactured by TAD itself, same as the fantastic tweeter.

The letters "TX" in the name of the monitor inform that it is the latest version for which the cabinets are made in Japan. And this is the second part of the equation - the cabinet that is made by one of the top companies of this type, specializing in high-class, expensive furniture. TENDO MOKKO, because that's who I am talking about (the letter 'T' in the name), was founded in Tendo, a city in the Yamagata Prefecture, in 1940. World-famous designers and architects work for it - TAD refers to two names in this context: Sori Yanagi and Kenzo Tange.

The multi-layer, mechanically and acoustically complex cabinet of the TAD-CR1TX was named SILENT (Structurally Inert Laminated Enclosure Technology) by TAD, because it is supposed to vibrate as little as possible, i.e. color the sound as little as possible. What's more, both drivers are mounted in a special way. The CST (Coherent Source Transducer) system is mechanically decoupled from the cabinet, and the woofer is mounted to a multi-layer cabinet made of thick plywood.

Let's add to this list also expensive components in the crossover, expensive terminals and excellent woodwork, and the price of these speakers - although still staggering - will make much more sense. After all, Japan is one of the most expensive places to make products in small series. And the TAD-CR1TX speakers are a luxurious, absolutely high-end product. In every way possible.

I TAD-CR1 ↔ TAD-CR1TX



\ The most famous TENDO MOKKO project, the BUTTERFLY STOOL designed by the artist SORI YANAGI. The original version from Japan costs around \$ 7,500 \ foto Tendo Mokko.

WITHOUT KNOWING that the tested loudspeakers are a new version of the TAD-CR1, probably many of us, apart from the really perceptive ones, would not notice it. Their construction, body and shape seem to be identical. One could begin to suspect something due to the new color of the veneer - the Black Emerald (the company "borrows" the names of the veneers from precious stones), but it could be the only clue. Most of the changes took place below the "surface".

The biggest one is related to the cabinet. Now it is made by a company specializing in very expensive art furniture. The producer in the document entitled CR1 speaker system TX development stage mentions several changes. The most important ones include reducing the number of elements, which is to improve rigidity, reduce the diameter of the module over the coaxial system, but most of all make its housing, visible from the outside in the form of a section of a cylinder, not using milling, but rather bending and lamination.

Further changes concern the suspension of the woofer - now it is to be more rigid, but also more linear - changing the shape of the bass-reflex outlet, improvements in the crossover, a different way of making the woofer coil, as well as better decoupling of the coaxial drivers from the cabinets. ◆

■ TAD-CR1TX

THE TAD COMPACT REFERENCE ONE LOUDSPEAKERS are, as we read on the manufacturer's website, a compact version of the reference floor-standing loudspeakers the TAD Reference One, which were introduced in 2019. The TAD-CR1TX was introduced a year later. We read about them:

“

In 2019, we introduced to the consumer market the critically acclaimed TAD Reference One flagship speaker system, the culmination of our point-source sound concept achieved by combining TAD engineers' wealth of experience and expertise in speaker design with leading-edge speaker technologies to create the ideal audio experience in a home environment. Now we have reached another milestone with the introduction of the TAD Compact Reference One, which has taken advantage of every element of advanced technologies incorporated into the design of our flagship model. The TAD Compact Reference One delivers the rich point-source sound with the quality that makes the listeners forget they are listening from a speaker system. Its extraordinarily resonant sound will satisfy even the most discerning audiophile.

The TAD-CR1TX are three-way stand-mount monitors in bass-reflex cabinets. They feature a CST coaxial system with transducer diameters of 35 and 160 mm and a woofer with a diameter of 200 mm. The first two - please note the large diameter of the tweeter - are mounted coaxially and have common acoustic centers.

The author of this idea is ANDREW JONES - the man behind the success of the Uni-Q system, a coaxial, coincident midrange and tweeter system developed for the KEF company. In the TAD version, both speakers feature beryllium diaphragms. This system operates from 250 Hz up to 100 kHz range.

The manufacturer also informs that the shape of the tweeter dome was developed using an advanced optimization system based on HSDOM (Harmonized Synthetic Diaphragm Optimum Method). Its purpose is to prevent the diaphragm from resonating beyond the audible range. The method of making membranes using a technique called chemical vapor deposition was developed by Pioneer and is currently performed for TAD by a Japanese company NGK Insulators Ltd.

The woofer features a membrane made in the sandwich technique. The diaphragm has three layers and the brand name of this solution is TLCC (Tri-Laminate Composite Cone). An acrylamide filler is placed between the two layers of aramid fiber braid - this is another name for Kevlar. As we read, the C₃H₅NO is an organic chemical compound - it is an acrylic acid amide.

The driver features a powerful magnet system with copper rings linearizing its operation and a "short coil - long gap" system (the latter is 20 mm), guaranteeing low distortion (at the cost of lower efficiency). The large diameter of the coil wound with a flat wire, amounting to 100 mm is worth noting. This driver has an unusual upper suspension system - instead of the rubber usually used there, we can see a corrugated, resin-soaked textile material. Once, drivers for high-efficiency loudspeakers were made in exactly the same way, and today we can see them, for example, in JBL loudspeakers.

This lead may be meaningful because the "father" of the loudspeaker design at Pioneer Electronics, the parent company of TAD, was the BART LOCANTHI II (1919-1994). In technical materials, TAD refers to its motto:

“

Real technology should be based on the fundamentals, not be technology-oriented, and should always place the utmost importance on sound quality.

\ source: Fundamental basics of TAD engineering approach, pdf document.

As I wrote in the test of smaller monitors from this company, the **COMPACT EVOLUTION ONE**, this outstanding engineer developed many excellent solutions. For example, the "acoustic lens" (a set of flat metal elements placed in front of a tweeter), as well as the JBL woofers, he was also involved in a research into loudspeakers and amplifier output stages designs. He worked as a consultant for JBL from 1948, and in 1960 became its vice president; he worked there until 1970. You can find out more about this amazing designer in aforementioned test.

Let's get back to the speakers under review. They are finished using a great looking veneer and the front baffles are black; the plinth, which forms the bass-reflex gap, is also black. The bass-reflex itself has an aerodynamic shape formed of plywood. The frame of the cabinet is also made of 21 mm plywood, and the side walls and the top are 30 mm thick, bent and processed on CNC machines. The speakers are shaped like a drop of water, with side walls tapering towards the rear. I would like to add that the upper, sloped part of the cabinet resembles the KEF designs and - although less so - also Bowers&Wilkins. The underside is a 27.5 mm aluminum plate.

The narrow rear baffle is entirely made of a large, solid element milled from aluminum, 27 mm thick, which also helps to cool the resistors in the crossover. Two pairs of solid, easy-to-use speaker terminals connected using thick jumpers are bolted to it. On its back there are two printed circuit boards with components - one for the midrange woofer and one for the tweeter. All the coils are air-cooled and the capacitors are polypropylene ones. The crossover divides the frequency range at 250 Hz and 2 kHz. The crossover for the bass woofer is placed in the plinth - it includes three huge core coils.

The speakers measure 628 x 341 x 446 mm weighing 46 kg (!) each; people from the AUDIO STYL company had a really hard time bringing them to my third floor apartment :) The manufacturer informs that the frequency response ranges from 32 Hz to 100 kHz, the nominal impedance is 4 Ω , and the efficiency is 86 dB.

The loudspeakers are available in two veneers versions: Beryl Red and - tested - Emerald Black. Their make and finish is flawless.

↳ **STANDS** TAD proposes bespoke stands for the tested loudspeakers, designated TAD-ST1. They are made of thick MDF elements, but in such a way as to control vibrations. What's more, they are bolted to the speakers with a screw, and two pins on the sides stabilize the position of the speakers. Large, chrome cones with washers are screwed into the sockets. At some point users could replace them with **PRO AUDIO BONO anti-vibration feet** or **FINITE ELEMENTE** ones.

The stands weight 16 kg (pcs) and measure 407 × 532 × 525 mm. They cost, not insignificant, PLN 20,000 ...

■ SOUND

↳ **HOW WE LISTENED** TAD COMPACT REFERENCE ONE should be placed at such a height that the CST system is at the level of the listener's ears, or slightly higher. Although the manufacturer declares that the directional characteristics of the system are also very good off-axis, we will get a flat frequency response on the axis. For this reason, TAD suggests directing them to the listening position. I adhered to this recommendation, as well as the suggestions for the distance from the side walls, between speakers, and from the listener.



For the test, they were driven by the SOULUTION 710 power amplifier and it was clear that they need a lot of power for them to be properly driven. But it's not just about RMS power, but about the amp's ability to deliver sudden bursts of current. Therefore, you can choose also a good tube amplifier. During the test, the signal from the Soulution amplifier was sent using SILTECH TRIPLE CROWN speaker cables. The reference point was the HARBETH M40.1 speakers, and the signal was provided by the SACD AYON AUDIO CD-35 HF player and the LUMIN T1 file player, operating as a transport, connected to the Ayon RCA input.

THE TAD-CR1TX INSTRUCTION MANUAL recommends that the first step when setting them up should be playing some material with a strong "image" on the listening axis. That's a good advice, and I use monophonic recordings for this purpose, most often the I've Got a Crush on You track from the FRANK SINATRA's album entitled Sinatra Sings Gershwin. The loudspeakers showed a few things very quickly with it, which suggested their above-average high class.

It was primarily the effortlessness with which the recording was played. The speakers absolutely disappeared from the equation, the sound came from the space between them, slightly behind the line connecting them. Sinatra's vocals had beautiful timbres, as did the wonderful trumpet. These two elements, dominating in the recording, were rendered with incredible lightness and breath. The trumpet was shown BEHIND the vocalist, and yet it was not clearly smaller - it was just different.



Listening to subsequent recordings from this album, it was impossible not to notice that the Japanese constructions delivered an absolutely coherent sound, in which it was difficult to find something that would usually be called "coloring". The slight smoothing of the attack is noteworthy, but this is what the beryllium drivers sound like. This brush of sweetness means that even badly recorded material from Sinatra's album had some charm.

He did not irritate me with sharp pins, despite the fact that the purity and clarity of the presentation was extremely impressive.

My attention, almost immediately, was caught by the clean transition between the midrange and bass. The recordings in question are usually colored, either by adding or subtracting some weight. The TAD speakers were different in this regard, they were simply neutral. For a long time it seemed to me that the woofer was not working, I even went close to the loudspeakers to check it. It turned out to be working, and quite hard at that. It just didn't color anything, but was laying a foundation for a large space. Please do not be surprised - it is the bass that is mostly responsible for the space and its scale. John Hunter, head of REL, points out this well on his blog.

To check what was really happening with the bass, I played the PETER GABRIEL's *So*, a remaster from 2003, released on a hybrid SACD, pressed in Japan. Both in the *Mercy Street*, where the bass is generated by an analog synthesizer, and in the *Big Time*, where Tony Levin plays his *Drumstick*, his own bass, and in other recordings, where we have a classic bass, in each of them, the tested loudspeakers showed a huge scale, phenomenal clarity and a certain restraint in generating strong « blasts ».

In fact, they behaved like purebred monitors, that is loudspeakers intended for critical listening in recording studios. They greatly differentiated the place where the sound engineers placed the bass, its size and even its structure. However, they never deepened it, as if they did not want to pretend to be large floor-standing loudspeakers.

Curious about this phenomenal combination of musical and technical truth, I reached for two guitar albums: PAT METHENY's entitled *What's It All About* and *New Dawn* by the DOMINIC MILLER & NEIL STACEY duo. The former, released by Nonesuch Records, was recorded without overlays, in a natural space, and Metheny played the baritone guitar on it. The speakers showed a huge, perfectly organized space in which the reflections and reverbs were as important as the direct sound. At the same time, they retained the unique timbre of the instrument, without trying to deepen it.

In turn, the duo's album was created as a result of multi-track recording sessions on Pro Tools, in which a synthesizer was added to the guitar and the guitars themselves were edited.

So this is an unusual album for the Naim label. Also because the guitars have a deeper timbre and the bass is phenomenally low here. The tested loudspeakers showed the difference between these two recordings better than the vast majority of loudspeakers that I listened to at home. Maybe only **YG ACOUSTICS HAILEY 1.2** did it in a similar way.



All the other loudspeakers that I liked and respected, such as large JBLs, like the Borg model by **FINKTEAM**, how - finally - my reference speakers, the Harbeth M40.1, they all sound more fleshy, with more saturated bass, but also bass that is slightly less differentiated dynamically and in size. The differences are not big, but are enough to show differences on the high-end level.

I HAVE ALREADY TALKED ABOUT SPACE, but I would like to come back to it for a while. TAD-CR1TX build a perfectly balanced, vivid, holographic illusion of a real event. They build it mainly deep into the stage, which is an absolute rarity, and only the mentioned YG Acoustics speakers and my reference speakers can do something like that. In turn, the width across is limited. I heard it before in reference speakers from KEF, so it seems that this is a proprietary feature of the coaxial system.

Already with the previous albums, this extraordinary ability to show real space, which is not really real, with real dimensions, although compressed to the three meters of actual space between the speakers, was shocking and refreshing for me at the same time. This class of three-dimensionality is extremely rare.

I confirmed it with the 5 Concerti for Bassoon, Strings & Continuo album with ANTONIO VIVALDI's pieces, recorded by Denon with two microphones in a technique called "One-Point Recording". Recorded digitally by a proprietary 20-bit A/D converters, it has incredible lightness and breath. For a moment it seems that the midrange dominates it, until we get used to the fact that we are sitting in a real concert hall, and we do not "see" the world as closely positioned microphones "see it", i.e. enlarged and deepened.

At the same time, however, it is a different sound than presented by the already mentioned Harbeth, FinkTeam, or - let's add - **DYNAUDIO CONFIDENCE 50**. Those constructions transfer another world to our room and place us in it. They sound in a tangible, dense way, as if they had no treble at all. Of course they are there, there is a lot of them, but what is more important in them is their structural unity, harmony, not details.

The TADs are also not detailed in the classic way, they have - as I said - a slightly rounded attack. But they are at the same time much more selective and clear, in which they resemble Sendor designs, such as the **CLASSIC 100** and - let me repeat - YG Acoustics. TADs open a window TO ANOTHER WORLD for us, the world of a musical event.

The analog, intended as quadraphonic TOMITA's Snowflakes Are Dancing recording, containing only electronically generated sounds sounded quite strong and unambiguous. In this case, the space was quite wide on the sides, the sounds also came from behind me - but this is just such a recording. Anyway, all recordings with strong use of out-of-phase sounds will sound spectacular.

The difference between this sound and the sound of digital synthesizers from KRAFTWERK albums, released in the 3-D The Catalog box, was therefore striking - the new recordings were much rounder, warmer and pleasant. If you associate "analog synthesizer" with "warmth", you have never heard it properly before. And the Japanese speakers show such differences without any problems.

SUMMARY

SO WE HAVE A PERFECT, ABSOLUTELY EXTRAORDINARY space, outstanding differentiation and fidelity, that is what was once called high fidelity. The bass goes low here, but it is not felt in such a physical way as with the Harbeth M40.1 loudspeakers. Its energy just ends up higher up the range. However, it is incredibly clear and well differentiated, which will come out both with acoustic and electric instruments, as on the fantastic re-edition of the SANTANA's Abraxas.



The loudspeakers sound in an unobtrusive, slightly distanced way. They are agnostic when it comes to the type of material, because during the test they played with equal perfection baroque music, modern rock, 70s rock, electronics - old and new - as well as vocal. Listening to the recordings from the concert that HANIA RANI gave in the S2 studio, from WAV 24/96 files, I could appreciate the extraordinary ability of these loudspeakers to disappear from the equation and leave me alone with the performer. This performer, it is important, was on the stage, in front of me, not in my room - this is one of the qualities of the TAD loudspeakers.

We also get clarity, selectivity and incredible tonal differentiation. Dynamically they are great monitors, but you have to know that large designs do it better, are more energetic. That's a life. The tested constructions are also not too "warm". If you are looking for such a mix of features, the TAD-CR1TX will be - in my opinion - the best proposition of this type on the market. Perfectly made, technically perfect and extremely musically mature loudspeakers from one of the most interesting companies in Japan. Our 'GOLD Fingerprint' award is therefore a natural consequence of the test. ■

