ADAM
PROFESSIONAL AUDIO

STUDIO MONITORS

Catalog 04/2011

English

Professional Audio

Home Audio

Multimedia

Radio Canada Studio 12 | Montreal, Quebec, Canada
Photo: crilaphoto.com

ADAM
PROFESSIONAL AUDIO

Contents

Near-/Midfield Monitors

AX-Series

A History of Excellence: SX-Series

ADAM introduced a new top line of studio monitors, the SX-Series, at the Prolight & Sound (Frankfurt, Germany) and at the AES (New York, USA) in 2009. One year later, ADAM Audio proudly presented a similar evolution with the A series, called the AX series. The new A5X and A7X (successors of the acclaimed A5 and A7) were joined by two more models, the A3X and A8X. All models of the new AX-Series profited from the technological improvements found in ADAM's top line monitors.

The AX-Series

The changes made to the A5X and the A7X are not simply developments but a fundamental revision of the A-Series. ADAM Audio took all aspects of the original A-Series and redesigned and improved them.

One of the main improvements of the top line monitors SX-Series, the X-ART tweeter, now replaces the ART tweeter in the new AX versions. The X-ART tweeter features an even higher efficiency and maximum sound pressure level as well as a frequency response up to 50kHz. All woofers and amplifiers have also been re-engineered from scratch, featuring larger voice-coils and amps with twice the power for higher linear excursions and more output. Last but not least, the cabinets have been redesigned, all models now sport two bass reflex ports.

Finally, two additional models complement the AX-Series. The A3X is now ADAMs smallest monitor ever, and the larger A8X opens the door to midfield monitoring and is the top of the AX line.

The Brand New Model: A77X

ADAMs top line of studio monitors, the SX-Series, offers various speakers as horizontal versions. These models can be of advantage in specific set-ups, for instance on studio consoles. With the all new A77X, ADAM expands the AX line of monitors and offers a horizontally designed speaker at a lower price point. This speaker combines all the advanced drivers and amplifiers of the whole AX-Series with more power and is perfectly suited for both near- and midfield monitoring.

Nearfield Monitor A3X

The smallest big sound ever...

With the A3X, ADAM Audio present their smallest monitor to date, making it perfectly suited for all environments where space is limited but sound shouldn't be constricted. The A3X combines a tiny footprint with the much acclaimed ADAM sound quality by using the X-ART tweeter for the higher frequencies, a guarantee for crystal clear music reproduction.

A 4.5" (basket) driver handles the lower registers. The diaphragm is made from carbon fiber, a material that is very light but very stiff and therefore capable of delivering colouring-free sound. Two built-in 25 Watt amplifiers power each of the drivers directly.

Controls and Connectors

The front of the A3X sports dual ports for surprisingly low frequency response down to 60Hz. The front panel also has power and gain controls. The rear panel includes a tweeter gain control as well as balanced (XLR) jacks and unbalanced (RCA) jacks, allowing for greater connection flexibility.

Two M6 (6 mm) metric screw threads can be found on the rear side for stand/wall mounting.

Stereolink

A very handy and exclusive technology found in the two smaller AX monitors is the Stereolink. This is accomplished by a pair of additional RCA connections that allow for a bypass of the second stereo channel to the other speaker.

This new technology connects two A3X speakers in such a manner as to allow the user the option to control the overall stereo volume of the system from either speaker's gain control. This makes the A3X a natural for "mixer-less" desktop applications where overall system volume needs to be adjusted easily.

Basic technical data at a glance

- X-ART tweeter
- 4.5" carbon fiber midwoofer
- 2 x 25W amplification
- on-/off-switch and volume gain on the front panel
- Stereolink
- tweeter gain on the rear panel
- 60Hz - 50kHz
- XLR & RCA connectors
- 106dB max peak SPL per pair
- 5 year warranty

Nearfield Monitor A5X

The original A5

The small A5 managed to make itself a big name in both professional environments as well as in computer or desktop applications. A wealth of truly outstanding reviews and many awards helped to establish this speaker as one “of the best small monitors” and a “great choice for the small studio.” (*Future Music*, 01/2009).

The new A5X

The similar dimensions and name could make one believe that the A5X is nothing more than a new version of the A5, yet a quick listening however leaves no doubt that the A5X is much more than that.

Like all other models of the AX-Series it features the proprietary X-ART tweeter. The very data (see page 36 f.) of this technology shows that it is at the forefront of what tweeters can accomplish. Numerous listening tests have confirmed this.

A 5.5” Midwoofer reproduces the frequencies below 2.5kHz. The diaphragm is made from Carbon fiber/Rohacell/Glass fiber, which is the same composite structure shared in the next two bigger models. This material with minimum weight and maximum rigidity prevents break up resonances, resulting in an outstanding dynamic behaviour and impeccable sound characteristics.

Two M6 (6 mm) metric screw threads can be found on the rear side for stand/wall mounting.

Stereolink

A very handy and exclusive feature found in the two smaller AX monitors is the Stereolink. This is accomplished by a pair of additional RCA connections that allow for a bypass of the second stereo channel to the other speaker.

This new technology connects two A5X speakers in such a manner as to allow the user the option to control the overall stereo volume of the system from either speakers gain control. This makes the A5X a natural for “mixer-less” desktop applications where overall system volume needs to be adjusted easily.

Basic technical data at a glance

- X-ART tweeter
- 5.5” carbon/rohacell/glass fiber-midwoofer
- 2 x 50W amplification
- on-/off-switch and volume gain on the front panel
- Stereolink
- tweeter gain and 2 shelf filters on the rear panel
- 50Hz - 50kHz
- XLR & RCA connectors
- 110dB max peak SPL per pair
- 5 year warranty

Nearfield Monitor A7X

ADAMs A7 & A7X: the evolution of a legend

The predecessor to the A7X, the A7, became the most famous of all ADAM monitors in a very short time. Not only had it been reviewed over three dozen times with outstanding results, it also received numerous awards. The A7 quickly gained mass appeal, praised in many of the world's largest internet forums. Still today, the A7 are the reference monitors in many smaller studios.

With the A7X, ADAM Audio proudly presents the evolution of a legend. It takes everything that made the A7 such an outstanding speaker to a whole new level.

Driver technology

The first aspect that distiguishes the old from the new model is the X-ART tweeter. The 'X' stands for 'eXtended frequency response' and thus for one of the features of the *Accelerating Ribbon Technology* that has been drastically improved: the frequency response. It now extends all the way up to 50kHz. In addition, the X-ART tweeter has a higher efficiency and higher maximum sound pressure levels.

The perfect integration with the lower frequencies has been achieved with a newly designed 7" midwoofer. It has been redesigned with a much bigger voice coil (1.5") and is driven by an amplifier with twice the power compared to its predecessor. This combination produces amazing sound and pressure levels offering a distortion-free musical reproduction.

Amplifiers / controls

Each driver has its own dedicated amplifier. A 50W A/B amp is responsible for the X-ART tweeter, while the midwoofer is being driven by a 100W PWM (see p. 38) amp. The front panel includes a power switch and a control for the volume that retains the volume setting independently from the on/off switch.

On the rear panel are several additional controls: a gain for the high frequencies (± 4dB) and two shelf filters for high and low frequencies. To ensure greater compatibility, there are both XLR (balanced) and RCA (unbalanced) connectors.

Basic technical data at a glance

- X-ART tweeter
- 7" carbon/rohacell/glass fiber-midwoofer
- 50W/100W amplification
- on-/off-switch and volume gain on the front panel
- tweeter gain and 2 shelf filters on the rear panel
- 42Hz - 50kHz
- XLR & RCA connectors
- 114 dB max peak SPL per pair
- 5 years warranty

Awards

Beat 10/10 EMPFEHLUNG der Redaktion

stereoplay Highlight Ausgabe 08/10

Near-/Midfield Monitor A8X

The most powerful AX monitor

With its power and radiation characteristics, the brand new A8X is suitable for both nearfield and midfield monitoring. With a price/performance ratio that could hardly be better, this monitor is a perfect entry into these monitoring fields.

The A8X is equipped with the X-ART tweeter and a large (8.5") midwoofer, a combination that adds both a very deep and yet very tight bass response to the unsurpassed reproduction qualities of the ADAM proprietary tweeter: a licence to thrill.

Cabinet- and bass reflex-construction

Like the other AX-Series models, the upper corners of the A8X are slanted to minimize reflections. The very large, double bass reflex tubes on the front have been specifically designed to perfectly match the midwoofer with its large voice coil.

Amplification and controls

With a 50W amplifier for the tweeter and a 150W amplifier for the midwoofer, the A8X has power in abundance and is the brawny monitor of the AX-Series.

On the rear panel are several controls: a gain for the high frequencies (± 4dB) and two shelf filters for the high and low frequencies.
There are both XLR (balanced) and RCA (unbalanced) connectors on the rear panel of the speaker, which allow the A8X to be used in almost any application.

Basic technical data at a glance

- X-ART tweeter
- 8.5" carbon/rohacell/glass fiber-midwoofer
- 50W/150W amplification
- on-/off-switch and volume gain on the front panel
- tweeter gain and 2 shelf filters on the rear panel
- 38Hz - 50kHz
- XLR & RCA connectors
- 120dB max peak SPL per pair
- 5 years warranty

Near-/Midfield Monitor A77X

A revolutionary formula: 2 x 7 = 77

In some set-ups it can be advisable to use a horizontally designed speaker rather than a vertical one. Until now, such monitors were only available within the SX top line.

The brand new A77X, due to its outstanding features, might become a true game changer: Equipped with the same advanced technologies as the A7X, it therefore is very similar to the two-way speaker. The A77X, however, distinguishes itself by much higher, compression-free maximum sound pressure levels and dynamics. Due to its power and radiation characteristics, it also is perfectly suited for both near- and midfield monitoring.

Driver technology

Like all models of the AX, the A77X features the ADAM proprietary X-ART tweeter. The 'X' stands for 'eXtended frequency response' and thus for one of the features of the *Accelerating Ribbon Technology* that has been drastically improved: the frequency response. It now extends all the way up to 50kHz. In addition, the X-ART tweeter has higher efficiency and higher maximum sound pressure levels.

The two 7" woofers are identical with that of the A7X. With their large voice coils (1.5") and powerful amplifiers they are capable of both very high maximum sound pressure levels as well as very deep registers. The woofers do not cover the same frequency bands: while one of them is responsible for the (sub-) bass frequencies up to about 400Hz, the other takes over most of the midrange.

Amplifiers / controls

Each driver has its own dedicated amplifier. A 35W A/B amp is responsible for the X-ART tweeter, while the bass-/midwoofers are driven by a 100W PWM (see p. 38) amp each. The front panel includes a power switch and a control for the volume that retains the volume setting independently from the on/off switch.

The rear panel features several additional controls: a gain for the high frequencies (± 4dB) and two shelf filters for high and low frequencies. To ensure greater compatibility, there are both XLR (balanced) and RCA (unbalanced) connectors.

Basic technical data at a glance

- X-ART tweeter
- 2 x 7" carbon/rohacell/glass fiber-midwoofer
- 50W/2 x 100W amplification
- on-/off-switch and volume gain on the front panel
- tweeter gain and 2 shelf filters on the rear panel
- 38Hz - 50kHz
- XLR & RCA connectors
- 122 dB max peak SPL per pair
- 5 years warranty

New

The AX Series Reviewed

A3X

"**Highly recommended**."
(Jon Chappell, *Harmony Central*, 03/2010).

"...is one of the **best c ompact monitors**..." (*Professional audio*, 05/2010)

"...the ADAM A3X is an **excellent new option**." (Steve Silversten, *Tape Op* No. 79, 2010)

"...a **great addition** to any small home-studio/post-production setup in need of a high-end sound." (Rich Tozzoli, *Pro Audio Review*, 10/2010).

"... the ADAM A3X is without a doubt **the best compact speaker** in this price range." (*Audiofanzine*, 01/2011)

A5X

"On our desktop the A5X left a **superb impression**. In comparison, no other desktop monitor got close to that." (*Stereo*, 10/2010).

"The A5X makes **mighty** pressure..." (*Videoaktiv Digital*, 01/11).

"Lively, agile dektop monitor with an open, powerful character. ...the **ideal playfellow**..." (*HiFi Digital*, 01/11).

A7X

"Unbelievable but true: seven testers from different backgrounds have each come to the same conclusion: The **review winner** is the ADAM A7X!" (*tools4music*, 6/2010)

"... a **substantial improvement**. ...I expect the ADAM A7X to dominate the conversation for a long time to come. " (Barney Jameson, *DV Magazine*, 05/2010)

"We could observe **improvements** in all respects. ...bravo!" (*amazona.de*, 06/2010)

"... sounded **noticeably better** in every respect." (Paul White, *Sound On Sound*, 08/2010)

"...extremely lively and 'shareful' sound with the **finest high frequency resolution**." Wolfram Eifert, *stereoplay*, 08/2010)

A8X

"...the A8X will **seduce the masses** effortlessly!" (*Audiofanzine*, 09/2010)

"The A8X speakers from ADAM Audio brought themselves **at the forefront** of all speakers reviewed..." (*Audio Test*, 02/2011)

"...becoming a **huge recommendation** for the discerned listener without a bulging wallet." (*Professional audio*, 10/2010)

For more reviews in several languages and more general information, please go to:
www.adam-audio.com

Near-/Midfield Monitors

SX-Series

The Making of a Leader: S-Series

ADAM Audio's famous S-Series models are reference monitors in many of the most prestigious sound studios around the globe. In only a few years they have become some of the most sought after professional tools at recording facilities. The S-Series combines all of ADAM's innovative speaker technologies with the best materials available today.

The New Models: SX-Series

The new SX-Series is based on the S-Series. However, it is not a simple revision of existing models but a fundamental transformation. No details have been overlooked and every sound-crucial aspect has been evaluated. All transducers, drivers and electronics have been redesigned. The result is much more than an improvement, it is a quantum leap in professional monitoring.

All models of the SX-Series are equipped with the new X-ART tweeter (see p. 36 f.). Its fundamental principle is the very same as that of the ART, one of ADAM's core technologies that has already been written in the annals of audio technology. The X-ART tweeter has a 4dB higher efficiency, a 3dB higher maximum sound pressure level, and an increase in frequency response up to 50 kHz.

The new HexaCone woofers (see p. 38) are designed with larger and longer voice coils that deliver a more linear excursion for higher SPL max. values. A stronger magnetic structure is added as well for greater efficiency and accuracy.

All SX-models, starting with the S2X all the way up to the S5X, can be retrofitted with an optional 24 bit/192 kHz D/A Converter (see p. 39) featuring an AES/EBU (XLR) and a SPDIF (RCA) input as well as a R/L/Mono switch. Furthermore these models feature an innovative front panel with sophisticated controls. These controls allow the user to adapt the speakers to the soundroom with high precision (see p. 39).

"You could be forgiven for thinking that there isn't too much left to achieve with monitoring technology. The ADAM SX generation disproves this by bringing a new benchmark to the market." (*Audio Media*, 12/2009)

Nearfield Monitor S1X

The smallest reference speaker

The S1X nearfield monitor delivers high quality sound in a very small cabinet. Due to the tiny dimensions the application possibilities of the S1X are almost unlimited.

The S1X incorporates all the critical attributes of the new SX-Series: the X-ART tweeter in combination with the ADAM designed class A/B amplifier and the HexaCone-woofer with optimized magnet/voice-coil systems, driven by premium PWM amplifiers. The combined features of crystal clear resolution, tight and precise low-frequency reproduction and effortless musical reproduction sets this speaker apart from all conventional designs.

The S1X is the best choice for all environments that require high quality within a small space, whether it is a smaller studio, an OB vehicle, or a 5.1 installation.

The new art of tweeter technology: X-ART

With the SX-Series, ADAM brings the new, improved version of the world famous *Accelerating Ribbon Technology* (see p. 36 f.) to the market. Compared to their predecessors, the X-ART drivers show an even better frequency response, higher efficiency and higher maximum sound pressure levels.

Amplifiers: power and control

The tweeter is driven by a 50W A/B amplifier, which has been developed by ADAM Audio especially for the X-ART tweeter (see p. 36 f.).

A top-class PWM amplifier takes care of the midwoofer. With its 200W, it has power in abundance and is capable of astonishing soundstages due to its cone design, optimized voice coils and new magnetic material.

Basic technical data at a glance

- X-ART tweeter
- 6” HexaCone midwoofer
- 50W/200W amplification
- tweeter & input gains on the rear panel
- 2 shelf filters on the rear panel
- 40Hz - 50kHz
- 113dB max peak SPL per pair
- 5 years warranty

S2X

The S2X brings together the virtues of the X-ART tweeter with the "classical" 7.5" woofer by using ADAM's innovative technologies and top-class materials.

The 7.5" HexaCone woofer is driven by a sophisticated magnet system with a 2" voice coil creating a greater linear excursion. This produces more dynamics than one would assume in a monitor of such small proportions. As a result, in addition to the unsurpassed audio quality of the X-ART and A/B amplifier combination, this monitor surprises the listener with a very powerful, deep, but always tight and precise low end.

Highly sophisticated control panel

The S2X is the first monitor of the SX-Series that features the new and refined control panel (see p. 39) that captivates the user with its variety of controls and their precision.

Basic technical data at a glance

- X-ART tweeter
- 7.5" HexaCone midwoofer
- 50W/250W amplification
- sophisticated control panel on the front
- 35Hz - 50kHz
- 120dB max peak SPL per pair
- 5 years warranty

Reviews at a glance: "Sonic Sensation"

"The ADAM Audio S2X can convince in all areas, concerning the sound as well as the workmanship, and are worth every Euro. [...] a no-compromise tool for all who mean serious business, whether in music or postproductions." (*www.96kHz.de*, 03/2010)

"We started off with a classical string quartet recording and let´s just say right away that the S2Xs floored us. Several adjectives spring to mind [...] - wide open, transparent, effortless, breathtaking realistic, loud, dynamic, involving... [...] If you close your eyes and continue listening, the S2Xs seem to ‚disappear' almost entirely. [...] you gradually become less aware that you´re listening to speakers because they´re like an open window on the music itself. [...] Result: These monitors are up there with the best we´ve tried so far." (*MusicTech*, 01/2010)

"So where does all this leave us? In summary, the S2Xs have a clear and present soundstage, dynamic mids, accurate bass and a forensic top end... The SX-series is undoubtedly better than the previous range, so much so you may find yourself getting very excited and using figurative expressions about electrons to express your delight." (James Wilkinson, *Audio Technology*, Issue 77)

"The S2X's knocked us out - with eyes closed, these monitors just vanish. Listening to these one tends to forget the speakers as the details appear with such astounding prescision. The sound is cristal clear and detailed, while instruments can be easily located. These are perfect speakers for developing a stereo image with amazing debth and width without loosing out in the mids." (*Logic Pro 9*, 03/2010)

Midfield Monitor S3X-H

S3X-H. Yes, even better...

The S3A is one of ADAM's most famous models and is found in many of the world's most prestigious recording studios. The successor to this world famous model is the S3X-H, a monitor second to none at its price point.

Unlike the S3A, the new X-model incorporates a 4.5" HexaCone-midrange to further improve this musically most important frequency range. This new design provides more detail with improved radiation characteristics while presenting a musically coherent sound.

To produce deep, tight bass both woofers now work within the same frequency range and radiate symmetrically. This allows for a problem free installation in any multi-channel application.

Basic technical data at a glance

- X-ART tweeter
- 4.5" HexaCone midrange
- 2 x 7.5" HexaCone woofers
- 50W/3 x 250W amplification
- sophisticated control panel on the front
- 32Hz - 50kHz
- 126dB max peak SPL per pair
- 5 years warranty

Reviews: "...the monitor reference..."

Due to the outstanding reputation of its predecessor, it was to be expected that the S3X-H would be reviewed with the most critical of all ears. Here are some samples (*complete reviews can be found on www.adam-audio.com*):

"The S3X-H convinces all along the line. ADAMs new member is all but just an improvement of a successful monitor. With a new loudspeaker design and painstaking tuning it is a first-class control tool in any studio. From now on, the monitor reference in the *Professional audio*-studio is called S3X-H." (*Professional audio*, 09/2009)

"[...] anyone seeking an uncompromised solution to studio monitoring should add these to your short list of products to consider." (*MIX*, 12/2009)

"The S3A is an amazing unit with some excellent technologies, and ADAM hasn't just built on this to give us the S3X, but has built something new and exciting with what it knows so well. The sound has been opened up in a whole new way that I believe consistently delivers more reliable results outside of your studio. These are reference monitors, and as they make their way into studios they will become part of the standard called 'music production'. The S3X radiates sound into the room with depth, accuracy, and clarity in the way you need it to be with comfort and ease. These are monitors that need to be heard." (*Audio Media*, 09/2009)

"The accuracy, spectral definition, stereo imaging, increased output power, and improved overall design of the S3X make it a perfectly reliable active monitor that can certainly find its place in any serious setup. With a five year warranty and a price tag somewhere around $3,500, ADAM AUDIO has struck a decisive blow once again!" (*Audiofanzine*, 05/2010)

Awards

Midfield Monitor S3X-V

Midfield monitoring on a new level

The midfield monitors of the SX-Series come in two versions. The S3X-V ('V' for vertical) is a 3-way construction with specific virtues concerning sound and radiation characteristics. The combination of the newly developed 4.5" HexaCone midrange and 9" HexaCone woofer combined with the X-ART tweeter creates the unique S3X-V control monitor.

Listening without fatigue

A step up from the smaller models, the S3X-V is equipped with more power and capable of producing higher volume along with a more detailed and homogeneous sound that will impress even the most experienced sound engineer. Whether the complex sonic images of an orchestra or the smooth tone of a jazz trio, the S3X-V reveals even the finest nuances of any material. The driver assembly of the S3X-V allows long time, non-fatiguing listening sessions.

Basic technical data at a glance

- X-ART tweeter
- 4.5" HexaCone midrange
- 9" HexaCone woofer
- 50W/2 x 250W amplification
- sophisticated control panel on the front
- 32Hz - 50kHz
- 124dB max peak SPL per pair
- 5 years warranty

Reviews: "Wonderfully detailed..."

"Wonderfully detailed, with an exceptionally transparent mid-range. [...] ADAM make the leap to a three-way speaker design that seems to pay dividends in clarity and separation. [...] I think it would be fair to say they're the best sounding ADAM monitors I've reviewed." (*Sound On Sound*, 12/2009)

"No doubt, the S3X-V deserve the title Reference Monitor. With this series, ADAM Audio proves to have a very good feeling for meeting the specific demands of the sound engineer's guild, creating studio standards at the same time. [...] A precision tool combined with a luxury good." (*www.96kHz.de*, 03/2010)

"Summary: The ADAM S3X-V's are an excellent tool that i would not want to miss. The listening impressions as well as the test showed that this speaker can handle just bout any type of music and offer with everyone a clear and perfectly detailed soundstage. [...] This speaker deserves no other grade but an A." (*Recording.de*, 02/2011)

Awards

RECORDING REDAKTIONSTIPP

Midfield Monitor S4X-H

The S4X-H: excessive power, highest accuracy

The S4X monitors are not just improved versions of the S4A, but the result of a long term evolutionary development. Like their predecessors, they have been designed for medium size control rooms. Offering enormous power, the S4X are also capable of working in larger environments.

The S4X-H midfield monitor combines the X-ART tweeter with a 6" HexaCone midrange and two redeveloped 9" HexaCone woofers. A stunning driver assembly for stunning results.

The X-ART tweeter (see p. 36 f.) sets a new benchmark in tweeter technology. ADAM Audio has specifically designed a new A/B power amplifier for this, that in combination with the X-ART tweeter guarantees an ultra fine resolution and perfect transparency.

New HexaCone midranges and woofers handle both the mid and low frequencies. With their larger voice coils and stronger magnets they have a longer linear excursion for higher SPLs without sacrificing detail and musicality.

Because both S4X models have identical tweeters and midrange drivers handling frequencies above 350 Hz, any combination of either model will integrate perfectly in a 5.1 or 7.1 installation.

The frontpanel

ADAM has developed an innovative front panel with sophisticated controls. These controls allow the user to adapt the speakers to the soundroom with high precision.

Apart from the standby-button, there are two controls for the input sensitivity, two for the bass section and two more for the high frequencies.

Basic technical data at a glance

- X-ART tweeter
- 6" HexaCone midrange
- 2 x 9" HexaCone woofers
- 50W/3 x 250 W amplification
- sophisticated control panel on the front
- 28Hz - 50kHz
- 128dB max peak SPL per pair
- 5 years warranty

Midfield Monitor S4X-V

The S4X-V

The two versions of the S4X are intended for use in medium and larger control rooms. They are an ideal choice for film, television and broadcast recording studios where the highest quality standards must be observed.

The S4X-V has been designed for vertical installation. This reference monitor features the same X-ART and 6” HexaCone midrange as the S4X-H aiming at almost identical tonal characteristics of both speakers. This allows combinations of the different versions in bigger multi-channel applications without tonal imbalance.

Basic technical data at a glance

- X-ART tweeter
- 6” HexaCone midrange
- 12” HexaCone woofers
- 50W/250W/500W amplification
- sophisticated control panel on the front
- 28Hz - 50kHz
- 126dB max peak SPL per pair
- 5 years warranty

Drivers & amplifiers

To allow the X-ART tweeter to extend to its highest frequencies, it is combined with a unique ADAM Audio A/B amplifier. This unique amplifier (see p. 37) has ultra low distortion and an immense internal bandwidth of more than 1MHz. Combine this amplifier with the X-ART tweeter and you get a fascinating sound that is effortless and of the highest resolution.

Furthermore, the S4X-V features a newly developed 12” HexaCone woofer. This driver, with electronic correction, has been designed for optimal results in a bass-reflex cabinet. An exceptionally long 3” voice coil coupled with a very strong and highly effective magnet system provides for powerful, yet never overemphasized bass reproduction.

Improperly designed larger monitors are always at risk of compromising the overall sound with bass reproduction that is too intense. As in all ADAM Audio speakers, both versions of the S4X have been designed to offer both the power and volume of the bass (28Hz at -3dB point) paired with the highest possible precision. Combine this with the transparent high and midrange frequencies of the S4X and this will give an engineer a new quality level of control and performance for larger rooms.

Main Monitors

S5X-H & S5X-V

Experience main monitors a cut above the rest

These Main Monitors have been designed for larger control rooms, can be soffit mounted and provide excellent freestanding operation as well. They transport the fundamental advantages of the X-ART technology (see p. 36 f) and the HexaCone woofers (see p. 38 f) to much higher SPL regions and higher respectively lower frequency responses. As the diaphragm areas involved are considerably enlarged, an impressive combination of natural sound and high dynamics is achieved.

The X-ART of midrange drivers & precise bass drivers

All ADAM main monitors employ the X-ART midrange drivers to achieve the best possible sound quality within this crucial area. Aiming at total authenticity in the reproduction of music, these monitors avoid the common flaw in big loudspeakers which is to impress the listener with a thunderous bass – a principle more in line with a PA loudspeaker. Instead, ADAM main monitors are designed to provide a big speaker that can actually be used for critical listening, combining precision and magnitude to enable sound engineers in larger control rooms to monitor even the most complex sound material with complete accuracy. Accordingly, ADAM main monitors feature highly sophisticated control panels (see p. 39) to ensure that they can be perfectly adapted to all kinds of room acoustics: precision through control, control through precision.

Set up and combination

The different versions of the S5X have been designed to meet different needs for setup and mounting in bigger studios. The very similar overall sound characteristics of both monitors allow for a perfect combination and integration of both S5X versions in a 5.1 or 7.1 installation.

Main Monitor S5X-H

S5X: Main Monitors a notch above

Both Versions of the S5X models have been designed for medium and large sized control rooms in which the precision *and* the power of the sound production are essential. The main task of these monitors is to bring the extraordinary sound quality which all ADAM monitors are famous for into areas of higher dynamics and higher sound pressure levels.

Drivers

The S5X-H features two 12" HexaCone woofers, a 7.5" HexaCone midwoofer unit, an X-ART midrange and an X-ART tweeter. This combination is capable of filling large control rooms with breathtaking realism and stunning dynamic performance.

Amplifiers

The upper three drivers are each powered by a 250 W discrete PWM (see p. 38) amplifier while two 500 W digital amps drive the two 12" woofers.

The X-ART midrange

The most famous and highly acclaimed feature of all ADAM monitors is the proprietary *Accelerating Ribbon Technology* tweeters. An exclusive feature of the main monitors is the application of this technology to the midrange as well.

In accordance to the X-ART tweeters, also the midrange units now feature the improved X-ART. Compared to their ART predecessors, these midranges show improvements namely in higher efficiencies and higher maximum sound pressure levels.

Basic technical data at a glance

- X-ART tweeter
- X-ART midrange
- 7.5" HexaCone midwoofer
- 2 x 12" HexaCone woofers
- 3 x 250W/2 x 500W amplification
- sophisticated control panel on the front
- 24Hz - 50kHz
- 131dB max peak SPL per pair
- 5 years warranty

Main Monitor S5X-V

The S5X-V

The S5X-V is a four-way vertically orientated studio monitor incorporating ADAM's proprietary X-ART folded ribbon tweeter and midrange unit, which provide amazingly life-like, detailed imaging.

It houses a 12" HexaCone subwoofer drive unit that has a large 3" voice coil and a very strong magnet system. The combination of this big motor with the outstanding stiffness of the cone enable the reproduction of signals down to 25Hz while remaining stable and tight. The 7.5" midwoofer uses the same honey-comb core coated with Kevlar on both sides, allowing for an extremely precise and uncolored response.

The upper three drivers are each powered by a 250W discrete PWM (see p. 38) amplifier, and a 500W digital amp powers the 12" subwoofer.

The S5X-V is designed to be used as either a midfield or main monitor in the most demanding professional recording, mixing, and surround studio applications.

Highly sophisticated control panel

Both versions of the S5X incorporate the new, very refined control panel (see p. 39) that entices the user with the variety and precision of its controls.

Apart from the standby-button, there are two controls for the input sensitivity, two for the bass section and two more for the high frequencies.

Basic technical data at a glance

- X-ART tweeter
- X-ART midrange
- 7.5" HexaCone midwoofer
- 12" HexaCone woofers
- 3 x 250W / 1 x 500W amplification
- sophisticated control panel on the front
- 25Hz - 50kHz
- 128dB max peak SPL per pair
- 5 years warranty


Input
Drive
Shelve Filter
Bass EQ Section
Input Gain
Tweeter
Mid
High
Low
Bass (12")
ADAM
PROFESSIONAL AUDIO
S7A MK-2

Main Monitors

S6X & S7A Mk2

The main monitors S6X and S7A Mk2 are designed for large control rooms and film studios. They present a completely new, impressive concept: to transport the unique realism of the ADAM monitors at a very high SPL level. In accordance with ADAM's main goal to achieve the best possible authenticity in music reproduction, any overemphasis of the bass frequencies should be avoided. Furthermore, it is essential for neutral sound characteristics at high volumes to achieve a wide dispersion in the horizontal plane and a somewhat narrower dispersion in the vertical plane, thus reducing reflections from the ceiling, the floor or a mixing console. Less reflection means superior imaging and better localization, facilitating the best possible transportability of mixes across the widest range of playback systems.

Advanced D'Appolito-array

The arrangement of the seven discrete drivers facilitates a gradual transition of the chassis dimensions. One of the most important aspects of these monitor's new approach is the vertical symmetry of the drivers, which could be referred to as advanced D´Appolito array. If the drivers are filtered properly there are – besides the dispersion characteristics mentioned previously – two more advantageous results:

- There is an absence of any sudden change in directivity with frequency, leading to harmonic dispersion behavior throughout the audio band. The absence of sudden changes in directivity is not visible in a frequency plot, but clearly audible - especially with a full range of materials, from single complex sources such as the human voice to the wide sonic palette of large orchestras.
- The dynamic capabilities of the monitor are distributed over the audio band more equally, and louder recording or mixdown sessions with SPL´s of 120dB are handled without offending the ear.

Impulse Coupling

In order to get a precise and undistorted reproduction, all drive units are mounted on an ultra stiff Aluminum honeycomb plate (see next page).

Amplifiers

Both the S6X and the S7A Mk2 ADAM use the new generation of switching amps and power supplies as described on page 38 of this catalog.

These are combined in an extremely powerful (1000 and 1500W rms respectively) yet cool amplifier assembly. Together with the built in overload protection circuits these amplifiers will run reliably and at constant safe operating temperatures not possible with conventional designs.

The amplifiers are of extremely low output impedance, leading to a damping factor >4.000, enabling them to strictly control the motion of the drive units.

Main Monitor S6X

The S6X: accuracy *and* power

The S6X is one of the most ambitious studio monitors available today. They can be found in some of the highest profile studios in the industry, from elite private studios to world class jazz, from rock and orchestral tracking and mixing facilities to high powered hip hop production rooms. The concept of the horizontal symmetry of the drivers is greatly affected by the generous proportions of the larger diaphragms, resulting in both exceptionally flat frequency response and extremely realistic dynamic reproduction across the entire audio spectrum. Numerous controls at the front panel allow detailed adaptations to different acoustic environments (see control panel, next page).

This main monitor offers very high accuracy and power in sheer abundance. SPL peaks beyond 120 dB are produced without any compression or harshness. The S6X is a top shelf choice for larger control rooms and film or sound studios.

Basic technical data at a glance

- X-ART tweeter
- 2 x X-ART midrange
- 2 x 7.5” HexaCone midwoofer
- 2 x 12” HexaCone woofers
- 4 x 250W/2 x 500W amplification
- sophisticated control panel on the front
- 23Hz - 50kHz
- 133dB max peak SPL per pair
- 5 years warranty

IC: Impulse Coupling (S6X & S7A Mk2)

To improve the time behavior of speakers, ADAM introduces IC = Impulse Coupling, a method to vastly improve the connection between drivers and wooden cabinet.

There is a well-known action = reaction principle of Sir Isaac Newton, which (as relates to speaker mounting) dictates that the forces created by the movement of the diaphragm/voice coil assemblies are transferred to the cabinet. As wood is not very stiff, these forces cause local instability around the driver, i.e. a phenomenon that keep the drivers basket in motion relative to the diaphragm, thus deteriorating the transmitted sound quality. Imagine if you were to jump in the water... starting from a sand bank gives you a much less stable jump-off point than starting from a solid rock.

Impulse Coupling is the rock solid connection that improves the situation of the driver in a comparable way. In both the S6X and the S7A Mk2, all drivers are mounted on an ultra stiff 25 mm thick aluminum honeycomb plate, which is acoustically dead - thereby providing an extremely mechanically stable bridge to the cabinet. As the drivers excessive energy is now controlled, their time behavior (and consequently their clarity) is audibly and measurably improved.

Main Monitor S7A Mk2

S7A Mk2: *the* benchmark

The S7A Mk2 is the 'big brother' of the S6A Mk2 and ADAM's most spectacular studio monitor to date. With a whopping combined 1500 W of onboard power (rms), this monitor reaches SPL peaks of 128 dB at a distance of 1 meter. The big bass diaphragms produce more volume even at pitches as low as 20Hz.

Quite simply, we feel that the S7A Mk2 is the benchmark of what is possible in state of the art full range active professional monitoring. It incorporates all of the ADAM inventions and designs, as well as the best materials available. This fusion of power and capacity with precision and accuracy results in unparalleled performance in professional monitoring.

The S7A Mk2 is ADAM's contribution to the best possible studio monitor available. The proof is in the listening – we encourage you to hear for yourself.

Basic technical data at a glance

- X-ART tweeter
- 2 x X-ART midrange
- 2 x 9" HexaCone midwoofer
- 2 x 15" HexaCone woofers
- 3 x 250W/2 x 500W/1 x 1.000W amplification
- sophisticated control panel on the front
- 20Hz - 50kHz
- 138dB max peak SPL per pair
- 5 years warranty

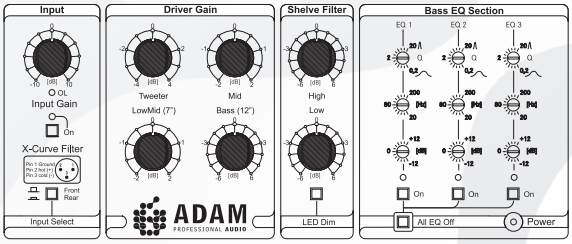
Control panel (S6X & S7A Mk2)

Numerous controls on the front panel introduce a new degree of control for main monitors. Along with the input gain, there are level controls for each of the four drivers, shelving filters on both ends of the frequency spectrum, and three full parametric EQs (20-200HZ) that can be used to combat standing waves in the control room. The EQ can be bypassed individually or as a group so that their overall effect can be analyzed in direct comparison to the unaffected signal.

In large film score mixing rooms, it may be desirable to have a representation of the sound in the theatres. To meet the ISO 2969 Standard, the Dolby™ X-curve has to be applied.

Using pink noise, the X-curve engages a 3 dB per octave roll-off above 2 kHz. Both the S6X and S7A Mk2 have a switch that activates this filter, eliminating the need for external processing during the film mix.
A second switchable input on the front allows servicing without moving the unit.

All LED indicators can be dimmed if necessary.




0dB
85Hz
120Hz
Volume
-60dB
6dB
Sub8
ADAM
50Hz
150Hz
Frequency

Subwoofer

Our subwoofers are dedicated to ADAM Audio's primary goal: the best possible authenticity in the reproduction of music. For our subwoofers, this means combining power and precision while simultaneously avoiding "impressive" bass volume at the cost of accuracy. Their task is it to complement the highly acclaimed lucidity and transparency of the ADAM monitors in the lower and lowest frequencies.

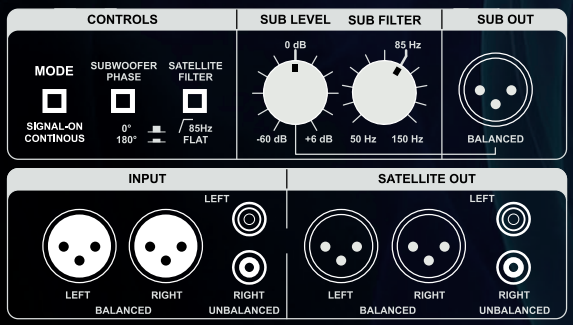
All subwoofers up to the Sub2100 feature both balanced (XLR) and unbalanced (RCA) in and output connectors, and numerous controls to adapt to different room acoustics and requirements.

"I recommend it highly to anyone looking for a top-notch subwoofer."
Tape Op on the Sub12 (Feb/March 2009)

Panel/Controls

All subwoofers up to the Sub2100 feature a number of controls to adapt to different room acoustics and requirements.

All units have a level control that varies from -60dB to +6dB, a phase ±180° switch and variable upper frequency barrier control (50-150Hz), a switchable 85Hz high pass filter for the satellite output. In addition, there is a 'signal-on/continuous' switch. This provides the option of automatic power up whenever the subwoofer receives a signal and automatic power off after 15 minutes of no signal.



Subwoofer

Sub7

The Sub7 has been designed to complement smaller monitors like the AX-Series. Its small footprint allows for an easy placement even in small environments.

The front panel features two motorized potentiometers that let you adapt the input level and crossover frequency settings for the best performance. These pots can also be controlled with an included wireless remote control, allowing you to optimize your sound reproduction from your ideal listening position.

The Sub7 is equipped with both balanced (XLR) and unbalanced (RCA or Cinch) in and output connectors and numerous controls. A 0°/180° phase switch and a switchable 85Hz highpass filter allows you to find the best settings for an ideal sound and performance.

The low cut off frequency of 32Hz (-3dB point) enables this subwoofer to reproduce register of even this range in a highly authentic manner.

Sub8

The Sub8 is a small yet deceptively powerful subwoofer designed to extend the low frequency capabilities of any nearfield monitoring system. The Sub8 houses a robust 8.5" woofer with an 1.5" voice coil, and is driven by a 160W ICE Power amp. This amp stays cool while handling maximum power levels, even if they are sustained. The front baffle features two motorized knobs that let you tailor input level and crossover frequency settings for the best performance in your studio. These knobs can be controlled with an included wireless remote, allowing you to optimize your sound reproduction from your ideal listening position.

The Sub8 is an ideal match for ADAM monitors such as the AX-Series, S1X, and S2X.

Sub10 Mk2 / Sub12

The Sub10 Mk2 and the Sub12 are powerful subwoofers designed to extend the low frequency capabilities of any near or midfield monitoring and are ideal matches for ADAM monitors such as the AX- or the SX-Series.

A large (2") voice coil is driven by a 200W Ice Power amp. This amp stays cool as it uses PWM (pulse width modulation, see p. 38) technology in the amp and the power supply sections, producing > 90% overall efficiency, and can handle its maximum power without danger to the electronics or the driver. The Sub10 Mk2 houses an 10" woofer, capable of a frequency response of 25 Hz - 150Hz. The larger Sub12 has a 12" woofer capable of producing a 3dB higher SPL max output and reproduces frequencies down to 22Hz.

Both versions work with a new down-firing bass reflex tube that, due to its shape and size, avoids unnecessary ventilation noise. For larger rooms or higher levels it is possible to chain as many ADAM Subs together as necessary. All inputs and outputs have both XLR and RCA (cinch) connectors.

Subwoofer recommendations

The overview allows finding the right subwoofer for different room sizes. It should be noted that these are recommendations only. Depending on your SPL demand or the kind of music you prefer you may go up or down the ladder of course.

room volume [m^3]	typical area [m^2]	subwoofer
up to 40	up to 18	Sub7
40 - 50	up to 20	Sub8
50 - 70	up to 25	Sub10
70 - 90	up to 30	Sub12
90 - 140	up to 47	Sub20
140 - 180	up to 60	Sub24
> 180	> 60	Sub2100

Sub7 Sub8 Sub10 Sub12

Sub20 / Sub24

The Sub20 and Sub24 are very powerful subwoofers designed for medium sized or larger control rooms in which powerful and yet accurate extra deep bass monitoring is required.
The Sub20 is equipped with two long throw 10" drivers which are meant to reproduce LFE or other low frequency signals down to 25Hz. The Sub24, housing two long throw 12" drivers, extends down to 22Hz.

The power of two subwoofers

The Sub20 and Sub24 each have two drivers, which are mounted in chambers at opposite sides of the cabinet. Due to this alignment, the forces applied to the cabinet oppose each other and consequently compensate themselves, so that the cabinet stays much quieter than with conventional arrays. Distortion is drastically reduced in this manner, resulting in improved signal clarity, especially at higher levels.

There are two down firing bass reflex tubes that, because of their size and construction, successfully avoid ventilation noise.

PWM amplifers

The amplifier section has two units, each capable of delivering 200W continuous or 300W peak power to their corresponding drive units. Both power supply and amplifier section use PWM technology (Pulse Width Modulation, see p. 38), meaning very high efficiency (≥90%) and cool operation in even the most critical phases of operation.

An additional output allows daisy-chaining as many Sub20s/Sub24s as desired.

Sub2100 - The ultimate subwoofer

For the special requirements of large control rooms and studios, ADAM has developed a unique subwoofer. The Sub2100 combines an enormous 21.5" woofer and an amplifier capable of 1000W continuous power housed in a bass-reflex enclosure tuned for reproducing frequencies down to 18Hz. The massive power and the extremely high efficiency (99dB/W/m) enable this system to produce linear SPL peaks of ≥128dB without any significant compression.

The biggest voice coil in the world

Essential to the volume of this woofer is the gigantic voice coil, with its 6" (the largest worldwide). So, the Sub2100 reaches high SPL in the lowest frequencies perceivable by the human ear. This means nothing less but a new subwoofer benchmark.

Challenged by nature's thunder only...

Sub20 Sub24 Sub2100

ADAM Audio:

The **ART** of Technology

In the beginning, the monitors from ADAM Audio were only known from an insiders' tip amongst experts. Ten years later, ADAM speakers have developed a worldwide, impeccable reputation as the preeminent tool for all sound engineers.
One of the main reasons for the great success of the ADAM products is the technical progress in several areas of speaker design. ADAM introduced many innovations which were not "just cosmetics", but true engineering progress that went to the essences of what speaker design is all about: its sound.

The most famous and most fundamental of these innovations undoubtly is the ADAM proprietary Accelerating Ribbon Technology: Every ADAM speaker uses ART drivers and every one of these drivers is being manufactured and measured in house. With the improvements of this technology in the new X-ART tweeters and midranges ADAM reinforces its claim to offer the best transducer technology available today.

"And by using the ART technology for the middle and high frequency reproduction, the speaker manufacturer from Berlin has set himself worldwide at the forefront of what is possible in reproduction quality."
(*Hardbeat*, Germany, 06/2007)

Engineering progress is not limited to the ART technology but extends to other areas of loudspeaker design such as diaphragm materials, new development and application of high-class amplifiers, the coupling of drivers and cabinets, control panels, and more.

In the following pages we provide you with some descriptions of the fundamental approaches of ADAM Audio as well as detailed explanations of some of the technologies mentioned above. For more information on all ADAM products and technologies, please visit: www.adam-audio.com.

Welcome to the World of ADAM Audio

Superior through innovation

ADAM Studio Monitors are one of the finest audio reference monitors available today. The goal of every ADAM loudspeaker is to **deliver the very best sonic performance possible**. The cornerstones of ADAM technology are ground-breaking innovation in electro-acoustic transducers, painstaking design and superior materials. This allows ADAM monitors to reproduce sonic images in breathtaking realism rarely heard before.

ADAM Audio provides a complete range of active systems to suit any environment and to precisely reproduce all kinds of acoustic events. This precision allows one **to hear previously hidden detail** in even the most familiar recordings. To an engineer, this new level of perception results in a mix with true imaging and depth that is fully transportable across the complete range of listener music systems.

Precision work ‚Made in Germany'

Advanced Dynamic Audio Monitors (ADAM) are developed and manufactured in Berlin, Germany **all under one roof**. In 2008, ADAM moved into a new, much larger facility, where every single loudspeaker is designed, assembled, tested, packed, and shipped. This means that from conception to delivery, every product is subjected to the same high quality controls.

Only these high principles can guarantee we can meet the claim of ADAM speaker systems to be the best tools in professional monitoring today. For many years, the very name **ADAM has been a synonym for the highest possible quality in acoustical reproduction and craftsmanship**. The ability to place all working processes under one roof with continuous quality management ensures that this will stay that way.

Production and measurement

Accuracy is indispensable in ADAM's high quality standards for all production and measurement processes. As part of that, **every ART and X-ART** tweeter and midrange is being **intricately crafted and tested by hand at ADAM's facility**. The **final tests include all important electro-acoustic parameters:** impedance, absolute frequency response, sensitivity level, relative frequency response to reference standard, phase characteristics, impulse response, absolute phase, and harmonic distortion factor.

Most of the electronics of the active monitors are made by ADAM, too. The plug-in amplifiers are based on the so called ICE modules, i.e. PWM based power amplifiers and mains supply circuits. With 90% efficiency, high power levels are possible without the otherwise compulsary heat issues. The ICE modules as well as the ADAM designed A/B amplifiers (for the X-ART tweeters) are being assembled by the **in-house electronic department**. The best up to date instruments (Rohde & Schwarz UPV) are used to precisely analyze the response chracteristics and to guarantee continuously high quality standards.

Extended warranty period

ADAM products are famous not only for their impeccable sound quality but also for their durability.

All active monitors from ADAM Audio carry a five-year warranty, which is **well above the industry standard**. This is a clear sign that ADAM is committed to the highest level of customer satisfaction and a proof for the reliability of their products.

Dr. Oskar Heil and ADAM chief engineer Klaus Heinz in a relatively early discussion about the project 1982

...every ART tweeter is being crafted by hand, and...

Loudspeaker technology - an overview

The dynamic transducers used in more than 99% of all loudspeakers today generate sound waves by using a voice coil which is mechanically connected to a stiff cone or dome. The preferred dome materials are fabric, polyamide, or aluminum. The unavoidable shortcomings of this design are the relatively high mass of the membrane/voice coil assembly and the tendency of the assembly to lose stiffness over time. The former **constrains the upper frequency range**, and the latter **progressively degrades the overall sonic performance**.

All conventional loudspeaker drive units (regardless of whether they are voice coil-driven, ribbons, electrostatic, piezo or magnetostatic) act like a piston, **moving air in a 1:1 ratio** with regard to the motion of the driver. This develops a problem in that the specific weight of air is much lower than that of the driving mechanism. As a result, the **air does not couple effectively with the transducer**. In electrical terms, this would be described as bad impedance matching between source and load. In both cases (acoustical and electrical), the result is less-than-optimal power transfer: usually, loudspeakers have a degree of efficiency of a mere 1-2%.

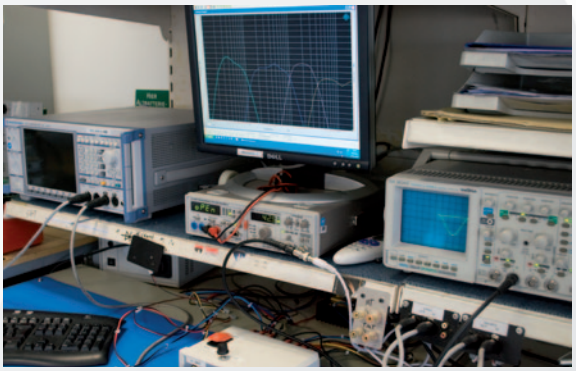
A relatively early attempt to solve these problems was the *ribbon tweeter*, in which current is passed through a small aluminum ribbon located in a strong magnetic field; however, problems with this design included **limited efficiency and dynamics**. In addition, the very low impedance of these early units necessitated an extra transformer to drive them. Their viability as a general replacement for dynamic tweeters was further reduced by the fact that these tweeters typically could only be used for frequencies above 5 kHz, consequently missing a great deal of critical timbral information.

Within the last 20 years or so, *magnetostatic designs* have superseded the original aluminum ribbons. In this method of construction, the aluminum ribbon was used in conjunction with a Kapton™ foil. These designs achieved normal impedances, and therefore eliminated the need for the extra transformer. Nevertheless, the problems of **unacceptably high crossover frequencies and serious limitations concerning the dynamics** remained unsolved.

ADAM Monitors

For many problems in loudspeaker technologies, ADAM has found solutions and/or improvements which mark **a true evolution compared to conventional approaches**. With the ART tweeter and midrange, ADAM presents a proprietary transducer technology that drastically improves the driver-air-ratio. This is a progress that is not just about marginal aspects but lies at the very core of the matter: the musical reproduction.

With this progress and improvements in monitoring quality, a **growing number of the most famous and prestigious studios own and use ADAM monitors** – Abbey Road, Jazz at Lincoln Center, Onkio Haus, 20th Century Fox, Blackbird Studios, Masterfonics, Circle House and Soundelux, to name a few. Elliott Scheiner, Chuck Ainlay, Kevin Killen, Peter Cobbin and many more of the great masters working in professional audio have chosen **ADAM products as their reference monitors**. Also, some of the best audio gear designers such as Rupert Neve, Malcolm Toft and the engineers at Manley Electronics use ADAM monitors to test their equipment.



...all electronics is being assembled and tested.

S7A Mk2 & S3X-H installation at “Fayez AlSaeed Sound” Studio, Dubai (UAE)

The X-ART Technology

The X-ART (eXtended Accelerating Ribbon Technology) tweeters and midranges incorporate a new approach to the Air Motion Transformer concept originally developed by Dr. Oskar Heil. ADAM Audio has improved upon this splendid idea utilizing superior geometries and materials to achieve unprecedented audio fidelity. X-ART strikes a new path concerning the kinematics of moving air, resulting in a dramatic improvement in the quality of audio reproduction.

The X-ART membrane consists of a pleated diaphragm in which the folds compress or expand according to the audio signal applied to them. The result is that **air is drawn in and squeezed out,** like the bellows of an accordion.

The ADAM X-ART design overcomes the piston-like motion of all conventional drivers and their inevitable problems (see previous page) by achieving an **improvement in air loading by a factor of 4 over conventional transducers**. To illustrate the basic principle by a comparison: When you breathe, your thorax is moving slowly whereas the air is moving comparably fast. Similarly, the X-ART diaphragm presses the air faster in or out of its folds than they themselves are moving. This markedly superior "motor" is responsible for the unprecedented clarity and pristine transient reproduction that can be heard with the ADAM X-ART drive units.

In addition, the X-ART tweeter's pleated membrane **avoids the typical breakup/distortion and subsequent dynamic limiting** at higher frequencies of stiffer voice coil designs, such as those found in dome and cone tweeters. Another positive result of the X-ART design is that the driving "stripes" are in direct contact with the outer air and are cooled immediately.

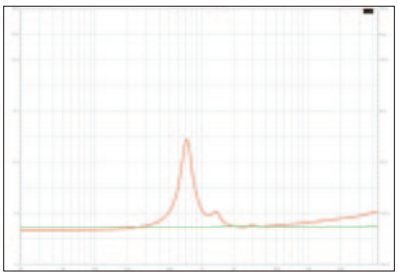


Fig. 1: X-ART tweeter impedance: linear within ± 15 mΩ (green) in comparison to a 1" dome tweeter (red)

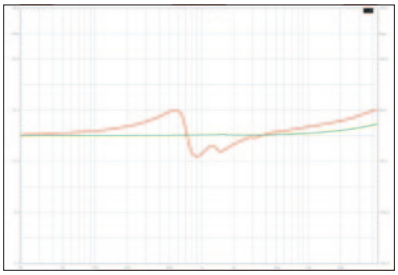


Fig. 2: Phase response of the X-ART tweeter compared to a 1" dome tweeter

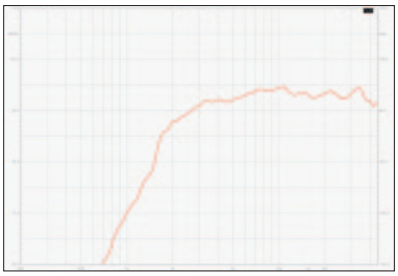


Fig. 3: Unfiltered X-ART tweeter with microphone position in 0°

More area = more dynamic

Diaphragm area is another important factor in determining the dynamic range of a transducer. Basically, what you see is what you get. The cone area you can see is always the acoustically active area of the loudspeaker–this is true for practically all other drive units. By folding the X-ART diaphragm into the 3rd dimension (as seen from the listener's position) a larger foil can be used, thus **increasing the acoustically effective area of the diaphragm by a factor of more than 2.5 times**. This results in higher dynamic output with extremely wide dispersion.

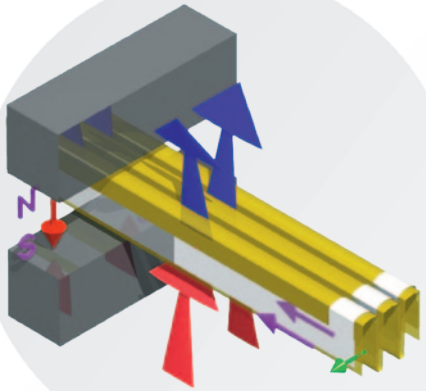


Fig. 4: The X-ART Principle: moving the air in a 4:1 ratio

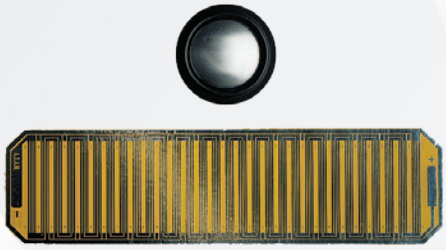


Fig. 5: Area comparison between the unfolded X-ART tweeter diaphragm and a 1" dome tweeter

The X-ART tweeter

The lack of a traditional voice coil in X-ART tweeters results in a very flat impedance (fig. 1). Please note the vertical scaling - in a normal plot, the impedance rise would disappear in the line itself, as it is 1/500 of the normally expected value. Correspondingly, the phase response is extremely flat within ±1.5°.

In summary, ART tweeters have **a high efficiency** (approximately 96 dB/W/m)**, a perfectly linear impedance** (3.9 ±0.21)**, an equally perfect phase response** (±1° within the utilized bandwidth, fig. 2)**, excellent directivity characteristics and a superb power handling capacity; plus, the neodymium magnets and yoke (ring) utilized in the X-ART units result in perfect magnetic shielding**.

A groundbreaking technological innovation with easily discernible superior performance and no technical flaws, the X-ART driver is clearly unequalled in the annals of audio history.

The X-ART midrange

Because midrange is musically speaking the most significant frequency band, the ADAM development team was particularly interested in building a midrange driver using the same principle as the X-ART tweeter.

The X-ART midrange driver uses a diaphragm that **weighs only a fraction of comparable voice coil units**, and can theoretically cover the range from 400Hz to 20kHz. The large diaphragm area – comparable to a 7" conventional midrange unit – permits **very high, uncompressed SPL without compromising dispersion**. The unit has an **absolutely flat impedance** curve and consequently exhibits **linear phase behavior**, with a mere ±0.75° deviation within the utilized frequency band.

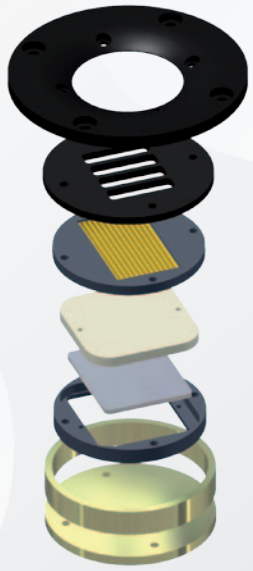


Fig. 6: New X-ART tweeter

The result of this technological superiority is unmistakable. There is a special openness that is immediately apparent to the listener when auditioning ADAM monitors utilizing the ART midrange drivers. These monitors are **a quantum leap forward in musical accuracy**, closely approaching the ideal loudspeaker.

New A/B amplifiers for the X-ART tweeter

Every progress comes with new questions and difficulties. The new X-ART tweeter with its extended frequency band up to 50kHz (-3dB point) caused an interesting kind of problem: PWM amplifiers need a low pass filter to separate the modulation frequency from the audio band, and this may limit the reproduction capabilities of the new tweeter.

The perfect partner for X-ART

So ADAM decided to design its own high frequency power amp to allow the new high frequency unit to live up to its unique talents. A power amp module was created that shows ultra low distortion (see fig. 8) figures together with an excellent damping factor. An internal bandwith of more than 1MHz is externally limited so that the unit delivers an ultra wide response up to 300kHz. With nothing limiting the talents of the X-ART tweeter, the monitor has unsurpassed clarity and openness which will please, amaze and thrill even the most experienced professional ear.

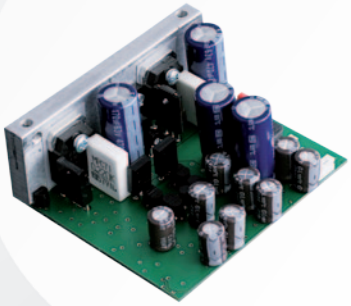


Fig. 7: As unspectacular it looks, as spectacular is the audible result: A/B amplifier for the new X-ART tweeter

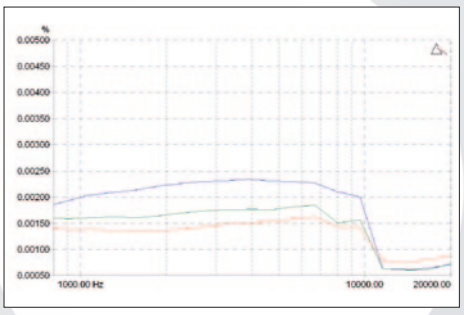


Fig. 8: THD + Noise @ 1 W, 6,25 W, 25 W (AES17)

Amplifier Technology and Woofers

Switching amps, switching power supplies

In recent years, amplifier technology has experienced its second big change after transitioning from tubes to transistors some 40 years ago. Semiconductors can still be found in this new generation of amplifiers, but the signals to be amplified are treated in a completely new and different way.

Pulse Width Modulation

PWM (Pulse Width Modulation) – sometimes referred to as Class D amplification in contrast to the normal A or A/B transistor amplifiers, and sometimes called Switching Amp Technology – converts the incoming signal to a series of rectangular waveforms of equal height. The width of the rectangles varies in time and the relation of the width of the rectangles represents the musical signal. This waveform can be amplified much more simply, as the transistors are not modulated anymore. Instead, they are used as switches that only turn the power supply voltage on and off. In the case of a single sine wave this looks as shown at the bottom of the page.

It is possible that a very fast mechanical switch could do the job, but power transistors are a better choice for the task, so PWM amplifiers still work pretty much like conventional Class A/B designs. It is important to note there are no bits and bytes involved, so "Digital Amplifier" is a misleading and inaccurate term.

Advantages

The main advantage of PWM amplifiers is their extremely high efficiency (>90%). As a result, the heat to be dissipated is only one fifth of earlier designs, leading to much lower temperatures within the amps and making the use of heat sinks obsolete.

This principle has been known for decades, but time was needed to develop units that perform at the leading edge in sonic reproduction quality and yet still maintain the high efficiency mentioned previously. The ADAM units presented here use the new technology for both the amp and the power supply section (i.e. no more transformers) combined with state of the art input and filter sections to achieve the best in multi-channel active studio monitoring.

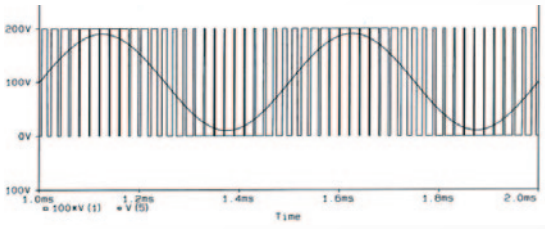


Fig. 9: Sinus curve with PWM signal

The HexaCone woofer

HexaCone woofers are an integral component in ADAM's SX-Series monitors. The core is a honeycomb Nomex structure that makes them both extremely light and very stiff. The front and back of the cone have been coated with Kevlar, one of the most advanced synthetic materials available. Kevlar withstands elongation by a force factor greater than 1000 times that of steel, enabling the cone to resist deformation.

No break-up resonances

HexaCone woofers are far more rigid than paper, polypropylene or aluminum devices of similar dimensions. Due to this rigidity, break up resonances in the diaphragm cone are prevented. The effective length and diameter of the voice coils in conjunction with the size of the magnets and the available cabinet volume are all precisely aligned for a musically optimal low frequency reproduction.

Authenticity instead of inadequate pressure levels

Another general problem observed frequently in many so-called reference monitors is a disproportionate low frequency volume. With massive woofers (and frequently inadequate acoustic pressure levels!), the average listener is supposed to be impressed. However, this approach results in an inaccurate representation of the overall sound quality. ADAM woofers have been designed to reproduce the given sound material with the highest possible authenticity, guaranteeing ideal translation to the widest range of systems and environments.

Fig. 10: HexaCone woofer

SX Control Panel & D/A Converter

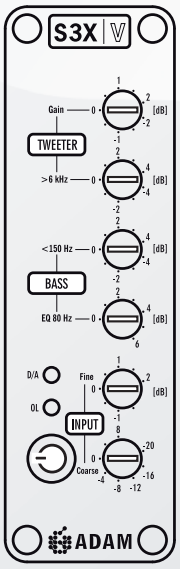
Control panel with „Virtual Ground Semiconductor Switch" Technology

Another innovation we present within the SX series is a control panel with "virtual ground semiconductor switch technology". That gives you many different sophisticated controls as well as an accuracy and repeatability of the values that has been unknown in the analogue domain so far: whatever value you re-chose, you will get it to within a <0,005dB accuracy! These panels are used in the models S2X to S5X.

The rotary step switches on these panels are designed to switch discrete resistors within a semiconductor resistor network that is located on the amplifier module in the back of the monitors. They allow for precise settings, which are much more accurate than usual potentiometers. These exact settings are a true advantage for every sound engineer who wants to make sure that switching back from position 'b' to position 'a' is exactly the same setting each and every time. Furthermore, there is no potentiometer-scratching and no switch-scratching noise because there is no audio signal at the panel itself – the music signals do not move back and forth between the amplifier section and the front panel.

The controls at a glance:

- Input sensitivity is handled by two controls: one for coarse settings, -20dB to +8dB in 4dB steps, and one for fine tuning in 0.5dB steps, ranging from -1.5dB to 2dB.
- There are two controls for the lower frequencies: One is an equalizer at 80Hz that can boost up the response by 6dB in 1dB steps, the second is a shelf filter that allows you to progressively alter the frequencies below 150Hz in a ± 4dB maximum range at 2Hz in 1dB increments.
- High frequencies can also be adjusted by two different controls: The first influences the tweeter ± 2dB in 0,5dB steps, the second is a shelf filter that works for high frequencies above 6kHz in a ± 4dB maximum range at 20kHz in 1dB increments.



DA-SX: High accuracy D/A converter for the SX-Series

To work directly from digital sources ADAM offers a optional plug-in D/A converter for the SX series. The converter install easily into the back of the amplifier module and is designed to handle both AES (via XLR) and SPDIF signals (via RCA or TOSLINK). Additionally a word clock input allows external synchronization of the converter. ADAM Audio's custom D/A converter is made to the highest technical standards and excels both in musical accuracy and technical data.

Controls and indicators:

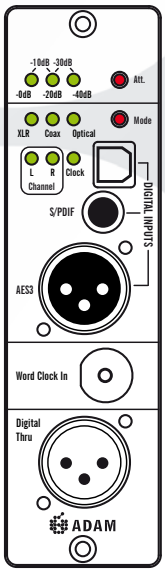
"Mode" indicates:

- the selected input,
- the channel to be reproduced and
- use of the word clock input.

A 5 step analog attenuator is included.
A male XLR output carries the chosen digital input signal so chaining to the other stereo speaker is possible.

Technical data at a glance:

- THD+N @ 1kHz, 0dBFS, 24bit : ≤ -104dB = ≤ 0,0006 %at all sampling rates, bandwith: 20kHz (acc. to AES17)
- THD+N @ 1kHz, -10dBFS ≤ -98dB = 0,0013 % at all sampling rates, bandwith: 20kHz (acc. to AES17)
- S/N @ 0dB attenuation: ≥ 114dB



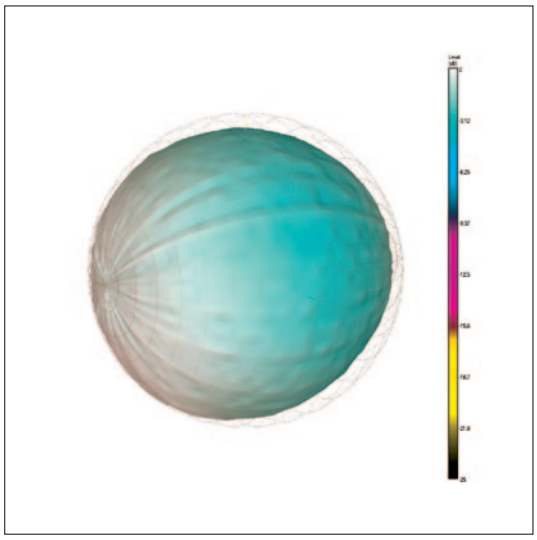
Directivity measurements for room acoustics: the **EASE® balloons**

Modern control rooms are often carefully planned with appropriate 3-D CAD software. Today this includes the simulation of room modes and the absorption behaviour of the acoustic treatments.

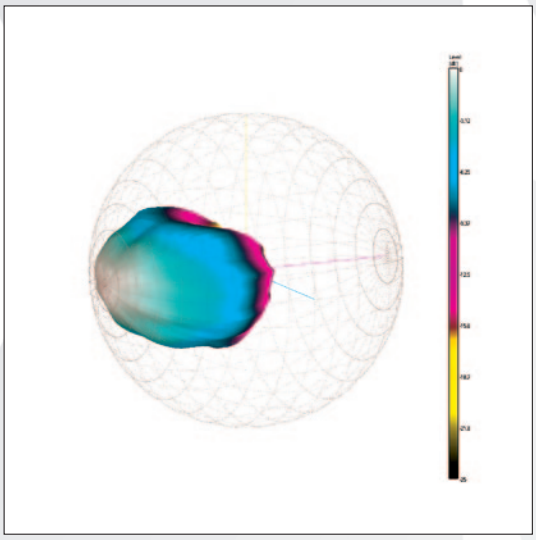
Modern software solutions can give you a calculation of the resulting sound field and even make the room audible via headphones. The best known software currently is EASE® by *Acoustic Design Ahnert Berlin*. To "know" the directivity behaviour of the speaker under consideration the program needs to measure responses in all possible directions, and it needs these measurements for many different frequencies, as the directivity varies greatly with frequency.

These numerous measurements are combined in a so called balloon, that show the directivity in all directions at one distinctive frequency. We present the S1X here at four different frequencies while the complete set of measurement holds 240 balloons. An acoustician can implement all the measurements into the software to preview the final frequency responses and the resultiing sweet spot area.

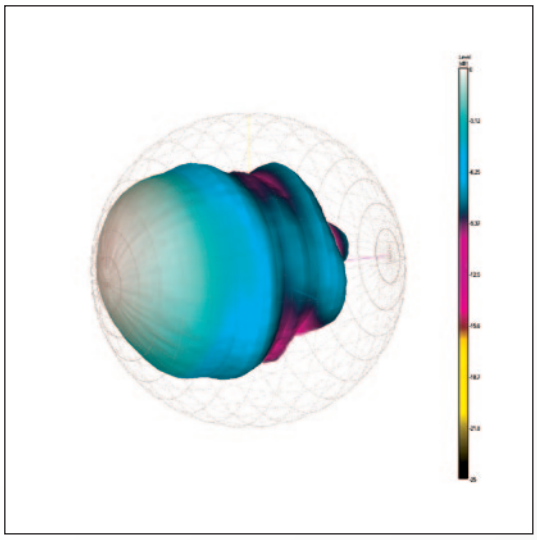
ADAM offers EASE® balloons for the monitors of the SX-Series on its website: www.adam-audio.com



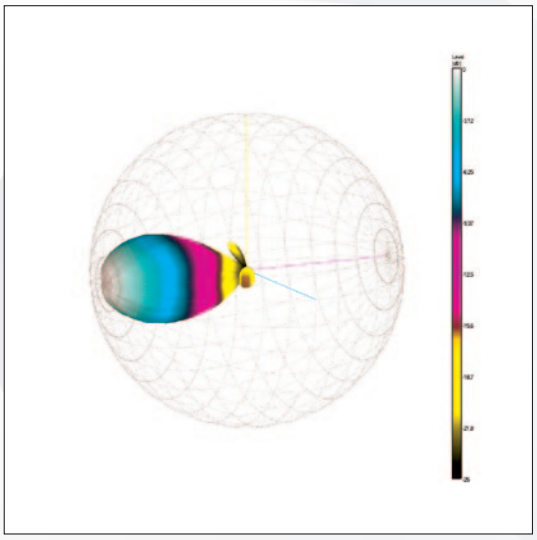
Data Shown: S1X
Display Parameters: Frequency: 300Hz
(curve smoothing with 1/24th Octave)



Data Shown: S1X
Display Parameters: Frequency: 10kHz
(curve smoothing with 1/24th Octave)



Data Shown: S1X
Display Parameters: Frequency: 1000Hz
(curve smoothing with 1/24th octave)



Data Shown: S1X
Display Parameters: Frequency: 20kHz
(curve smoothing with 1/24th Octave)

Technical Data **AX-Series**





	A3X	A5X	A7X	A8X	A77X
Woofer/Subwoofer	1	1	1	1	2
Basket ø *3	120 mm / *4.5"*	145 mm / *5.5"*	175 mm / *7"*	220 mm / *8.5"*	175 mm / *7"*
Voice coil ø	25 mm / *1"*	32 mm / *1.5"*	38 mm / *1.5"*	38 mm / *1.5"*	38 mm / *1.5"*
Cone material	Carbon Fibre	Carbon/Rohacell/Glass	Carbon/Rohacell/Glass	Carbon/Rohacell/Glass	Carbon/Rohacell/Glass
X-ART Tweeter	1	1	1	1	1
Diaphragm area	2420 mm^2 / 4 $in.^2$	2420 mm^2 / 4 $in.^2$	2420 mm^2 / 4 $in.^2$	2420 mm^2 / 4 $in.^2$	2420 mm^2 / 4 $in.^2$
Equivalent diaphragm ø	56 mm / *2"*	56 mm / *2"*	56 mm / *2"*	56 mm / *2"*	56 mm / *2"*
Velocity transfer ratio	4:1	4:1	4:1	4:1	4:1
Diaphragm weight	0.17 g	0.17 g	0.17 g	0.17 g	0.17 g
Built in amps	2	2	2	2	3
Subwoofer / Woofer *1/2	25 W / 40 W	50 W / 75 W	100 W / 150 W	150 W / 225 W	2 x 100 W / 150 W
Tweeter *1/2	25 W / 40 W	50 W / 75 W	50 W / 75 W	50 W / 75 W	35 W / 50 W
Controls					
Volume	-∞ to + 14 dB	-∞ to + 14 dB	-∞ to + 14 dB	-∞ to + 14 dB	-∞ to + 14 dB
Tweeter level	± 4 dB	± 4 dB	± 4 dB	± 4 dB	± 4 dB
Room EQ > 5kHz	•	± 6 dB	± 6 dB	± 6 dB	± 6 dB
Room EQ < 300Hz	•	± 6 dB	± 6 dB	± 6 dB	± 6 dB
General Data					
Freq. response	60 Hz - 50 kHz	50 Hz - 50 kHz	42 Hz - 50 kHz	38 Hz - 50 kHz	38 Hz - 50 kHz
THD 90 dB/1m > 100Hz	≤ 0.8%	≤ 0.6%	≤ 0.5%	≤ 0.5%	≤ 0.5%
Short time sine wave acoustic output at 1 m from 100 Hz to 3 kHz	≥ 98 dB	≥ 102 dB	≥ 106 dB	≥ 112 dB	≥ 114 dB
Max. peak acoustic output per pair with music	≥ 106 dB	≥ 110 dB	≥ 114 dB	≥120 dB	≥ 122 dB
Crossover frequencies	2800 Hz	2500 Hz	2500 Hz	2300 Hz	400/3000 Hz
Input connectors	XLR / RCA	XLR / RCA	XLR / RCA	XLR / RCA	XLR / RCA
Input impedance	10 kΩ	30 kΩ	30 kΩ	30 kΩ	30 kΩ
Weight	4,6 kg / *10.1 lb.*	6,6 kg / *14.6 lb.*	9,2 kg / *20.3 lb.*	13 kg / *28.7 lb.*	12,8 kg / *28.2 lb.*
Magnetically shielded	no	no	no	no	no
Height x Width x Depth	252 x 150 x 185 mm *10" x 6" x 7.5"*	280 x 170 x 220 mm *11" x 6.5" x 8.5"*	337 x 201 x 280 mm *13.5" x 8" x 11"*	400 x 255 x 320 mm *15.5" x 10" x 12.5"*	235 x 530 x 280 mm *9.2" x 20.9" x 11"*
Warranty	5 years	5 years	5 years	5 years	5 years

Technical Data **Subwoofer**







	Sub 7	Sub 8	Sub10 Mk2	Sub12	Sub20	Sub24	Sub2100
Driver	178 mm / *7"*	210 mm / *8.5"*	260 mm / *10"*	310 mm / *12"*	2 x 260 mm / *10"*	2 x 310 mm / *12"*	543 mm / *21.5"*
Voice coil ø	38 mm / *1.5"*	38 mm / *1.5"*	50 mm / *2"*	50 mm / *2"*	50 mm / *2"*	50 mm / *2"*	150 mm / *6"*
Cone material	coated paper	coated paper	coated paper	coated paper	coated paper	coated paper	paper
Amp. power RMS / music * 1/2	140 W / 210 W	160 W / 240 W	200 W / 300 W	200 W / 300 W	2 x 200 W / 300 W	2 x 200 W / 300 W	1000 W / 1200 W
Frequency response	32 Hz - 150 Hz	28 Hz - 150 Hz	25 Hz - 150 Hz	22 Hz - 150 Hz	25 Hz - 150 Hz	22 Hz - 150 Hz	18 Hz - 150 Hz
THD >60Hz	≤ 1 %	≤ 1 %	≤ 1 %	≤ 1 %	≤ 1 %	≤ 1 %	≤ 1 %
SPL max in 1m	≥ 107 dB	≥ 110 dB	≥ 113 dB	≥ 115 dB	≥ 118 dB	≥ 120 dB	≥ 128 dB
Crossover frequencies	50 - 150 Hz	50 - 150 Hz	50 - 150 Hz	50 - 150 Hz	50 - 150 Hz	50 - 150 Hz	50 - 150 Hz
Input connectors	XLR / RCA	XLR / RCA	XLR / RCA	XLR / RCA	XLR / RCA	XLR / RCA	XLR / RCA
Input impedance	10 kΩ	10 kΩ	10 kΩ	10 kΩ	10 kΩ	10 kΩ	10 kΩ
Weight	8 kg / *17.6 lb.*	12 kg / *26.5 lb.*	21 kg / *46.3 lb.*	26 kg / *57.3 lb*	38 kg / *83.8 lb*	48 kg / *105.8 lb*	85 kg / *187.4 lb*
Height x Width x Depth	370 x 200 x 280 mm *14.5" x 8" x 11"*	410 x 260 x 380 mm *16" x 10" x 15"*	560 x 300 x 400 mm *22" x 12" x 15.5"*	600 x 360 x 450 mm *23.5" x 14" x 17.5"*	560 x 810 x 300 mm *22" x 32" x 12"*	600 x 890 x 360 mm *23.5" x 35" x 14"*	850 x 600 x 705 mm *33.5" x 23.5" x 28"*
Warranty	5 years	5 years	5 years	5 years	5 years	5 years	5 years

*1 = long term IEC 265-8-Wrms / 10 min
*2 = nominal IEC 265-8 = Peak Power 5 µsec
*3 =outer basket dimensions

Technical Data **SX-Series**






	S1X	S2X	S3X-V	S3X-H	S4X-V	S4X-H
Woofer	1	1	1	2	1	2
Basket ø *3	155 mm / *6”*	186 mm / *7.5”*	228 mm / *9”*	186 mm / *7.5”*	310 mm / *12”*	228 mm / *9”*
Voice coil ø	37 mm / *1.5”*	50 mm / *2”*	50 mm / *2”*	50 mm / *2”*	75 mm / *3”*	50 mm / *2”*
Cone material	HexaCone	HexaCone	HexaCone	HexaCone	HexaCone	HexaCone
Cone midrange	•	•	1	1	1	1
Basket ø * 3	•	•	116 mm / *4.5”*	116 mm / *4.5”*	155 mm / *6”*	155 mm / *6”*
Voice coil ø	•	•	25 mm / *1”*	25 mm / *1”*	37 mm / *1.5”*	37 mm / *1.5”*
Cone material	•	•	HexaCone	HexaCone	HexaCone	HexaCone
X-ART tweeter	1	1	1	1	1	1
Diaphragm area	2420 mm^2 / 4 inch^2	2420 mm^2 / 4 inch^2	2420 mm^2 / 4 inch^2	2420 mm^2 / 4 inch^2	2420 mm^2 / 4 inch^2	2420 mm^2 / 4 inch^2
Equivalent diaphragm ø	56 mm / 2”	56 mm / 2”	56 mm / 2”	56 mm / 2”	56 mm / 2”	56 mm / 2”
Velocity transform. ratio	4 : 1	4 : 1	4 : 1	4 : 1	4:1	4 : 1
Diaphragm weight	0,17 g	0,17 g	0,17 g	0,17 g	0,17g	0,17 g
Built-in amplifiers*	2	2	3	4	3	4
Woofer * 1/2	200 W / 280 W	250 W / 350 W	250 W / 350 W	2 x 250 W / 350 W	500 W / 700 W	2 x 250 W / 350 W
Midrange * 1/2	•	•	250 W / 350 W	250 W / 350 W	250 W / 350 W	250 W / 350 W
Tweeter * 1/2	50 W / 100 W	50 W / 100 W	50 W / 100 W	50 W / 100 W	50 W / 100 W	50 W / 100 W
Controls						
Input sensitivity (coarse)	±10 dB	-20 to +8 dB (4 dB steps)	-20 to +8 dB (4 dB steps)	-20 to +8 dB (4 dB steps)	-20 to +8 dB (4 dB steps)	-20 to +8 dB (4 dB steps)
Input sensitivity (fine)	•	-1,5 to +2 dB (0,5 dB steps)	-1,5 to +2 dB (0,5 dB steps)	-1,5 to +2 dB (0,5 dB steps)	-1,5 to +2 dB (0,5 dB steps)	-1,5 to +2 dB (0,5 dB steps)
EQ 80 Hz	•	0 to +6 dB (1 dB steps)	0 to +6 dB (1 dB steps)	0 to +6 dB (1 dB steps)	0 to +6 dB (1 dB steps)	0 to +6 dB (1 dB steps)
High shelve > 6 kHz	±6 dB	±4 dB (1 dB steps)	±4 dB (1 dB steps)	±4 dB (1 dB steps)	±4 dB (1 dB steps)	±4 dB (1 dB steps)
Low shelve < 150 Hz	±6 dB	±4 dB (1 dB steps)	±4 dB (1 dB steps)	±4 dB (1 dB steps)	±4 dB (1 dB steps)	±4 dB (1 dB steps)
Tweeter gain	±4 dB	±2 dB (0,5 dB steps)	±2 dB (0,5 dB steps)	±2 dB (0,5 dB steps)	±2 dB (0,5 dB steps)	±2 dB (0,5 dB steps)
General data						
Freqency response	40 Hz - 50 kHz	35 Hz - 50 kHz	32 Hz - 50 kHz	32 Hz - 50 kHz	28 Hz - 50 kHz	28 Hz - 50 kHz
THD > 80 Hz	≤ 1,5 %	≤ 0,8 %	≤ 0,6 %	≤ 0,6 %	≤ 0,6 %	≤ 0,6 %
Short time	≥ 103 dB	≥ 110 dB	≥ 114 dB	≥ 116 dB	≥ 118 dB	≥ 118 dB
Max. peak	≥ 113 dB	≥ 120 dB	≥ 124 dB	≥ 126 dB	≥ 128 dB	≥ 128 dB
Crossover frequencies	2200 Hz	2200 Hz	350 / 2800 Hz	350 / 2800 Hz	280 / 2800 Hz	280 / 2800 Hz
Input connectors analog	XLR	XLR	XLR	XLR	XLR	XLR
Input connectors digital (optional)	•	AES/EBU (XLR) + SPDIF (Cinch) + word clock	AES/EBU (XLR) + SPDIF (Cinch) + word clock	AES/EBU (XLR) + SPDIF (Cinch) + word clock	AES/EBU (XLR) + SPDIF (Cinch) + word clock	AES/EBU (XLR) + SPDIF (Cinch) + word clock
Input impedance	10 kΩ	10 kΩ	10 kΩ	10 kΩ	10 kΩ	10 kΩ
Weight	6 kg / *13.2 lb.*	10,8 kg / *23.8 lb.*	15,4 kg / *34 lb.*	19,6 kg / *43.2 lb.*	35,6 kg / *78,5 lb.*	32,2 kg / *71 lb.*
Magnetically shielded	optional	optional	optional	optional	optional	optional
Height x Width x Depth	295 x 175 x 260 mm *11.5” x 7” x 10”*	370 x 220 x 320 mm *14.5” x 8.5” x 12.5”*	485 x 281 x 295 mm *19” x 11” x 11.5”*	280 x 530 x 320 mm *11” x 21” x 12.5”*	690 x 360 x 445 mm *27” x 14” x 17.5”*	360 x 700 x 450 mm *14” x 27.5” x 17.5”*
Warranty	5 years	5 years	5 years	5 years	5 years	5 years

*1 = long term IEC 265-8-Wrms / 10 min
*2 = nominal IEC 265-8 = Peak Power 5 µsec
*3 = outer basket dimensions
*4 = EQ 80 Hz (Quality/Hz/Level)

Technical Data **SX-Series, S7A Mk2**




	S5X-H	S5X-V	S6X	S7A Mk2
Midwoofer / Subwoofer	1 / 2	1 / 1	2 / 2	2 / 2
Basket ø *3	186 mm / 305 mm *7.5" / 12"*	186 mm / 305 mm *7.5" / 12"*	186 mm / 305 mm *7.5" / 12"*	228 mm / 380 mm *9" / 15"*
Voice coil ø	50 mm / 75 mm *2" / 3"*	50 mm / 75 mm *2" / 3"*	50 mm / 75 mm *2" / 3"*	50 mm / 100 mm *2" / 4"*
Cone material	HexaCone	HexaCone	HexaCone	HexaCone / Paper
X-ART Midrange	1	1	2	2
Diaphragm area	16800 mm^2 / 26 $inch^2$	16800 mm^2 / 26 $inch^2$	16800 mm^2 / 26 $inch^2$	16800 mm^2 / 26 $inch^2$
Equiv. diaphragm ø	146 mm / 5.5"	146 mm / 5.5"	146 mm / 5.5"	165 mm / 5.5"
Speed transf. ratio	3,5 : 1	3,5 : 1	3,5 : 1	3,5 : 1
Diaphragm weight	0,7 g	0,7 g	0,7 g	0,7 g
X-ART Tweeter	1	1	1	1
Diaphragm area	2420 mm^2 / 4 $in.^2$	2420 mm^2 / 4 $in.^2$	2420 mm^2 / 4 $in.^2$	2420 mm^2 / 4 $in.^2$
Equivalent diaphragm ø	56 mm / *2"*	56 mm / *2"*	56 mm / *2"*	56 mm / *2"*
Velocity transform. ratio	4:1	4:1	4:1	4:1
Diaphragm weight	0,17g	0,17g	0,17g	0,17g
Built in amps:	5	4	6	6
Subwoofer (1/2)*	2 x 500 W / 700 W	500 W / 700 W	2 x 500 W / 700 W	1000 W / 1400 W 500 W / 700 W
Woofer (1/2)*	250 W / 350 W	250 W / 350 W	2 x 250 W / 350 W	500 W / 700 W 250 W / 350 W
Midrange (1/2)*	250 W / 350 W	250 W / 350 W	250 W / 350 W	250 W / 350 W
Tweeter (1/2)*	250 W / 350 W	250 W / 350 W	250 W / 350 W	250 W / 350 W
Control panel				
Input sensitivity (coarse)	-20 to +8 dB (4 dB steps)	-20 to +8 dB (4 dB steps)	±10 dB	±10 dB
Input sensitivity (fine)	-1,5 to +2 dB (0,5 dB steps)	-1,5 to +2 dB (0,5 dB steps)	•	•
EQ 80 Hz	0 to +6 dB (1 dB steps)	0 to +6 dB (1 dB steps)	3 x 0.2-20/20-200/ ±12dB *4	3 x 0.2-20/20-200/ ±12dB *4
High shelve > 6 kHz	±4 dB (1 dB steps)	±4 dB (1 dB steps)	±6 dB	±6 dB
Low shelve < 150 Hz	±4 dB (1 dB steps)	±4 dB (1 dB steps)	±6 dB	±6 dB
Tweeter gain	±2 dB (0,5 dB steps)	±2 dB (0,5 dB steps)	±4 dB	±4 dB
General Data				
Frequency response	24 Hz - 50 kHz	25 Hz - 50 kHz	23 Hz - 50 kHz	20 Hz - 50 kHz
THD >80Hz	≤ 0,5 %	≤ 0,5 %	≤ 0,5 %	≤ 0,5 %
Short time sine wave acoustic output at 1 m from 100 Hz to 3 kHz	≥ 121 dB	≥ 118 dB	≥ 123 dB	≥ 128 dB
Max. peak acoustic output per pair with music	≥ 131 dB	≥ 128 dB	≥ 133 dB	≥ 138 dB
Crossover frequencies	200 / 800 / 4000 Hz	160 / 800 /4000 Hz	85 / 800 / 3100 Hz	65 / 800 / 3100 Hz
Input connectors analog	XLR	XLR	2 XLR	XLR
Input connectors digital (optional)	AES/EBU (XLR) + SPDIF (Cinch) + word clock	AES/EBU (XLR) + SPDIF (Cinch) + word clock	•	•
Input impedance	10 kΩ	10 kΩ	10 kΩ	10 kΩ
Weight	63,4 kg / *139.8 lb.*	44,6 kg / *98.3 lb.*	97 kg / *213.8 lb.*	261 kg / *575.4 lb.*
Height x Width x Depth	700 x 700 x 473 mm *17" x 33.5" x 15.5"*	830 x 410 x 480 mm *32.5" x 16" x 19"*	720 x 940 x 490 mm *28.5" x 37" x 19.5"*	900 x 1200 x 670 mm *35.5" x 47" x 26.5"*
Warranty	5 years	5 years	5 years	5 years

ADAM Audio GmbH
Ederstr. 16
12059 Berlin
GERMANY

tel: +49 30-863 00 97-0
fax: +49 30-863 00 97-7
email: info@adam-audio.com

ADAM Audio UK Ltd.
email: uk-info@adam-audio.com

ADAM Audio USA Inc.
email: usa-info@adam-audio.com

ADAM Audio China
email: asia-info@adam-audio.com

www.adam-audio.com