

"TAD: The Artistic Intent, Intact"



TAD BRAND STORY

TECHNICAL AUDIO DEVICES LABORATORIES

Message from the President

Delivering a Truly Immersive, Soul-Stirring Music-Listening Experience to Proud Owners of Our Products

Technical Audio Devices Laboratories, Inc. (TADL) is the only Japanese high-end audio manufacturer that specializes in both audio components and speaker systems. This brochure talks about our long-standing product development and design philosophy and passion as well as proprietary technologies underlying our products. TADL is committed to upholding this time-honored tradition of creating products that deliver a truly immersive, soul-stirring music-listening experience to their proud owners around the world.

We will continue to hone our technological prowess in uncompromising pursuit of the ideal and perfection of sound reproduction.

Shinji Tarutani
President
Technical Audio Devices Laboratories, Inc.



What the TAD Brand Stands for

Technical Audio Devices (TAD) was originally the name given to a project launched by Tokyo-based Pioneer Electronic Corporation (currently Pioneer Corporation) in 1975 to develop high-end speakers for professional use. The term embodies the belief held by the late Bart Locanthi, then a renowned professional audio engineer in the United States and a technical advisor to the project, that “genuine technology is true to the basics and that genuine technology places greater importance on sound quality than on technology for its own sake.”

This belief stresses the importance of an engineering approach backed by thorough theoretical evaluations and accurate testing and infuses an uncompromising pursuit of engineering perfection into the TAD brand.

Corporate Philosophy

1. We offer products that deliver a truly immersive, soul-stirring music-listening experience and that make their owners proud.
2. We hand-assemble every one of our products using the finest technologies and with uncompromising attention to detail, no matter how technology evolves and no matter how people enjoy music changes over time.
3. We continue to innovate by incorporating new materials and technologies into our product design while adhering to the basic engineering policy and industrial design concept we have refined over the years.
4. We design our products that withstand the test of time and employ materials and technologies available only in Japan to enhance their artistic appeal.

About TADL

Nearly 30 years after the first TAD-branded speakers were released, Technical Audio Devices Laboratories, Inc. (TADL) was spun off from Pioneer Corporation in 2007 as a company dedicated to developing and marketing a broader range of TAD-branded products, which include high-end amplifiers and disc players designed to bring the best out of TAD speakers. TADL's mission is to inherit and advance the engineering prowess and assets accumulated by Pioneer in the high-end audio field over the years.



Uncompromising Attention to Detail

Our engineers have accumulated years of experience in designing high-end audio products that have won critical acclaim.

Their meticulous design work for TAD products begins by carefully selecting every part and component that goes into them and continues until the engineers have exhausted all their technical expertise and efforts. On the production line, certified artisans hand-assemble every TAD product with uncompromising attention to detail.

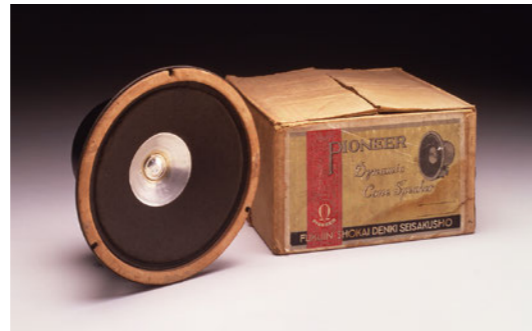


Story 01 –

40 Years Prior to the Advent of TAD (1937-1978)

Pioneer, from which TAD descended, was founded as a speaker manufacturer by Nozomu Matsumoto in 1937, when he developed the A-8, the industry's first hi-fi dynamic speaker in Japan.

In 1975, a project was launched at Pioneer to develop high-end speakers targeted at the professional sound market around the world. The project was named the TAD Project.



A-8 dynamic speaker,
the first product introduced by Pioneer

1.1 TAD Earns the Worldwide Recognition as a Leading Brand of Professional Speakers (1978-2000)

Pioneer invited Bart Locanthi, then a renowned professional audio engineer in the United States, to join the TAD Project. He accepted the offer and graciously shared his wealth of expertise in and unrivaled passion for speaker design and engineering with his counterparts at Pioneer, enlightening them on how to conduct laboratory simulations and testing as well as how to incorporate an unprecedented level of precision and authentic technologies into speaker design.

The first speaker unit that came out of the TAD Project was the TD-4001 compression driver, which was unveiled at the Acoustic Engineering Society (AES) convention held in the United States in 1978. When the TD-4001, which offered unheard-of performance characteristics, became commercially available in the United States, it created a sensation in the pro audio industry and eventually found its way into famed recording studios around the world, including those designed by Tom Hidley, who was a top-rated acoustic designer of the time, as well as AIR Studios, Capitol Records studios, and Record Plant.

TAD speaker units were also used as part of a sound reinforcement system during the concert tour the Eagles made around Japan in 1979, and the performance of the TAD speakers dazzled the audiences. Impressed with the reputation of TAD speakers, big-name musicians such as Jimmy Page and Prince installed TAD speakers in their private recording studios.

The 1980s and 1990s saw the TD-4001 and other TAD compression drivers and woofers installed in more than 300 leading recording studios in 20 countries. By the turn of the century, TAD speakers and the design philosophy behind them had won the trust of professional sound engineers.

1.2 TAD Makes Inroads into the Consumer Market (2000 to present)

The TAD-M1, the first TAD-branded speaker system for consumer use, was unveiled at the Consumer Electronics Show (CES) in the United States in 2002. The TAD-M1 was intended to reproduce sound in a natural and realistic manner and deliver high-dimensional sound imaging and sound-field immersion. Engineering attention was focused on achieving smooth dispersion and high definition of sound, which combine to deliver the rich, nuanced timbre and resonance of music as well as its spaciousness and lingering effects to the listener.

The first engineering focus was to achieve natural sound dispersion. Just as a drop of water makes perfect ripples across the water surface, the sound dispersion is about a flow of sound from the speaker dispersing continuously and naturally to fill the space. To achieve natural sound dispersion, the sound directivity from each unit in a speaker system must be accurately controlled across the entire frequency range.

This was made possible by the CST (Coherent Source Transducer) Driver we developed. The coaxial CST Driver with a tweeter dome and a midrange cone enables the smooth, ultra-wide-range reproduction of sound from 250 Hz to 100 kHz and works like a single-source full-range speaker to offer uniform directional characteristics, both horizontally and vertically.



The second engineering focus was to achieve the high-definition reproduction of sound. For a speaker system to achieve natural-sounding reproduction, it must be able to reproduce sound from audio sources of the latest formats that cover frequency ranges well beyond the audible band of up to 20 kHz. Sound in a natural environment contains a harmonic overtone of an ultra-high frequency, which is known to enhance the fundamental tone in the audible band.



A speaker diaphragm made of beryllium, which is the lightest and most rigid of metals and yet has high internal loss, is ideal for reproducing ultra-high frequency sound. The CST Driver has a tweeter done and midrange cone made of beryllium. Combined with an optimally shaped diaphragm and a finely-designed voice coil, the beryllium done tweeter provides a response as high as 100 kHz. The shallow-shaped, large-diameter midrange, made possible by the use of beryllium, offers bass reproduction down to as low as 250 Hz.

The CST Driver built into the TAD-M1 boasts the unified acoustic center of the tweeter and midrange, ultra-wide- range reproduction of up to 100 kHz, and well-controlled directivity performance, and is the epitome of years of technical achievements and expertise we have accumulated in speaker design. The coaxial design of the tweeter and midrange was made possible by the high-precision processing method that we have mastered, and the beryllium diaphragm, the only commercially available beryllium diaphragm in the world, was produced using our proprietary vapor deposition technique.

The CST Driver has been incorporated also into the TAD Reference One speaker system released in 2007 and all other TAD speakers introduced to date.



Story 02 –

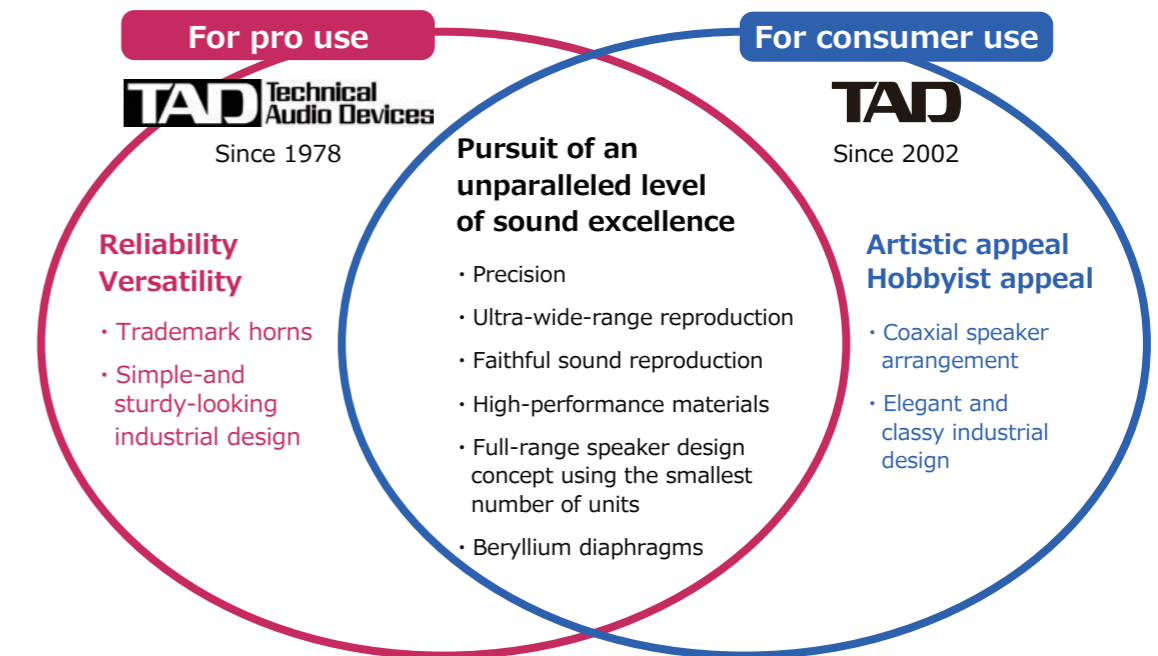
TAD Audio Components, the Best Companions to TAD Speakers

Following the release of the TAD-M1, we acknowledged the need to offer audio components in the consumer market, designed to bring the best out of TAD speakers. In 2007, Technical Audio Devices Laboratories, Inc. (TADL) was established as a high-end audio company dedicated to developing and marketing TAD-branded speakers and audio components around the world. TADL leverages a wealth of expertise and assets in audio technologies amassed by Pioneer, which had created and marketed top-of-the-line Exclusive Series audio components in Japan since the 1970s.

We are proud that we hand-assemble every TAD-branded product, using carefully selected materials and parts. All our speakers and audio components are made in Japan, and a meticulous attention to detail in artisanship gives each of them the look of a piece of finely finished craftwork rather than a piece of audio equipment.

We released the TAD-M600 monaural power amplifier in 2009, followed by the TAD-D600 SACD/CD player in 2010. Our current lineup of audio components consists of two models of preamplifiers, three power amplifiers, two SACD/CD players, and a digital/analog converter.

TAD' s Design Concept for Pro Use and Consumer Use



Story 03 –

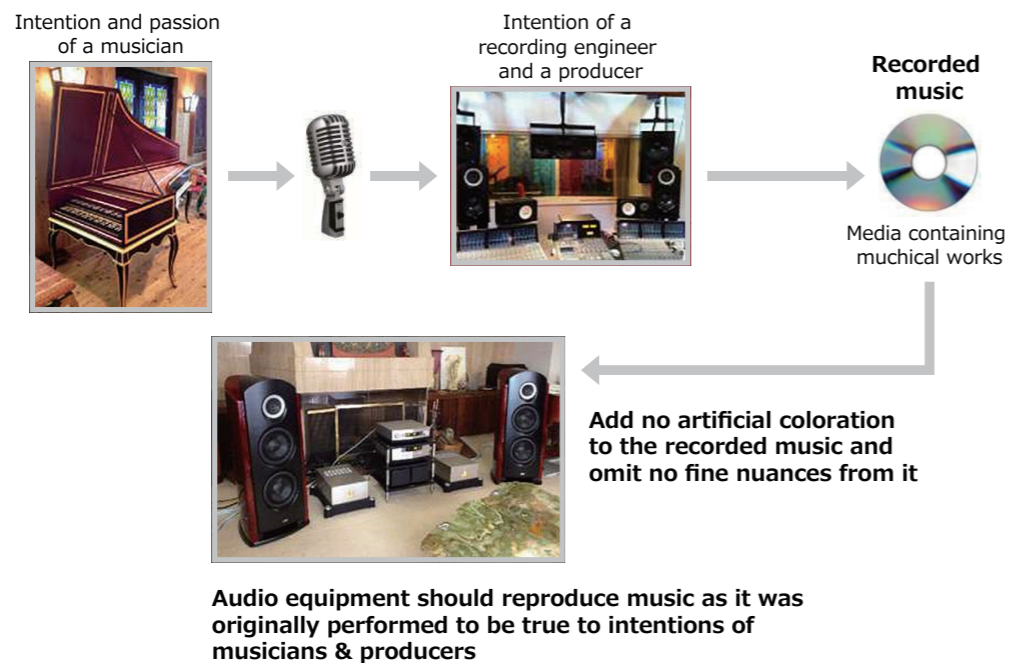
The Artistic Intent, Intact: No Artificial Coloration Added, No Original Musical Nuances Omitted

High-end audio manufacturers can be divided into two camps: One camp pursues reproduction of music with the ultimate realism of recorded performance; the other adds subtle tonal coloration to the original to make it sound more pleasing to listeners. We at TADL make products that reproduce the genuine sound without adding any artificial coloration or omitting any of original musical nuances. This design philosophy, which has been embraced by every one of our engineers and incorporated into every TAD product since the founding of the brand, has been enthusiastically received by professional studio engineers around the world.

To design TAD speakers and audio components to reproduce the genuine sound, our engineers combine a legacy of our proprietary technologies with leading-edge materials, parts, and technologies. This approach enables TAD products to delivery a being-there experience to listeners. Listeners feel as if they were sitting in a front-row seat in a concert hall and enjoying music being played right in front of them, temporarily forgetting the existence of speakers and audio components in their room. We call this concept “the Artistic Intent, Intact.”

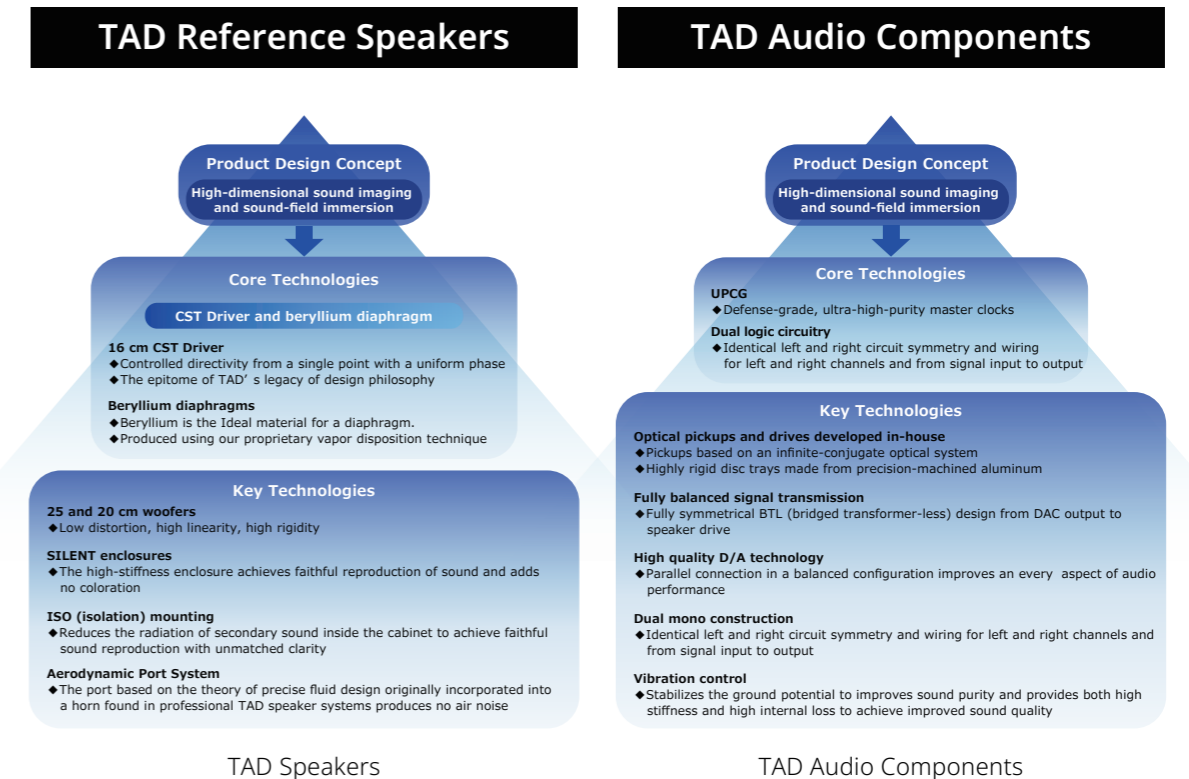
TAD Sound Philosophy

“The Artistic Intent, Intact”



Story 04 –

TAD’ s Core Technologies That Turn the Concept “the Artistic Intent, Intact” into Reality



To turn the concept “the Artistic Intent, Intact” into reality, we take an engineering approach backed by thorough theoretical evaluations and accurate testing, for which the TAD brand stands.

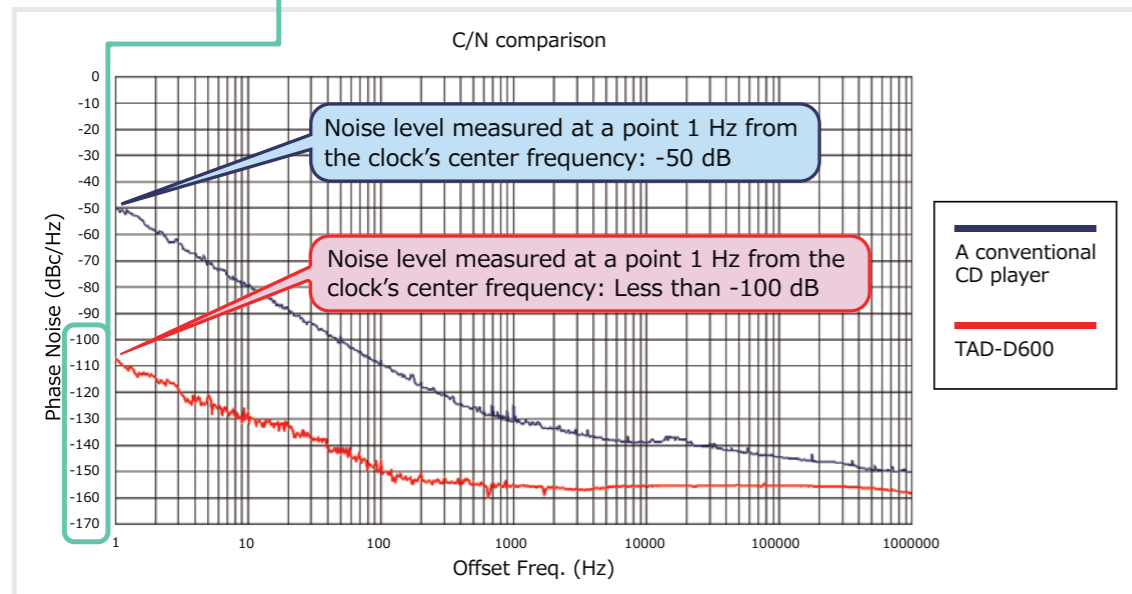
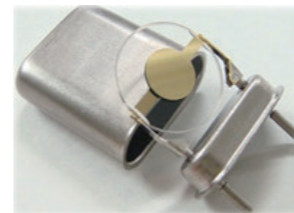
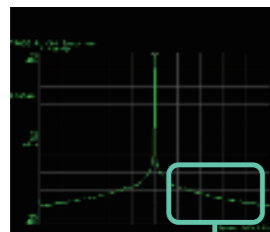
TAD speakers employ the beryllium-diaphragm-featured CST Driver, capable of ultra-wide-range reproduction of sound up to 100 kHz, as well as the SILENT (Structurally Inert Laminated Enclosure Technology) cabinet and the Aerodynamic Port System (ADS) in order to deliver high-dimensional sound imaging and sound-field immersion and reproduce the genuine sound. The CST Driver is featured in every TAD speaker, ranging from the top-of-the-line TAD-R1 to the affordable TAD-ME1. Loud speakers in the Evolution Series are equipped with the Bi-Directional Aerodynamic Slot Port, an advanced version of the ADS, to achieve richer and more powerful bass reproduction.

Inheriting and refining technologies originally applied by Pioneer to the Exclusive Series high-end audio components, we incorporate into all TAD amplifiers and disc players a fully symmetrical design for left and right channels, right down to the circuit topology, PC board, and wiring, and the fully balanced circuitry from input to output. To achieve ultimate sound purity, we use a variety of parts exclusively developed for TAD audio components.

As an example, every TAD SACD/CD player and digital/analog converter is equipped with the Ultra-High Precision Crystal Generator (UPCG) to achieve sound purity. While conventional CD players pursue the accuracy of a master clock to achieve the precision of D/A conversion, our engineers, who have years of experience in developing LaserDisc players and DVD players, focus on improving the carrier-to-noise ratio of a crystal oscillator to achieve the most accurate sound reproduction capability. In other words, our approach is to pursue the purity—rather than the accuracy—of a master clock. Some CD players employ rubidium oscillators or cesium oscillators to achieve clock accuracy. Our engineers found from extensive computer-aided analyses and listening evaluations that reducing jitter in the frequency band around the clock's center frequency is more effective than improving the clock accuracy in order to reproduce distortion-free sound.

As a result, every TAD SACD/CD player and D/A converter employs a new proprietary crystal oscillator that, compared with conventional players, reduces the noise level by more than 50 dB at a point 1 Hz from the clock's center frequency, resulting in the reproduction of jitter-free sound of the highest purity.

All TAD audio components employ a variety of custom-made parts to achieve high-quality sound reproduction.



Story 05 —

Artisanship in its Finest Form

All TAD products are designed with meticulous attention to detail and based on extensive theoretical analyses. Our master engineers conduct numerous listening evaluations of a prototype and refine its design and specifications down to the smallest details possible until they determine that the product under development meets the stringent design standards with which all TAD products must comply in order to communicate the extent of music exactly as it was originally performed.

The same level of attention to detail can be found on the production line. Every TAD product is hand-assembled by certified artisans on our lines in Japan: TAD speakers are assembled on a dedicated line set up in Tohoku Pioneer Corporation, located in Tendo, Yamagata Prefecture, and TAD audio components are assembled in Kawagoe Plant of Pioneer Corporation, located in Kawagoe, Saitama Prefecture.

Certified artisans with exceptional expertise and skills hand-assemble compression drivers that require micron-level precision and other components into TAD speakers.

A certified artisan is responsible for an entire process of hand-assembling parts and circuit boards into TAD audio components on the production line, with attention paid down to such small details as controlling the amount of torque applied to screws fixing parts to circuit boards.

The same level of passion and dedication that engineers put into designing TAD products is shared by artisans who transform the engineering designs into masterpieces we market with pride around the world.



TAD Professional Speakers

TAD professional speakers have been used in a variety of demanding commercial applications, such as studio monitors and SR speakers, and the state-of-the-art TAD Cinema Speaker System has been installed in famed concert halls, movie theaters, and performing theaters. Since debuting in 1978, the uncompromising performance characteristics and reliability of TAD speakers have earned the trust of professional engineers and audio producers around the world.

Delivering the Performance and Quality that Satisfy the Most Demanding Professional Users.



Locations where TAD speakers were used

Academy (L.A.)
Ageha (Tokyo)
Avex (Tokyo)
Bay-FM (Japan)
BOP (South Africa)
Bulldog (Franklin)
Capitol Records (USA)
Chicken George (Japan)
Cinar Films (Montreal)
DADC Austria (Austria)
Dolphin Studio (Paris)

Electric Ladyland (NY)
FM-Tokyo (Tokyo)
J-WAVE (Tokyo)
Kawaguchiko Studi (Japan)
Larrabee Studios (L.A.)
Mosfilm (Moscow)
MOVIX Hashimoto (Japan)
MOVIX Saitama (Japan)
MOVIX Utsunomiya (Japan)
Music Inn Yamanakako (Japan)

NACK5 (Japan)
NHK (Tokyo)
NHK Hall (Tokyo)
Nomis Complex (London)
Onkio House (Tokyo)
Pixar Animation Studios (USA)
Polderweig (Amsterdam)
Record Plant (L.A.)
Roppongi Sedic (Tokyo)
Seoul (Seoul)

Silver Creek (Nashville)
Skywalker Sound (USA)
Stage & Studio AB (Sweden)
Studio Ghibli (Tokyo)
Studio Marcadi (Paris)
Tape One (London)
TBS (Tokyo)
Walt Disney Production (USA)
Yellow (Tokyo)
Yokohama FM (Japan)

TAD History

- 1937 Pioneer founder, Nozomu Matsumoto, develops the A-8 dynamic speaker.
- 1938 Fukuin Shokai Denki Seisakusho (precursor of Pioneer) established in Tokyo
- 1961 Fukuin Seisakusho changes trade name to Pioneer Electronic Corporation.
- 1975 The TAD Project launched to develop professional speakers.
- 1976 The SPEC15L horn driver, featuring the world's first beryllium diaphragm, released.
- 1978 The TD-2001 and TD-4001 drivers unveiled at AES.
- 1979 The first TAD-branded speaker units TD-1602, TD-4001, and TL-1601 released.
- 1981 The TM-1201 released.
- 1982 The TL-1601a released.
- 1983 The TSM-1 and TSM-2 released.
- 1990 The TM-1201H and the TL-1801 released.
- 1997 The TL-1601c, the TL-1102, and the TD-4003 released.
- 2003 The TAD-M1 with the CST Driver, the first TAD-branded speaker system for consumer use, released.
- 2007 Technical Audio Devices Laboratories, Inc. established.
The TAD-R1, the first Reference Series speaker system, released.
- 2009 The TAD-M600, the first Reference Series audio component, released.
The TAD-CR1 released.
- 2010 The TAD-M4300 and TAD-2500, the first Evolution Series audio components, released.
The TAD-D600 released.
- 2011 The TAD-E1, the first Evolution Series speaker system, released.
The TAD-C2000 and TAD-C600 released.
- 2012 The TAD-R1MK2 and TAD-CR1MK2 released.
- 2013 The TAD-D1000 and the TAD-DA1000 released.
- 2014 The TAD-CE1 released.
- 2015 The TAD-D1000MK2 and the TAD-M2500MK2 released.
- 2016 The TAD-ME1 released.
- 2018 The TAD-M1000 and the TAD-E1TX released.
- 2019 The TAD-R1TX, the TAD-M700, and the TAD-M700S released.
- 2020 The TAD-CR1TX released.
- 2021 The TAD-E2, the TAD-D1000TX, and the TAD-DA1000TX released.

40 Years of Being True to Intentions of Musicians

Pioneer has been in the audio business for more than 80 years since 1937, when it introduced the A-8, the industry's first dynamic speaker in Japan. Since debuting in 1978, TAD speakers, originally developed by Pioneer, have won the hearts and minds of thousands of top-rated musicians and sound engineers around the world and found themselves in famed recording studios, concert halls, and movie theaters. In 2007, TADL was spun off from Pioneer to extend the TAD brand's acclaim, engineering excellence, and design philosophy into the consumer market. Since its founding, TADL has been at the forefront of the high-end audio industry, bringing out one innovative audio product after another, all of which have been fascinating audiophiles and critics around the world.

The philosophy that the TAD brand has upheld for more than 40 years can be summed up as "genuine technology is true to the basics and that genuine technology places greater importance on sound quality than on technology for its own sake."

For years to come, we will continue to create high-end audio products that are true to intentions of musicians and that deliver a truly immersive, soul-stirring music-listening experience to proud owners.





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