

VSA-AX10Ai-S Multi-Channel Stereophonic Amplifier





A REFERENCE IN STUDIO-QUALITY SOUND PRECISION: PIONEER'S VSA-AX10Ai-S

The sonic evolution continues with the latest version of Pioneer's multi-channel stereophonic amplifier, the VSA-AX10Ai-S. For connoisseurs who desire the very best, this amplifier offers the ultimate high fidelity stereo and multi-channel music replay, together with reference-class decoding of the latest movie soundtrack and audio formats. Audiophiles will certainly recognise the original design philosophy of the VSA-AX10, a revolutionary best-in-class award winner from 2001 created by an experienced team of Pioneer audio amplifier designers and sound engineering experts from London's AIR Studios. Like its predecessors, the VSA-AX10Ai-S brings the best studio reference monitoring currently available directly to any home listening environment.

Audio aficionados will be drawn to the wealth of state-of-the-art internal components, AIR Studios sound tuning and THX Ultra2 certification. But the true beauty of the VSA-AX10Ai-S is Pioneer's unique MCACC, the world's first automatic sound field adjustment system for a multi-channel environment. The MCACC for the VSA-AX10Ai-S has been improved to 'Advanced' MCACC with a new 3-D calibration method. Advanced MCACC

takes room reverberation effects into account, ensuring even more precise calibration for perfect tonal balance in any listening room. Plus, of course, there's the i.LINK interface first introduced in 2002's VSA-AX10i-S model, delivering digital-to-digital, high resolution audio from DVD-Audio and SACD sources with stable signal transfer thanks to Pioneer's jitter-free PQLS (Precision Quartz Lock System). Truly up-to-the-minute, 2004's VSA-AX10Ai-S incorporates the latest surround formats such as Dolby Pro Logic IIx, as well as world-first Windows Media Audio 9 Professional compatibility. WMA9 Pro is the latest e-audio format, which assures ultimate multi-channel audio quality with up to 768 Kbps high transfer bit rate, as well as 96 kHz/24-bit resolution. With sufficient power delivery and transparency to preserve the enormous dynamic range and pure clarity of today's higher resolution digital recordings, the VSA-AX10Ai-S includes symmetrically positioned 7-channel A.D.E. MOSFET discrete power amplifiers, exclusive to Pioneer. With this amplifier in your home, you are certain to hear your favourite stereo and multi-channel recordings just like the professionals heard it at the mixing desk. Clearly, the Pioneer VSA-AX10Ai-S amplifier continues the home 'monitor reference' standard.





Why can't home listening be just like sitting at the recording engineer's mixing desk? This is the question that Pioneer's Advanced Multi-Channel Stereophonic Philosophy answers. Designed to reproduce music and film soundtracks as close to the original master recording as possible, this concept truly focuses on recreating the natural sound and spine-tingling passion of the original performance. To level up the sonic performance of your home system to that of a professional sound studio, Pioneer integrated three basic professional audio design principles in the VSA-AX10Ai-S development process. First of all, premium-quality sound requires the choicest parts, like state-of-the-art Burr-Brown D/A converters selectively chosen for Pioneer, twin SHARC Melody Ultra processors with Motorola 48-bit processing DSP, i.LINK for high-quality digital audio transmission, and an ideal construction with no compromises. Secondly, reproducing precisely accurate sound means calibrating to the acoustic environment, in order to create a studio-quality listening environment tailored to each living room. To achieve these precise sound field adjustments Pioneer created an easy-to-use automatic Advanced Multi-Channel Acoustic Calibration system, as well as fine manual settings thanks to specially designed audio signals. As a result of the new 3-D calibration method which considers room reverberation characteristics — proven from Pioneer research to have a major effect on precise tonal balance —, even more precise calibration is achieved for any room environment. Thirdly, the aim is to reproduce the art in sound. To do this, Pioneer partnered with the world's most experienced sound engineers from AIR Studios in London. Their expertise — along with meeting the demanding requirements of THX Ultra2 and reproduction of the latest surround formats — substantially contributed to the fact that this revolutionary multi-channel stereophonic amplifier can reproduce emotional and passionate sound precisely as the original artist intended. A concert at home has never been so spectacular.

ADVANCED MULTI-CHANNEL STEREOPHONIC PHILOSOPHY

PROFESSIONAL SOUND STUDIO



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CONVENTIONAL LIVING ROOM

Artistic Reproduction

Fine sound tuning by professional sound engineers

STEP 3

Professional Expertise

Sound tuning by AIR Studios, THX Ultra2 certification and reproduction of the latest surround formats

Precise Reproduction

Measurement and calibration for trim level, distance and frequency response

STEP 2

Precise Sound Reproduction

Pioneer's unique Advanced Multi-Channel Acoustic Calibration system

Quality Reproduction

High-quality equipment which meets requirements of professional engineers

STEP 1

Highest Quality Equipment

Best possible parts and materials available for home sound equipment

STEP 1

HIGHEST QUALITY EQUIPMENT

Based on a tri-concept philosophy combining ultra rigid construction, the best-in-class amplifier design and advanced digital processing, only the most select parts as well as cutting-edge Pioneer technology are found in the VSA-AX10Ai-S. Highly stable, solid-grade materials create the ultra rigid construction for the highest sound clarity. In addition, top-performance components like A.D.E. MOSFET are the secret to high-quality amplifier design. Finally, high-end advanced technology, like i.LINK, is responsible for high-quality digital audio transfers and advanced digital processing. It is clear that the VSA-AX10Ai-S was designed with a quest for pure sound perfection.

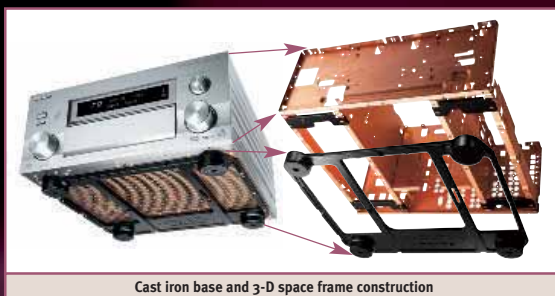
ULTRA RIGID CONSTRUCTION

INNOVATIVE FRAME DESIGN CONCEPT AND CONCENTRATED DIRECT CONSTRUCTION DESIGN FOR SUPERIOR SUPPORT

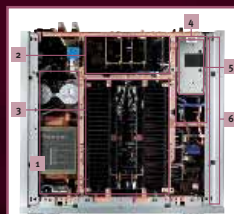
This revolutionary 3-D space frame construction reinforces the physical strength of the amplifiers. Unlike traditional 2-D chassis designs, each part is fixed to the frame from various angles, so the unit has the strength to support the heavy 10 kg transformer, without any distortion. The double-layered chassis ensures an extremely strong and rigid base for the 3-D frames. In addition, the chassis is copper-plated to suppress signal interference between circuits and reduce ground impedance. This 3-D space frame works simultaneously with the concentrated direct construction to further minimise signal interference as well as reduce the signal path. Each circuit is separated — allowing a more direct and extremely pure signal route — which results in an open and fresh sound.

STABLE CAST IRON BASE FOR ULTIMATE CHASSIS RIGIDITY

Combined with the 3-D space frame, the stable cast iron base realises heretofore unknown chassis rigidity. The heavy 4 kg cast iron base, made by TAOOC — known as the quality audiophile accessory brand —, overwhelmingly enhances the strength and stability of the chassis. And it serves to support and intercept external vibration thanks to its specially designed material — 10 times more anti-resonant than steel. The base contacts the frame at 15 points with the newly developed, patent-pending pivot-shape for crystal-clear and even deeper bass sound.



Cast iron base and 3-D space frame construction



3-D space frame with direct construction design:
1) Power supply 2) Video block
3) Amplifier 4) Audio block
5) i.LINK block
6) Digital block

UNWANTED VIBRATIONS REDUCED THANKS TO TRANSFORMER STABILISER

To offer even more stability and rigid support for the heavy 10 kg transformer, an extra 2.0 mm thick steel stabiliser is attached to the transformer frame. This carefully designed construction was implemented after thorough simulation by advanced CAD (Computer Aided Design) technology. The chassis is prevented from causing unwanted vibration during sound reproduction, ensuring maximum transparency of delicate audio signals.

HIGH-QUALITY AMPLIFIER DESIGN



AC/DC isolated amplifier module

7-CHANNEL ADVANCED DIRECT ENERGY MOSFET FOR SOLID HIGH PERFORMANCE AUDIO

Pioneer's exclusive Advanced Direct Energy (A.D.E.) MOSFET produces an amazingly efficient, high-end sound quality with an impressive 170 watts (DIN) of equally amplified power for each channel, to ensure consistent sound quality for multi-channel applications. This highly advanced circuitry is designed to offer high stability combined with low energy loss and ultra linear amplification. A new

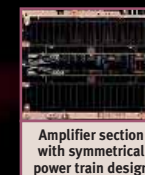
AC/DC isolated amplifier module — designed especially to optimise the A.D.E. MOSFET performance under any condition —, combined with the built-in temperature adjustment of the bias circuitry, regulates the drift of the bias point and minimises power imbalances that can cause distortion in the sound stage.

7-CHANNEL SYMMETRICAL POWER TRAIN DESIGN FOR PRECISE SOUND IMAGING

To balance electrical, physical and magnetic elements between the 7 channels for the most precise sound stage reproduction, Pioneer designed each power amplifier symmetrically on each side of the heat sink. This 'symmetrical power train' creates a uniform sound field for all channels.



Advanced Direct Energy MOSFET



Amplifier section with symmetrical power train design

CHIMNEY-SHAPED HEAT SINK FOR EFFICIENT HEAT DISSIPATION AND LOW RESONANCE

Since this amplifier incorporates 7-channel, high power units, it generates a huge amount of energy. The chimney-shaped heat sink acts as a natural cooling system, releasing excess heat from the power elements which could otherwise adversely affect operation. As no cooling fan is needed, there is less resonance compared to general cooling systems, and the sound remains transparent to the source input signal.



Chimney-shaped large heat sink

HIGH REGULATION POWER TRANSFORMER FOR STABLE POWER SUPPLY

Pioneer has developed a state-of-the-art large power transformer, weighing in at 10 kg, to guarantee a stable and superabundant power supply for each individual circuit. Designed for audio, this power supply avoids S/N ratio degradation caused by any internal energy loss and magnetic leakage, and reduces interference caused by vibration. Even at maximum volume, it delivers a constantly strong current with low impedance.



Large power supply transformer

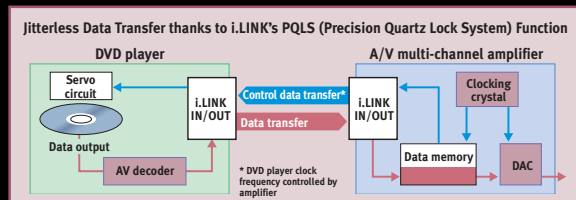
LARGE CAPACITORS FOR CLEAN AND STABLE POWER AT ALL TIMES

The VSA-AX10Ai-S uses two 33,000µF large capacitors, designed exclusively for audio, for extra stability and instant response to large power swings. The low loss thick copper bus-bar, attached to the capacitors, maximises the power transmission. The huge capacitors and bus-bar combined ensure clean and smooth power delivery at all times, even during sudden surges and continuous high volume demands.



Large electrolytic capacitors

ADVANCED PROCESSING IN THE DIGITAL DOMAIN



i.LINK (ADVANCED RESOLUTION DIGITAL AUDIO INTERFACE) AND PQLS FOR DIGITAL-TO-DIGITAL TRANSMISSION



Clearly high resolution sounds (multi-channel and 2-channel) from DVD-Audio and SACD have enhanced the realism of listening to music at home. But some of the fine details are lost in the digital-to-analogue conversion and subsequent analogue transfer from the player to the amplifier, where possibly an additional analogue-to-digital conversion is performed for extended digital signal processing. To preserve the finer details during digital signal processing, the VSA-AX10Ai-S features the i.LINK* Advanced Resolution Digital Audio Interface. i.LINK supports device-to-device digital audio data transfers of all major compressed and uncompressed formats including operational commands. This advanced digital audio interface uses only one digital cable instead of multiple analogue cables, in order to easily connect the VSA-AX10Ai-S with any i.LINK-equipped audio source component — for example a DVD-Audio/Video/SACD/CD player — to handle multi-channel DVD-Audio and SACD discs, not to mention digital audio from DVD-Video and CD. Pioneer's PQLS (Precision Quartz Lock System) enables the amplifier to conform the speed of the DVD player's signal transfer to its own clock speed. Hence, jitter resulting from the signal transmission is reduced to an absolute minimum**.



* The i.LINK interface is also known as IEEE1394 or FireWire. FireWire is a trademark. 'i.LINK' and the 'i.LINK' logo are trademarks.

** When connected to a source player (DVD player, CD/SACD player) with compatible feature such as PQLS.

ENHANCED SACD SOUND QUALITY

The VSA-AX10Ai-S uses a sampling frequency of 176.4 kHz/32-bit in order to make the conversion from 2-channel DSD to PCM. The resulting signal is virtually indistinguishable from the original. For multi-channel SACD, the sampling frequency is 88.2 kHz. SACD reproduction now also benefits from the new alternative SACD gain setting. The gain in the digital domain (for SACD) is increased by 6 dB, resulting in a higher dynamic range. Both of these features ensure that SACD source sound reproduction is as true to the original as possible.

NEW ULTRA DIGITAL CORE ENGINE FOR MORE POWERFUL SIGNAL PROCESSING

The VSA-AX10Ai-S uses twin 32-bit SHARC Melody Ultra floating-point processors and 48-bit processing Motorola DSP engines, such as those widely used in pro audio equipment. Pioneer engineers created the most advanced digital processing module, the Ultra Digital Core Engine, optimised for the DSPs. It features a short signal path thanks to the latest 6-layered circuitry board design and an exclusive processing algorithm. The Ultra Digital Core Engine processes the data with extreme precision, and delivers more powerful multi-channel sound decoding and processing than ever before. This engine can handle all the latest surround formats, and makes high-definition-quality 96 kHz/24-bit processing possible for Dolby Pro Logic IIx, THX and DTS Neo:6, for the first time in the industry.



192 kHz/24-BIT A/D CONVERTERS FOR PRECISION ANALOGUE SOURCE REPRODUCTION

Pioneer has mounted highly accurate 192 kHz/24-bit A/D converters on all eight channels individually to precisely reproduce DVD-Audio and SACD sound sources when using players with 6-channel analogue outputs. For two-channel analogue sources, four A/D converters are used for each channel for further precise conversion. This ensures truly superb 2-channel stereo reproduction. Of course, bypassing all A/D, DSP and subsequent D/A conversion by directly routing the analogue input to the power amplifier is equally possible.



HIGH-END 192 kHz/24-BIT D/A CONVERTERS FOR SOLID SOUND

Exclusive for Pioneer, specially selected top-of-the-line Burr-Brown 192 kHz/24-bit digital-to-analogue converters drive each of the eight channels independently. Sound is accurately reproduced, true to the original signal, with a remarkable signal-to-noise ratio. These are the best multi-bit type D/A converters for high resolution, strong and stable sound, with a perfect signal from input to output.



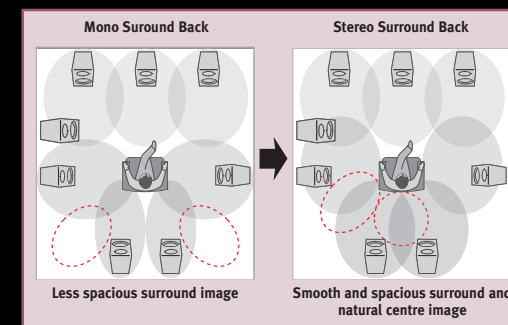
WINDOWS MEDIA™ AUDIO 9 PROFESSIONAL

It's no understatement that the VSA-AX10Ai-S is completely up-to-the-minute with the latest surround formats. This amplifier is the first in the world to incorporate a WMA9 Pro decoder, the first digital surround sound coding technology for the Web — developed by Microsoft. When connected to a multi-channel-equipped PC, you are able to enjoy high resolution stereo (96 kHz/24-bit) or 5.1-channel surround audio at 128 k – 768 Kbps compression rates. At any given bit rate, 5-channel WMA9 Pro will bring you higher fidelity than other sound compression algorithms thanks to the latest audio codec technology.



DOLBY PRO LOGIC IIx

Dolby Pro Logic IIx expands upon the popular Dolby Pro Logic II technology. With Dolby Pro Logic IIx, this amplifier has the ability to process 2- or 5-channel sources into 5.1-, 6.1- or 7.1-channel output according to the speaker configuration. Dolby Pro Logic IIx creates a highly immersive, natural sound field and gives added depth and dimension to music and movies. Use the Movie and Music modes to match the sound experience even more closely to the source. Three additional Music parameters are also available: Dolby Center Width (focuses the vocal balance to the centre and front), Dolby Panorama (creates a seamless surround effect) and Dolby Dimension (creates a deeper or shallower surround field).



STEP 2

PRECISE SOUND REPRODUCTION

Pioneer started a revolution with the world's first calibration technology for a home amplifier, the Multi-Channel Acoustic Calibration system (MCACC). Created by Pioneer experts in cooperation with AIR Studios professional sound engineers, Pioneer strived to bring professional studio-quality sound to the home environment. Now Pioneer introduces Advanced MCACC, for even more accurate sound calibration adjusted to your listening environment. What you get is fine-tuned audio personalised for your home — heard exactly the way the recording engineers intended.

ADVANCED MULTI-CHANNEL ACOUSTIC CALIBRATION SYSTEM



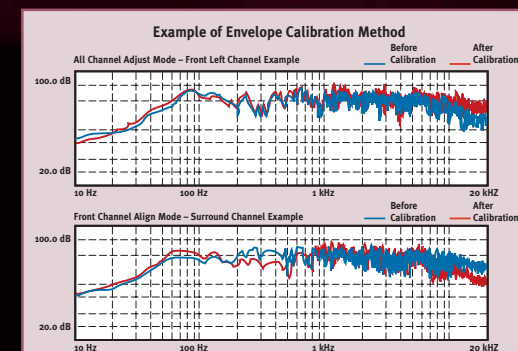
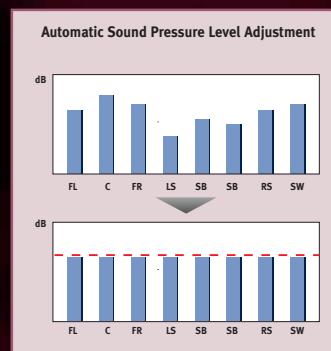
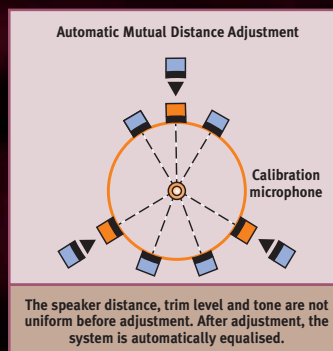
The Multi-Channel Acoustic Calibration system (MCACC) works just like a professional sound stage right in your living room. The beauty of this automatic sound field adjustment system is that you are able to automatically or manually precision-tune your home system to your living room just like a sound professional, but with minimum effort. Using a calibration microphone (included) that plugs into the amplifier, the MCACC system monitors your sound environment and measures the acoustics in the room. It then automatically adjusts various sound parameters on each channel to neutralise characteristics that tarnish the original sound. And the new Advanced MCACC with 3-D calibration method enables even more accurate tonal measurement and calibration, as it considers the effects of room reverberation. This tonal calibration technology is so far developed that it calibrates both direct and indirect sounds simultaneously. Advanced MCACC is the first technology to realise tonal calibration focused on direct sound, which leads to improved sound calibration.



AUTOMATIC SURROUND SET-UP

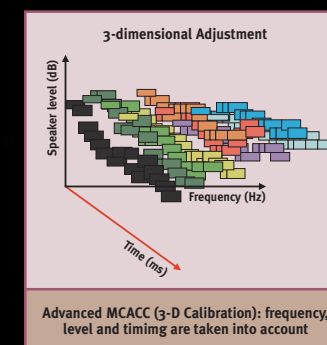
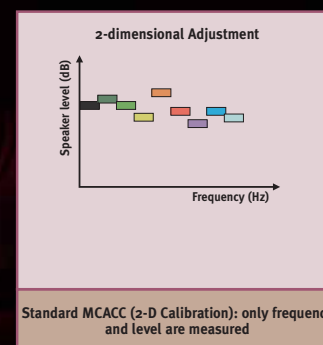
MCACC makes it easy to recreate the perfect listening environment. Hooked up with the (included) set-up microphone, the system automatically confirms speaker presence and speaker size. Next the amplifier emits a series of test tones which enables MCACC to automatically

adjust the distance (channel delay) between speakers relative to the listening position within 5 cm, channel level in 0.5 dB steps and frequency balance with Pioneer's exclusive 'Envelope Calibration Method'. This method enables moderate adjustments for frequency response, ignoring steep peaks and dips, and avoiding intensive phase shift which deteriorates the smooth sound stage between speakers. VSA-AX10Ai-S features a 9-band digital equaliser, which gives the best result with the 'Envelope Calibration Method', as confirmed from 5 years' research at the Pioneer R&D Centre. There are two modes for adjusting the frequency balance between speakers: 'All Channel Adjust' mode flattens the frequency response for all speakers and 'Front Channel Align' mode synchronises other speakers to the front speakers. Two 'Custom' user presets are available to memorise manual settings. With these professional level calibrations, MCACC produces a true three-dimensional sound field.



AUTOMATIC FREQUENCY RESPONSE ALIGNMENT WITH NEW 3-D CALIBRATION METHOD

Advanced MCACC features a newly developed, patent-pending 3-D Calibration method. This feature is the fruit of two years of Pioneer research, with practical field tests and analysis for actual room calibration data, since MCACC was first introduced. Advanced MCACC obtains even more precise measurements, as the 3-D Calibration method takes reverberation — the time factor or third axis — into account, as well as existing frequency and level readings at each band. The frequency response for an indirect signal differs from direct sound, caused by obstacles in the room or the room characteristics. The human brain analyses and confirms the sonic information much more on direct sound than indirect, i.e. the tonal balance, position for each sound image and sound field generated among speakers. The 3-D Calibration method calibrates the frequency balance mainly based on the direct sound,

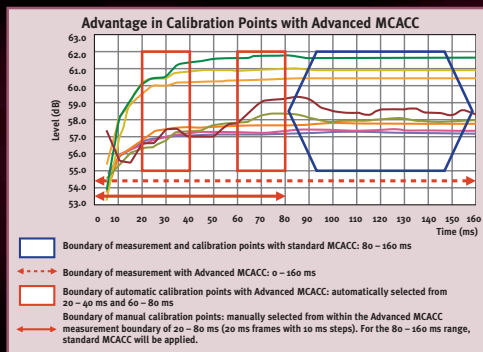
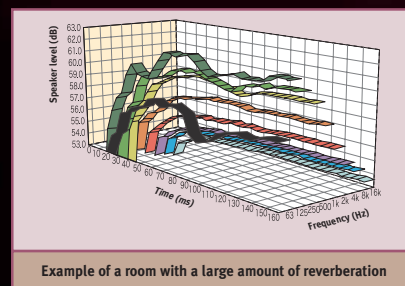
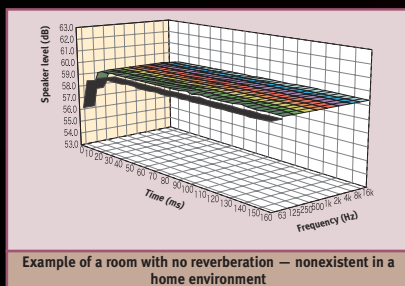


making it possible to achieve measurements even closer to the direct sound. The calibration timing is variable in 0 – 160 ms, whereas timing is fixed for the calibration technology used so far. The timing is automatically set by Pioneer's original algorithm or manually, if preferred.



You can see the reverberation characteristics either on-screen (OSD) in a simple 2-D image or even a 3-D colour graphic image on PC displays, by connecting a RS-232C cable (not included) to your PC, and downloading software

from the Pioneer website. This is a useful tool to visualise proper settings for your specific environment.



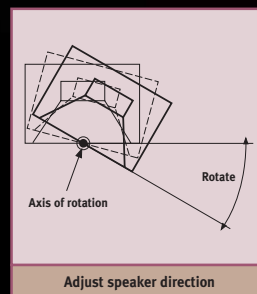
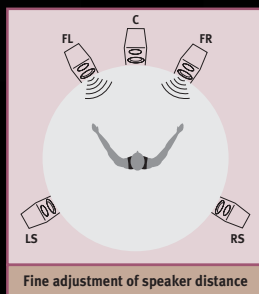
PRECISE SPEAKER SETTING ALIGNMENT



Reference Calibration Disc

The VSA-AX10Ai-S includes an additional tool, a Reference Calibration Disc (included with the amplifier), to calibrate the physical speaker positions even more precisely. This special DVD-Video disc contains two types of signals in DTS format: one for fine speaker distance adjustment and one for fine speaker angle adjustment. For fine speaker distance adjustment, the speakers' distance can be set with an accuracy of less than 1 cm by listening to the unique test tone, and then, taking the Front Left speaker as the reference speaker, moving the others speakers in turn so that the test tone

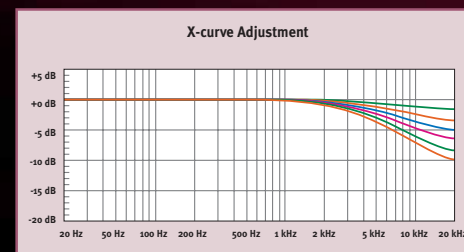
emanates from exactly in between them. For fine speaker angle adjustment, a voice moves around the listening position in 30° steps — like the arms of a clock —, so the speaker angle can be adjusted to the ideal direction envisioned by the sound designer (ITU-R speaker setting standard used for multi-channel music monitoring). These two adjustments work perfectly with MCACC for the best possible sound stage in a room.



'X-CURVE' ADJUSTMENT*: AUTOMATIC CORRECTION FOR ROOM SIZE

Advanced MCACC includes an additional automatic adjustment to ensure that the sound reproduction is even more perfectly matched to your room — the correction for room size. What the human ear/brain perceives as a flat frequency response is a subjective phenomenon dependent on distance between the listener and the sound source; our perception changes according to the size of the room. High frequencies decrease more for larger rooms due to the psycho-acoustic effect, according to scientific research. The VSA-AX10Ai-S automatically compensates for this difference by applying the famous 'X-Curve', according to room size. 'X-Curve' is widely used in acoustic designing for film theatres and dubbing stages. You will hear the sound as it should be heard.

* X-curve is authorised as an international standard, ISO 2969.



STEP 3

PROFESSIONAL EXPERTISE

The final step to high fidelity reproduction according to Pioneer's Advanced Multi-Channel Stereophonic Philosophy is reproducing the art in sound. Pioneer pulls it all together with professional expertise from two sources: a finely tuned product design with professional sound recording studio input from AIR Studios, and Pioneer experience and knowledge regarding surround sound formats and technology. You can be sure that this THX Ultra2-certified amplifier is packed with the latest sound format technology including Dolby Pro Logic IIx, DTS 96/24 as well as THX Surround EX, Dolby Digital EX, DTS ES and DTS NEO:6, delivering sound with the same passion and emotion as the original artist intended.

AIR STUDIOS SOUND TUNING



AIR STUDIOS

Some of the most talented sound engineers from one of the world's leading recording studios, AIR Studios in London, contributed an unquestionable amount of expertise to this revolutionary multi-channel stereophonic amplifier, to replicate a professional sound studio at your home. AIR Studios was founded by Sir George Martin, the legendary Beatles producer and an Academy Award®-nominated composer. Established in 1969, AIR Studios is now a state-of-the-art recording complex with matchless facilities for film scoring, rock, pop, classical and orchestral work, post-production and live events. Many popular and renowned musical talents, like Madonna, Paul McCartney, Elton John, Robbie Williams, Oasis and Coldplay have worked in this unique and inspirational recording environment. It has also served as the soundstage for movies such as *Harry Potter*, *Fantasia*, *Star Wars: Shadow of the Empire*, *Lord of the Rings* and David Arnold's scores for contemporary James Bond blockbusters.



AIR Studios control room

DTS 96/24 DECODING



Heir to the VSA-AX10's world-first 96 kHz/24-bit decoder, the VSA-AX10Ai-S reproduces high-quality sound, exactly as recorded on 96 kHz, 24-bit master tapes in the studio. The latest audio format by DTS — the multi-platform DTS 96/24 — was the first compressed surround format technology to support 96 kHz and 24-bit sound resolution and multi-channel capabilities. With its super low audio compression rate, all your discs with DTS-encoded audio soundtracks will sound rich and sophisticated. Backwards compatible with existing DTS decoders, you'll also be able to enjoy traditional DTS discs.

DTS ES DECODING



DTS Extended Surround Discrete 6.1 is a true 6.1-channel format where an additional Surround Back audio channel is discretely encoded into the DTS bit stream offering enhanced spatialisation over the surround channels for complete 360-degree sound localisation and surround panoramas. The VSA-AX10Ai-S features a DTS ES decoder that will allow you to play back discrete 6.1-channel content from DVDs. You will also welcome full compatibility with any DTS ES or 5.1-channel recording.

DTS ES Matrix 6.1 is where the additional Surround Back audio channel is 'matrixed' into the rear left and right surround channels in the DTS data stream. The DTS ES decoder then extracts the Surround Back channel that is placed behind you and puts you right in the middle of the action.

THX ULTRA2 PROCESSING AND CERTIFICATION



THX Ultra2 means enjoying exciting eight-channel playback performances from any multi-channel programme over the widest possible seating area. Pioneer was the first to introduce THX Ultra2 certification with the original masterpiece, VSA-AX10. With THX Ultra2 certification, the VSA-AX10Ai-S has set the pace for the next generation. Whereas original THX Ultra was intended for Dolby Pro Logic sources, THX Ultra2 is entirely adapted to recent high-quality digital formats such as DTS and Dolby Digital. A true breakthrough in home entertainment technology, THX Ultra2 ensures optimal multi-channel music and film enjoyment. In addition to THX Cinema and THX Surround EX, THX Ultra2 technology includes two new modes featuring THX exclusive technology, ASA (Advanced Speaker Array). THX Ultra2 Cinema allows non-Surround EX-encoded, Dolby Digital 5.1 and DTS 5.1 material to be played on a seven-speaker configuration. For music playback, THX Music Mode can handle all types of music formats, including high resolution DVD-Audio and SACD multi-channel music recordings.

THX SURROUND EX/DOLBY DIGITAL EX



THX Surround EX/Dolby Digital EX is a joint development of Dolby Laboratories and THX. EX technology creates an extra 'Surround Back' channel, which may have been added when the programme was mixed. By decoding the surround back channel from the left and right surround channels of 5.1 soundtracks, this additional surround back channel allows more detailed imaging behind the listener and brings more depth and better sound localisation than ever before, to give you the feel of 6.1 channels. THX Surround EX/Dolby Digital EX is compatible with existing Dolby Digital 5.1 so that a Dolby Digital decoder can decode signals of Surround EX as normal 5.1 signals.

DTS NEO:6

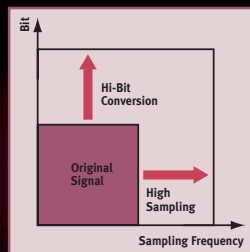


DTS NEO:6 modes apply conventional 2-channel signals to the high-precision digital matrix decoder and achieves 6.1-channel surround playback. High-precision input signal detection and matrix processing enable a full band reproduction for all 6.1 channels. It also improves the separation between the different channels to almost the same level as that of a digital discrete system. DTS NEO:6 Cinema Mode decodes with an emphasis on separation performance to achieve the same atmosphere with 2-channel sources recorded in conventional surround formats as it does with 6.1-channel sources. The original 2-channel signal is distributed into 6 channels thanks to the sophisticated DTS matrix decoding technology. Meanwhile, the effect of the surround signal output from the centre and surround channels adds a natural sense of expansion to the sound field. In DTS NEO:6 Music Mode the front channel signals bypass the decoder and are played directly, so accurate music reproduction is achieved.

MORE EXCITING FEATURES

AUDIO SCALER

Pioneer's 'Audio Scaler' technology improves the sound quality of both stereo and multi-channel sources (such as CD, MD, DVD) to a level approaching that of DVD-Audio. Hi-Bit conversion first expands the bit length of the linear PCM signal to 24 bits. The result is more detailed sound with less deterioration, closer to the original signal. At the same time, Pioneer's high-sampling digital filter technology enlarges the frequency bandwidth, restoring a sense of the high frequencies which were present in the original recording. The final result is a more relaxed, musical sound quality.



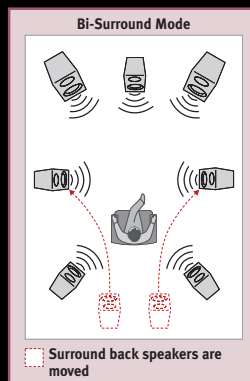
VERSATILE SPEAKER CONFIGURATIONS

1. Bi-Amp mode

In Bi-Amp mode, the VSA-AX10Ai-S allows you to use a separate amplifier for the high frequency driver and the low frequency driver of your front pair of speakers, for better crossover performance. Your speakers must be bi-ampable to do this — equipped with separate terminals for high and low. In Bi-Amp mode, both the front and the surround back speaker terminals of the VSA-AX10Ai-S will be used to drive the front speakers.

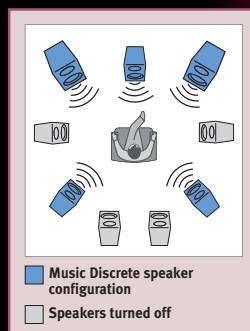
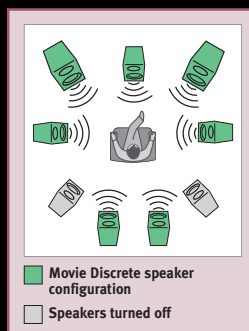
2. Bi-Surround mode

Rectangle-shaped rooms pose a particular audio challenge, as the audio must cover a much longer area from front to back. Bi-Surround mode addresses this problem. Two sets of surround speakers are driven by different amplifiers; two of these are switched from surround back amplifiers. So the sound envelops the whole area of the room in dramatic surround sound.



3. Music/Movie Discrete speaker configuration ready

The latest multi-channel music recordings require a ITU-R standard speaker setting for monitoring, whereas movie soundtracks are monitored with a diffused speaker setting. For the ultimate performance of both movies and music, the Music/Movie Discrete speaker configuration feature is an extremely convenient solution enabling you to switch between movie speaker setting and music speaker setting just by selecting THX Music mode / THX Cinema mode as needed. Now there's no need to reposition and reconnect speakers each time you want to enjoy multi-channel sound from either movie or DVD-Audio/SACD sources in their purest forms.



MULTI-CHANNEL USB TERMINAL FOR PURE PC AUDIO PLAYBACK

Many people enjoy listening to music on their PC, but without proper (outboard) amplification, it is hard to do justice to the sound quality of PC audio sources. Thanks to this unique USB terminal, you can amplify 2-channel audio as well as multi-channel audio from your PC, creating an overwhelming sound experience compared to what is usually achieved through typical PC audio systems.

REAL PHANTOM MODE

For people who don't want to set a centre speaker in their room, this mode generates a distinct centre sound image by adopting the latest HRTF (Head Related Transfer Function). The resulting sound is extremely close to that of when a centre speaker is used.

SLEEK-DESIGNED LARGE TOUCH PANEL REMOTE CONTROL

VSA-AX10Ai-S comes with newly designed touch panel remote control. This remote control is exceptionally thin on account of the special built-in rechargeable battery. Thanks to a large LCD touch panel and a wide variety of preset codes with learning capability, the operation is simpler and smoother than ever before.



Large touch panel remote control



Close-up of touch panel

EXPERT PRAISE

Since their launch, the VSA-AX10 and VSA-AX10i-S — precursors to the VSA-AX10Ai-S — have established themselves as clear favourites with industry trendsetters. They have won numerous prestigious awards, and received sensational press reviews and accolades from experts all over the world. These audio masterpieces are considered to be the finest amplifiers in their class. Here's a sampling of the overwhelming response from audio experts regarding the VSA-AX10i-S.

HOME CINEMA CHOICE, MAY 2002

'Best Buy guarantee'

ESSENTIAL HOME CINEMA MAGAZINE, SEPTEMBER 2003

Award winner 'Best AV amplifier over £1,000'

'With a list of features long enough to fill a small book and the latest and greatest processing options, it delivers fresh technology with style'

'The VSA-AX10i represents the top of the amplifier evolutionary chain; with its i.LINK feature and THX Ultra2 certification, the flag's at the top the mast'

'The VSA-AX10i has established itself as the leading amp in its category,...'

WHAT HI-FI? SOUND & VISION, 2003 AWARDS EDITION

Award winner 'Best Buy over £2,000'

WHAT VIDEO AND WIDESCREEN TV MAGAZINE, DECEMBER 2003

Award winner 'Best high-end amplifier'

'The phrase "state of the art" is bandied around too much, but the VSA-AX10i is so far ahead of the game that it truly deserves the accolade'

OTHER FEATURES

- Universal video converter for easy and better signal transfer
- Wide-range video circuitry for high-quality signal processing for HD sources
- Pioneer exclusive Advanced Cinema DSP mode for more realistic movie experience & Pioneer exclusive Advanced Concert DSP mode for more realistic music experience
- Wide-range technology for reproducing the ultimate DVD-Audio and SACD high resolution sources
- Precision Gain Management Volume for high-end S/N ratio of 115 dB
- High-quality audiophile speaker terminals for stable and precise signal transfer
- RF demodulator and phono input for versatile connectivity
- Discrete local power regulator for clean sound
- Ultra-low noise, shot-key type diode for minimised energy loss
- Direct current bus-bar for high current power supply to A.D.E. MOSFET
- Double thick copper-plated print board and lead-free design for transparent sound
- Pre-out and power-In terminals for system expansion
- OFC AC cable for stable power transfer
- Sound delay (up to 6 frames in 0.1 frame steps) for perfect Audio/Video synchronisation



VSA-AX10Ai-S REAR PANEL, FEATURES AND SPECIFICATIONS



VSA-AX10Ai-S Rear Panel Connections



VSA-AX10Ai-S Open Front Panel

FEATURES	VSA-AX10Ai-S	JAZZ	•	Bass/Treble Tone Controls	+/- 6 dB (100 Hz/10 kHz)	SPECIFICATIONS	VSA-AX10Ai-S
POWER OUTPUT		ROCK	•	Loudness	•	AMPLIFIER SECTION	
Stereo (DIN)	170 W + 170 W (1 kHz, 1 % THD, 6 Ω)	DANCE	•	VIDEO FEATURES		Rated Power Output	150 W + 150 W (20 – 20,000 Hz, 0.09 % THD, 6 Ω)
Surround (DIN) Front	170 W + 170 W (1 kHz, 1 % THD, 6 Ω)	5/6/7-CH STEREO	•	Video Signal Selector	•	Surround (DIN)	
Centre	170 W (1 kHz, 1 % THD, 6 Ω)	CONSTRUCTION	•	Video Converter	•	Front Channels	170 W + 170 W (1 kHz, 1 % THD, 6 Ω)
Rear (Surround)	170 W + 170 W (1 kHz, 1 % THD, 6 Ω)	3-D Space Frame Construction	•	CONVENIENCES		Centre Channel	170 W (1 kHz, 1 % THD, 6 Ω)
Surround Back	170 W + 170 W (1 kHz, 1 % THD, 6 Ω)	Copper-plated Chassis	•	On-Screen Display (GUI)	• (Including Component)	Rear Channels	170 W + 170 W (1 kHz, 1 % THD, 6 Ω)
SURROUND FORMAT		Direct Construction	• (Advanced)	Remote Control	•	Surround Back Channels	170 W + 170 W (1 kHz, 1 % THD, 6 Ω)
Dolby Digital	•	Double-layered Chassis	•	Multi-Operation System (Macro)	•	Input (Sensitivity/Impedance)	
Dolby Digital EX/THX Surround EX	•	Transformer Stabiliser	•	Remote Control Illumination	LCD Backlight	PHONO (MM)	4.7 mV/47 kΩ
DTS	•	TAOC Stable Cast Iron Base	•	DVD Control	•	Line (DVD, CD, etc.)	382 mV/47 kΩ
DTS ES Discrete 6.1	•	AMPLIFIER DESIGN	•	Satellite Tuner Control	•	Frequency Response	
DTS ES Matrix 6.1	•	Accurate Imaging System	•	CD Magazine Control	•	PHONO (MM)	20 – 20,000 Hz +/- 0.3 dB
DTS Neo:6 Cinema	•	Large Electrolytic Capacitors	33,000 µF x 2	Digital TV Set-top Box Control	•	Line (DVD, CD, etc.)	5 – 100,000 Hz +0 dB, -3 dB
DTS Neo:6 Music	•	Thick Copper Bus-Bar	•	Rechargeable	• (charger station incl.)	Signal-to-Noise Ratio (DIN; continuous rated power output/50 mW)	
DTS 96/24	•	Power Amplifier Design	• (A.D.E. MOSFET)	Function Rename	•	PHONO (MM)	70/68 dB
Dolby Pro Logic	• (Dolby Pro Logic IIx)	Symmetrical Power Train Design	•	FL Dimmer	4 steps	Line (DVD, CD, etc.)	93/73 dB
Dolby Pro Logic II Movie	•	Front L & R Bi-Amplifier Function	•	Sound Delay	6 frame/0.1 frame step	Signal-to-Noise Ratio (IHF)	
Dolby Pro Logic IIx Music	•	ADVANCED MULTI-CHANNEL ACOUSTIC CALIBRATION SYSTEM (MCACC)		TERMINALS		PHONO (MM)	86 dB
Dolby Pro Logic IIx Music	•	MCACC	• (Advanced)	i.LINK (Advanced Resolution Digital Audio Interface)	2	Line (DVD, CD, etc.)	105 dB
Windows Media Audio 9 Professional	•	Set-up Microphone	•	USB	• (Multi-channel)	VIDEO SECTION	
THX	• (Ultra2)	Speaker System Detection	•	Custom Installer Ready (RS-232C)	•	Input (Sensitivity/Impedance)	1 V p-p/75 Ω
THX Cinema	•	Auto Surround Set-Up Trim	•	12 V Trigger Terminal	2	COMPONENT VIDEO	
THX Ultra2 Cinema	•	Auto Surround Set-Up Delay	•	Multi-channel Input	• (7.1 ch)	Frequency Response (HDTV compatible)	5 Hz – 100 MHz +0 dB, -3 dB
THX MusicMode	•	Acoustic Calibration EQ	g-band (Auto/Manual)	RF Input for Dolby Digital (Demodulator)	•	MISCELLANEOUS	
PIONEER ORIGINAL SURROUND MODE		3-D Calibration Method	•	Digital Audio Input	7 (assignable)	Power Requirements	AC 220 – 230 V
Advanced Cinema	•	Compensation Adjustment (X-curve)	•	Coaxial	3	Power Consumption	50/60 Hz
ACTION	•	Reference Calibration Disc	•	Optical	4 (includes Front in)	Power Consumption in Standby Mode	0.65 W
MUSICAL	•	AUDIO FEATURES	•	Digital Audio Output (Optical)	2	Dimensions (W x H x D)	440 x 210 x 476 mm
DRAMA	•	AIR Studios Sound Tuning	•	Audio/Video Input	5A/7AV	Weight	34 kg
SCI-FI	•	DSP (Digital Signal Processor)	SHARC Melody Ultra 32-bit Floating- point x 2, Motorola 24-bit double precision equivalent to 48-bit	Audio/Video Output	2A/3AV + 1V		
MONOFILM	•	D/A Converter	• (192 kHz/24-bit)	Phono Input	•		
5-D/7-D THEATER	•	A/D Converter	• (192 kHz/24-bit, all channel)	S-Video Input/Output	7/5 (includes Front in)		
Advanced Concert	•	Flexible A/D Converter System	•	Component Input/Output	3/1 (assignable)		
CLASSICAL	•	Audio Scaler (Hi-bit/Hi-sampling)	•	Preamp Output	• All (7.1 ch)		
CHAMBER	•	Precision Gain Management (PGM) Volume Control	•	Power Amp Input	FL/FR		
		Analogue Downmixing for Centre Channel	•	A/V Input on Front	•		
		DNR (Digital Noise Reduction)	•	SR (System Remote) Terminal	• (In/Out)		
		Midnight Listening Mode	•	Speaker A/B	Versatile Speaker Configuration		
		Stream Direct	•	Speaker Terminals	All large high-quality gold-plated solid type		

PIONEER WORLD

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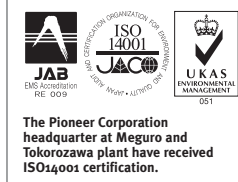
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