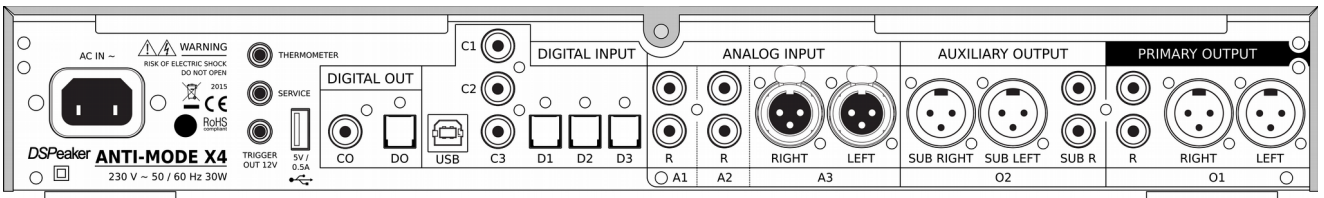
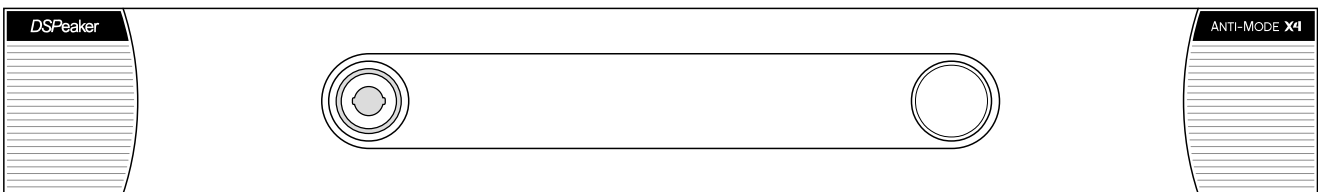


DSPeaker

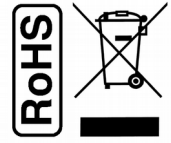
ANTI-MODE™ X4

Quick-Start Guide



Recycling information

Anti-Mode X4 is marked according to the **Waste Electrical and Electronic Equipment Directive**. There are take-back systems in place that help to preserve nature and natural resources when products are disposed of appropriately. If you need to dispose of this product, use the take-back system that has dedicated collection facilities for electronic equipment. Do not put the product into household waste disposal!



Anti-Mode X4 is manufactured using parts and processes that follow the EU directive of the Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment (RoHS).

Safety Instructions

- The Anti-Mode X4 unit shall not be exposed to dripping or splashing of liquids and no objects filled with liquids should be placed on the unit.
- Anti-Mode X4 has been designed for normal indoor use. Use of the device outdoors, in humid or other extreme environments, may cause reduced performance.
- The Anti-Mode X4 unit contains a battery that is **not** user-replaceable.
- **CAUTION:** The remote control supplied with Anti-Mode X4 contains a button cell battery. Only replace it with the same type (CR2032) and in the correct orientation!



WARNING: Do not ingest battery, Chemical Burn Hazard!

Keep batteries out of reach of children and dispose of the used battery appropriately. If the button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

If the battery compartment does not close securely, stop using the remote control and keep it away from children.


- When the unit is in stand-by mode, the stand-by indicator on the front panel will be lit.
- **CAUTION:** The plug on the power supply cord acts as a disconnect device. Keep the socket outlet free of obstructions and easily accessible.
- **CAUTION:** Do not cover any ventilation openings. Blocking air circulation increases the internal temperature and shortens the life-time of the unit.
-  Headphone output: High sound pressure is possible and presents a hearing damage risk! Do not listen at high volume levels for long periods.



Table of Contents

1. Getting Started.....	4
What's included in the box.....	4
Language Selection.....	4
Front Panel.....	5
Rear Panel.....	5
Remote Controller Overview.....	6
2. Basic Operation.....	7
Home Screen.....	7
Main Menu.....	7
3. Room Calibration.....	7
Changing the Active Profile.....	9
Using Sound Profiles.....	9
Multiple Calibrations.....	9
Quick Tone.....	9
Bypass Mode.....	10
Mute, Standby Mode.....	10
Shaping Sound: Bass Compensation.....	10
Shaping Sound: Bass Tilt.....	10
Shaping Sound: Treble Tilt.....	11
Shaping Sound: Parametric Eqs.....	11
4. Calibration and Measurement Details.....	12
Connections and pre-calibration settings.....	12
Advanced Calibration.....	14
Measure Only.....	14
5. Menu Details.....	15
Anti-Mode™ Settings Menu.....	15
Sound Menu.....	16
Headphones.....	17
System Menu.....	18
Profiles.....	19
Input Menu.....	20
6. Firmware update.....	21
7. Manufacturer.....	23
Contact.....	23
8. Technical Specifications.....	24

1. Getting Started

What's included in the box

- ✓ The Anti-Mode X4 unit (not pictured)
- ✓ A power cord for your country / region
- ✓ A calibration microphone with an XLR cable
- ✓ A microphone stand
- ✓ An infra-red remote controller
- ✓ This guide



Installation

- If still present, remove the protective film from the display.
- Please read the safety and installation instructions before connecting and operating the unit. Before proceeding to calibration, please connect at least one of the inputs and the outputs that are relevant to your system.
- Anti-Mode X4 is intended to be used with cables of up to 3m in length. With longer cables, observe electrostatic discharge precautions when connecting or disconnecting them to avoid damage to equipment. Longer cables may also be susceptible to electromagnetic interference.
- Place the Anti-Mode X4 unit on a stable base. Keep the ventilation openings clear.

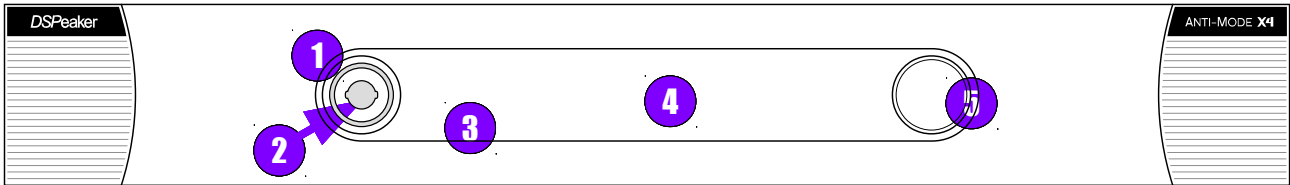


IMPORTANT: Before connecting the Anti-Mode X4 unit to mains voltage, check that the nominal voltage displayed on the back panel corresponds to the voltage used in your area!

Language Selection

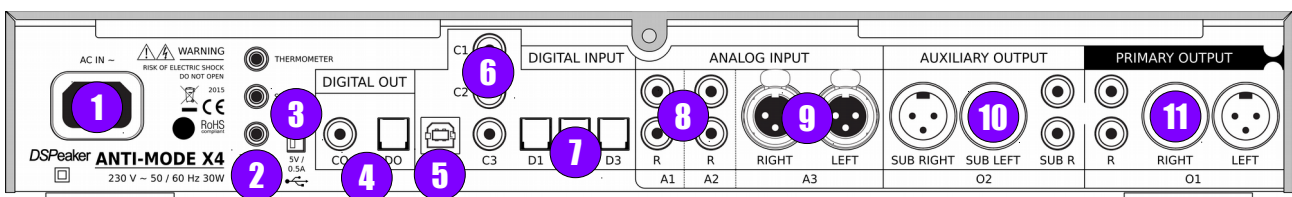
When the device is powered up for the first time, you are asked to choose a language. Use the control wheel on the unit to highlight the language of your choice and click the wheel button to select, i.e. press the control wheel towards the Anti-Mode X4 unit. If needed, the language can be changed later from the "System" menu.

Front Panel



- (1) Microphone connector - XLR with automatic insertion detection.
- (2) 6.3mm Headphone connector with automatic insertion detection.
- (3) IR receiver and stand-by indicator light. The indicator is lit during stand-by mode.
- (4) Display.
- (5) Control wheel and wheel button for menu control. Also see the remote control section.

Rear Panel



- (1) Power cable connector.
- (2) Thermometer, Service, and 12V Trigger output connectors.
- (3) USB host port for firmware update using a USB memory stick.
- (4) Coaxial and optical digital output connectors CO, DO.
- (5) USB audio connector for computer audio using USB A-B cable.

Notice: The X4 input must be selected to be USB for the computer to be able discover the device.

- (6) Coaxial digital S/PDIF inputs C1, C2, C3.
- (7) Optical digital S/PDIF (Toslink) inputs D1, D2, D3.

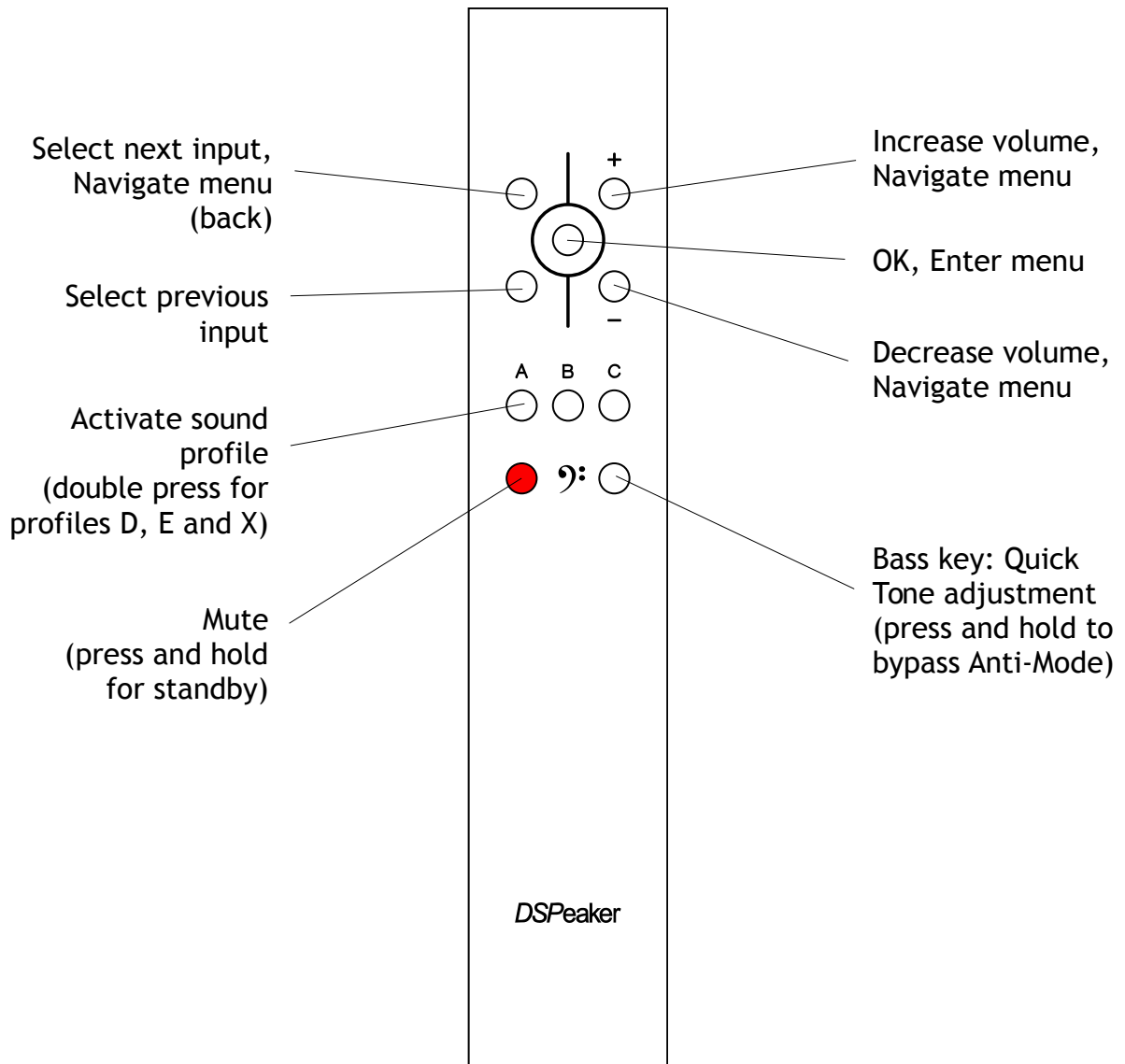
Notice: You can connect CD/DVD players, TVs, media servers, and other audio sources to the digital inputs as long as they provide uncompressed linear PCM audio. Compressed formats are not supported.

- (8) RCA Analog stereo inputs A1, A2. Left channel input at the top, Right at the bottom.
- (9) XLR Analog stereo input A3.

Notice: Choose the best input sensitivity for each analog audio source from the Input Menu.

- (10) Auxiliary XLR and RCA outputs O2 - both XLR and RCA outputs carry the same signal.
- (11) Primary XLR and RCA outputs O1 - both XLR and RCA outputs carry the same signal.

Remote Controller Overview



2. Basic Operation

Home Screen



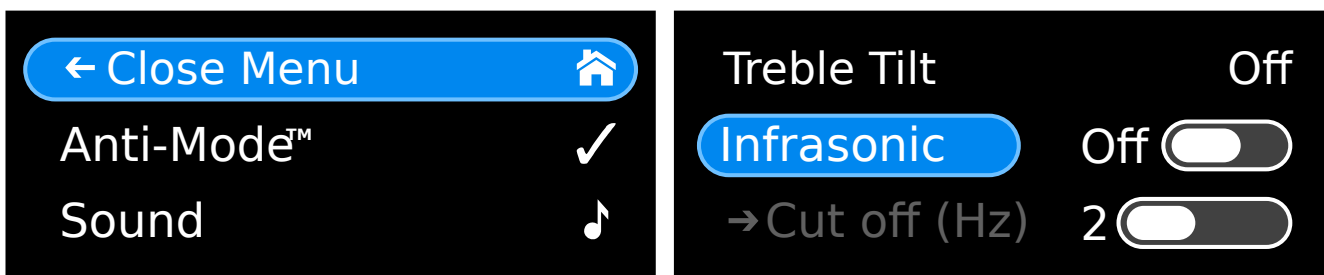
- A) Currently active input
- B) Active speaker configuration
- C) Status icons (Bass Tilt, Treble Tilt, PEQ)
- D) Input signal resolution
- E) Status icons (Infrasonic, HeaDSPace)
- F) Active sound profile

Main Menu

There are two ways to navigate the menus:

- Using the control wheel: Click the wheel button (push it towards the unit) to open the menu. Rotate the wheel to highlight the desired item and click again to select the item. Select the first (topmost) item to return to a previous level or to close the menu.
- Using the remote controller: Press the OK button (circled in the middle) on the remote to enter the menu. Use the volume up / down keys to highlight an item and press the OK button to select it. The next input key (top left) will close the current menu and return to the previous level.

Notice: some features in the menu may require the control wheel to operate. For example, zooming in/out in the frequency response viewer is not possible by using the remote.



3. Room Calibration

Anti-Mode X4 features a powerful and automatic calibration procedure which optimizes the response of the connected speakers and optional subwoofers, and the room, producing a combined response without undesirable peaks in the response.

During the calibration process Anti-Mode measures the acoustic environment by playing various tones through your audio system. This will take a few minutes to complete.

The measurement process is designed to be resilient against background noise, but it can be beneficial to choose a moment when the listening room is relatively quiet. It is also a good idea to turn off any noisy equipment such as air conditioning for the duration of the measurements.

Before the calibration

- Set up the supplied microphone stand. Attach the microphone to the stand and connect the microphone cable to the microphone. Adjust the stand so that the microphone is at the center of the primary listening location, at about ear height.
- If your system features subwoofer(s) that have adjustable low-pass filters, it is good to disable them, or set the cut-off frequency to their maximum value.
- Make sure your active speakers or power amplifiers and/or subwoofers are connected to the correct outputs and turned on.
- It is good to adjust the gain of all connected speakers so that the main speakers and subwoofers are approximately equally loud.

Running the calibration

- Turn on the Anti-Mode X4 unit, wait a few seconds until the boot sequence finishes.
- If you have not yet chosen a language, you are prompted to choose one now.
- Plug the microphone cord into the connector located at the front panel. The calibration menu opens automatically.
Notice: you can cancel the calibration at any time by unplugging the microphone cable.
- Select typical calibration from the menu by rotating the control wheel and click the wheel button when the item labeled “Typical” is highlighted.
- Rotate the wheel to select a speaker configuration that best matches the connected audio equipment. You can find more information about the calibration modes further in this manual. Click the wheel button to proceed.
- Adjust calibration volume by rotating the wheel or using the remote controller until the signal is clearly audible. Click the wheel button to start the calibration process.
- When the calibration process has finished, unplug the microphone.

Congratulations, your system has been optimized! Now it is a good time to put on some of your favorite music and enjoy the improved sound.

Notice: The automatic calibration process targets a balanced overall sound, with slightly elevated response towards the low bass region. The response can be adjusted in multiple ways to suit your personal taste. You can read more about sound profiles and shaping the sound next.

Changing the Active Profile

Sound profiles allow to store several sets of room measurement, correction, and user parameters. During the first calibration, the system automatically creates up to six different sound profiles. These profiles have individual sonic characteristics. You can switch between the profiles by pressing the A, B, and C buttons on the remote¹. A single press will activate one of the profiles “A”, “B”, or “C”. A double press will activate one of the profiles “D”, “E”, and “X”. You can also activate a profile by navigating to the “Sound Profile” section in the Main Menu.

Using Sound Profiles

If you find a preset that you like, you can replace any other profile with it by navigating to “Profile” section in the main menu. Any user-made sound adjustments will only apply to the currently active profile and are saved to that profile. If you wish to use different settings for different scenarios (for example, “classical music”, “home theater mode”), you can create a profile for each of these.

Tip: Different profiles are represented by different colors throughout the interface. It is possible to customize these colors by navigating to “Screen” section of the Main Menu.

Multiple Calibrations

You can optimize for a different listening location by first activating a sound profile and then performing the calibration procedure. The new calibration will override parameters that are related to Anti-Mode™ correction, but keeps other settings intact.

Notice: Only the initial calibration affects all six profiles. If you want to populate all six profiles again, select “Factory Reset” from the main menu. However, be aware that a factory reset will clear all data stored in the memory!

Quick Tone

Quick sound adjustments can be made using the Quick Tone tool. Press the Bass key on the remote to access the Quick Tone feature¹. Then, use the profile keys (A-C) to select a property to adjust. Possible controls are: bass “A”, full spectrum tilt “B”, and treble “C”. Then use the Up/Down (“input switch”) keys to adjust it.

Tip: Quick Tone adjustments are shortcuts to Bass Tilt and Treble Tilt features that can be found in the main menu as well. From the main menu interface you can adjust the frequency range which the filters operate on.

¹ Function only available at the home screen

Bypass Mode

Press and hold the Bass key² to enter the bypass mode. In this mode, Anti-Mode room correction is not in effect. However, note that some enhancements made by the system are still in effect despite the bypass mode (crossovers, speaker level matching, etc).

Press any button to leave the bypass mode.

Mute, Standby Mode

Audio output can be muted temporarily by pressing the red button on the remote¹. To conserve power, the system will automatically enter the standby mode after some time has elapsed while muted. This also means that it is enough to press the red button shortly to end a listening session.

Press and hold the button for a short while to enter the standby mode immediately.

While muted, press the red button again to unmute.

While in standby mode, press the red button or press / rotate the control wheel to turn on the unit.

Shaping Sound: Bass Compensation

Bass compensation control can be found in the “Anti-Mode” section of the main menu. Adjusting Compensation will affect the low frequency range that has been corrected by the Anti-Mode algorithm. Room modes typically dominate low frequencies. When Anti-Mode removes the modes, the resulting sound may appear too “bright” on occasion. Bass compensation allows the user to conveniently shape the bass response to suit their personal taste.

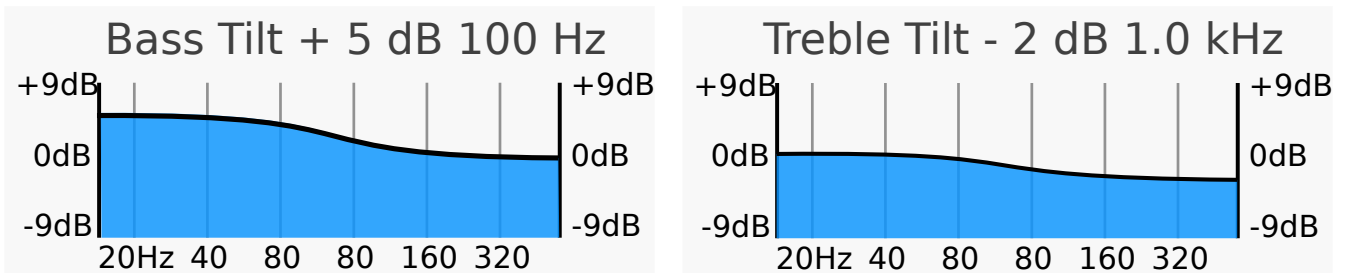
Notice: to have more control over the shape of the target response, Bass Tilt or Parametric EQ can be applied in addition.

Shaping Sound: Bass Tilt

Bass tilt controls can be found in the “Sound” section of the main menu. Bass tilt is a powerful shelf-type filter that can be applied to shape the target response at low frequencies. It has two parameters: gain and bandwidth. The parameters can be adjusted with the control wheel (hold down and rotate the wheel to adjust bandwidth) or using the remote controller. Profile buttons A and C will adjust the bandwidth. The effect of the filter can be heard in real-time.

To turn off bass tilt, simply set its gain to + 0 dB.

² Function only available at the home screen



Shaping Sound: Treble Tilt

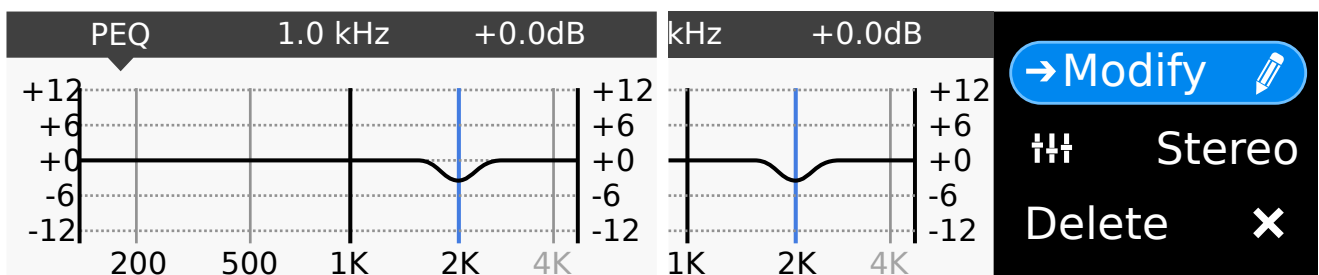
Treble tilt controls can be found in the “Sound” section of the main menu. Treble tilt is a powerful shelf-type filter that can be applied to shape the target response at high frequencies. It has two parameters: gain and bandwidth. The parameters can be adjusted with the control wheel (hold down and rotate the wheel to adjust bandwidth) or using the remote controller. Profile buttons A and C will adjust the bandwidth. The effect of the filter can be heard in real-time.

To turn off treble tilt, simply set its gain to + 0 dB.

Shaping Sound: Parametric Eqs

Anti-Mode X4 supports up to nine fully parametric EQ filters (PEQ) that can be placed at arbitrary center frequencies, using variable bandwidth and gain. An EQ can be set to affect both channels (the default) or either left or right channel separately.

Notice: while PEQs can be used to shape the system response at a very fine level, correcting small bumps manually after the calibration is typically not advisable. Striving for maximally flat curve in amplitude response might induce audible problems in the time domain, something that might not be apparent in the measured response. We suggest applying parametric equalizers with moderation. Not all dips in the response can or should be corrected!



4. Calibration and Measurement Details

When you plug in the microphone cable, Anti-Mode X4 enters the calibration and measurement mode. Follow the screen to guide you through the calibration or measurement process. Press OK or the wheel button to step through.

Connections and pre-calibration settings

SPEAKER CONFIGURATION

First define your speaker setup. A normal stereo system with two speakers and no subwoofers is referred to as a "2.0" system. The speakers should be connected to the Primary outputs (XLR, RCA, or a digital output).

A "2.1" system has also a single subwoofer. The speakers should be connected as above, and the subwoofer to either left or right Auxiliary output (XLR or RCA).

A "2.2" system has two speakers and two subwoofers. The connections are as above, but subwoofers are connected to both left and right Auxiliary outputs (instead of one).

If you have only subwoofers to connect, you can choose the "0.2" configuration. In this case, connect the subwoofers to the Primary outputs.

Anti-Mode X4 incorporates a patented automatic cross-over optimization system. When normal calibration is chosen with "2.1" or "2.2" system, this optimization system measures the audio reproduction parameters of the subwoofers and speakers and uses that information to form a digital cross-over network that maximizes the integration of the speakers and subwoofers while minimizing the overall distortion of the system.

VOLUME LEVEL DETECTION

Before Anti-Mode™ calibration performs its measurements, the measurement level must be adjusted by the user. Thanks to a very robust measurement method, the system response can be obtained at even very low signal levels. However, too low signal levels may result in errors in the results when air-conditioning and other stationary sounds have more opportunities to affect the measurement.

To make finding a suitable level easier, two indication lines are presented on the screen: Minimum (Min) and Good. The microphone pickup level is indicated by a white horizontal bar emerging from the left of the screen. Make sure your speakers and subwoofers (if any) are active, then gradually increase the volume using the Volume + and Volume - buttons on the remote or from the control wheel so that the generated test noise is properly audible. Increase the output volume until the level indicator is between the Min and Good bars. However, it is not always necessary to exceed the Min bar.

If the sound is audible, but the indicator is not moving at all, please check the microphone connections and do not proceed until this issue has been solved and the indicator bar is moving according to sound level.

Using a higher level for measurement can produce a more accurate room response, but too high level could cause clipping of the signal in some part of the system. Therefore it is not recommended to exceed the Good level.

Note that the level of the calibration can affect the automatic cross-over designer as it will also measure the distortion characteristics of the speakers and subwoofers. It is recommended to use a volume level that resembles the normal listening volume level.

After adjusting the level, press OK or click the wheel button to start calibration.

The calibration performs multiple measurements depending on the system configuration. This will take several minutes. You can leave the room, but do not open or close doors or windows during measurements.

After all measurements are finished, you are prompted to unplug the measurement microphone. Remove the microphone and you are able to view the calibration results.



FOR BEST RESULTS: When calibrating a system with subwoofers, set the built-in lowpass filters of the subwoofers to bypass or to the highest available cutoff frequency.



PLEASE NOTE: After Anti-Mode gets rid of room resonances, it may appear that the result sounds good but is lacking in bass. One possible reason is that the listener has grown used to the exaggerated bass response caused by room resonances.

If you feel that you need to increase the overall bass level, you can do this using the Compensation Gain setting or using Bass tilt.

Advanced Calibration

In the advanced calibration mode you have control over all of the parameters.

When choosing a 2.2 system (whether speakers and subs or 0.2.2) you can set the cross-over frequency between 20Hz and 1540Hz. You can also adjust the other parameters: Q value, filter order, and also the amount of cross-over overlap.

Advanced calibration mode also allows to choose "0.4" for four subwoofers - connect two subwoofers to the primary and two subwoofers to the auxiliary outputs.

Measure Only

Like its name suggests, "Measure Only" allows you to perform a user measurement without affecting an existing Anti-Mode calibration. By default the measurement is performed with Anti-Mode correction enabled and in stereo mode. You can change these defaults from the "Bypass AM" and "Channel" entries in the measurement menu. You can perform a primary and secondary measurements, and both can be viewed on the Anti-Mode screen.

PRIMARY

Perform a baseline measurement.

SECONDARY

Performs a comparative measurement. The results of Primary and Secondary measurements can then be viewed together.

The secondary measurement is performed with the same volume setting as the primary measurement. To start the measurement, increase the volume using the remote or the control wheel until the same volume as in the primary measurement is reached.

You can abort both primary and secondary measurement by detaching the microphone cable from Anti-Mode X4.

BYPASS AM

Enables or disables Anti-Mode correction during the measurement.

CHANNEL

Choose Stereo, Left, or Right channel(s) for measurement.

5. Menu Details

Anti-Mode™ Settings Menu

COMPENSATION GAIN

"Compensation Gain" compensates for the overall difference in bass energy when peaks in response are removed. This is a matter of personal preference, so this setting is the first to adjust if after calibration you perceive too much or too little bass. The frequency limit for the compensation filter is dependent on the correction limit, but it doesn't exceed 500Hz.

CORRECTION RANGE

"Correction Range" sets the frequency limit for the automatic Anti-Mode™ correction. Frequencies above the limit are not altered. At any time after calibration, the correction range can be changed to your preference. A new correction is created from the stored measurement data of the current profile without needing to measure again.

VIEWING ROOM RESPONSE AND CORRECTIONS

"Before / After" and "User Measurements" show the measured room responses, if they have been measured for this profile. You can scroll the cursor with remote or using the control wheel, and zoom the response by rotating while keeping the wheel button pressed.

SMOOTH GRAPH

"Smooth Graph" configures whether smoothing is applied when displaying responses. Having smoothing on is usually appropriate when considering how the response sounds to the human hearing, especially at the higher frequencies.

Sound Menu

BASS TILT, TREBLE TILT

Bass tilt provides the user with a shelf-type filter to increase or decrease bass. Use the control wheel to adjust the gain, with the wheel button pressed you can adjust the frequency. You can also adjust the gain with + and - of the remote, and the frequency with the A and C profile buttons.

Treble tilt works in the same way as the Bass tilt, but for the treble frequencies.

INFRASONIC

The very lowest frequencies can be eliminated from the output by using the infrasonic filter. When enabled, the cutoff frequency can be adjusted from 2Hz to 200Hz using its own menu item.

DAC FILTER

DAC Filter chooses between Normal (linear-phase) and Soft (minimum-phase).

USER EQ

With the User EQ tool you can create your own fully parametrizable filters. But be careful, a straight amplitude response may not behave so nicely in the time domain!

HEADROOM

Headroom defines how much reserve to keep in calculation to be able to boost frequencies without the signal becoming saturated.

Reducing headroom may allow higher maximum output volume. However, digital clipping may occur if too many boosting filters are used without sufficient headroom.

CH BALANCE

If you have an asymmetric listening position or speaker locations, channel balance adjustment may be needed for the channels to appear equal loudness.

SUB LEVEL

If the calibration included subs, their volume relative to the speakers can be adjusted manually.

MONO SUBS

Sets the system to use the same signal for both subs.

Headphones

When headphones are inserted, audio output is only generated to the headphones. When headphones are detached, the output switches back to the primary and auxiliary outputs. Headphone-related functions are only available when headphones are inserted.

VOLUME

When the headphone output is in use, both the control wheel and the volume buttons of the remote controller adjust headphone master volume.

HEADPHONE PROFILES

Headphone profiles "H" and "P" are used when the headphone output is in use. These profiles can have different settings as well as their own set of tone controls.

Headphone Menu

HP ENABLE

This feature enables the user to keep headphones connected at all times and select from this menu whether to listen to the speaker system or the headphones.

By default, the speaker outputs are muted upon connecting the headphones to the 6.3mm headphone plug on the front panel. When HP Enable is set to off, the headphones can be connected while the sound is coming from all of the outputs and the speaker profiles are active. The headphone is muted until HP Enable is switched back on, then the sound goes to the headphones and headphone profiles are active.

HEADSPACE

Listening to mono recordings or old stereo recording which pan instruments completely into one channel can lead to listening fatigue.

Headspace is an upgraded version of a "cross-feed" processing, and utilizes modern DSP processing of the Head-Related Transfer Function (HRTF) based on human directional hearing. It drastically improves recordings which are optimized for speakers only. The amount of effect can be adjusted by the Render setting or switched off completely.

VOLUME CAP

Volume cap limits the maximum volume you can set for the headphone output to protect your hearing. Setting a suitable Volume Cap is advisable especially if you have sensitive headphones, i.e. they produce high sound pressure with low power. In addition, if the volume would be changed by more than 4.0dB, the volume change is ignored.

System Menu

The system menu gives control to various system-level settings.

BLUETOOTH

Enabling Bluetooth allows the [Bluetooth Remote for Anti-Mode™](#) to connect and control the unit.

INFORMATION

You can see the firmware version here.

AMPLIFICATION MODE

The pre-amplifier has two amplification modes, normal and max. In Maximum output mode, the output voltage level is higher than in normal mode. The normal mode is enough for most systems. Only use Max output if the rest your system can accept the higher levels. The amplification mode affects both XLR and RCA outputs.

Typical maximum output	Normal	Maximum
RCA	3.2 Vrms	6.4 Vrms
XLR	6.4 Vrms	13.0 Vrms

See "Input" menu for input voltage range adjustments.

The digital outputs reproduce the same signal than the Primary analog output. The coaxial and optical digital outputs follow the timing of the audio input, thus not requiring asynchronous sample rate conversion (ASRC). The optical output can only reliably carry up to 96kHz rates, thus 176.4kHz and 192kHz input rates are downsampled to 88.2kHz and 96kHz respectively, for both the coaxial and optical outputs (still without needing ASRC).

AUTO STANDBY

If there is no analog signal, or no digital signal (symbol "--.--" shown in the display) for about 30-40 minutes, the unit automatically switches to standby.

SCREEN SETTINGS

This menu allows to adjust the LED backlight intensity of the screen as well as current color scheme associated to the active profile. Different profiles can be given different color schemes in order to help distinguishing them from each other.

LANGUAGE

This menu lets you change the language.

FACTORY RESET

Resets settings of the unit to factory defaults.

Profiles

SPEAKER PROFILES

The unit consists of 6 individual sound profiles, which all have their own memory. They can be used to create different tonal controls over the same room correction. Alternatively, they can be completely different calibrations of different systems.

Note that some settings are stored globally instead of per profile, such as Master volume, selected input, input trim, and others that are related to the connections or hardware settings in general.

HEADPHONE PROFILES

Headphone profiles are in use when the headphones are connected and active.

Input Menu

If the remote control is not at arm's length or has run out of battery, you can switch the input using the control wheel. The Input menu also provides other controls related to audio sources.

INPUT SENSITIVITY

All three analog inputs have variable input voltage ranges. You can set the voltage range of each analog input independently between three alternatives: Normal, More, and Maximum sensitivity.

Maximum input	Normal	More	Max
RCA - Analog 1 & 2	6.2 Vrms	4.4 Vrms	2.5 Vrms
XLR - Analog 3	12.4 Vrms	5.2 Vrms	2.6 Vrms

Normal is the default and the least sensitive input range, allowing the highest input voltage without the signal being clipped. If you connect a CD or DVD player using an RCA, switching to Maximum sensitivity should give you enough input range and produces the best results.

See "System" menu for output voltage range adjustment.

VOLUME TRIM

To reduce the need to adjust Master volume when switching between inputs, each input is associated with a volume offset value called input trim. The trims adjust the relative volume of each input so that they produce approximately equal levels at the output. Use Volume Trim only if changing the Input Sensitivity isn't enough!

EXTRA USB SETTINGS

Legacy USB: Anti-Mode X4 connects to a computer or other USB host with a USB A-B cable through the audio USB connector. If the connection supports High-Speed USB (480Mbit), Anti-Mode X4 appears as a USB Audio 2.0 device, and supports sample rates above 96kHz, and also provides high enough bandwidth for DSD64 and DSD128 using the DSD over PCM protocol.

If your computer does not support USB Audio 2.0, for the Windows operating system you can download the DSPeaker Anti-Mode X4 driver from www.dspeaker.com, or you can activate the Legacy USB mode. In this mode Anti-Mode X4 appears as a USB Audio 1.0 device. You can also use this mode with Windows, if you don't want to install the driver and don't need the higher datarates. If the USB host only supports Full-Speed USB (12Mbit), Anti-Mode X4 appears automatically as an USB Audio 1.0 device.

PC Volume: By default you control Anti-Mode X4 volume from the unit itself using the remote or the control wheel. By enabling PC Volume, when the USB input is selected, volume will be exclusively controlled by the PC volume control.

6. Firmware update

The firmware of Anti-Mode X4 is updated using an USB memory stick.

- Format the USB memory to FAT format, if it isn't already. It is beneficial to format it regardless to get rid of unrelated data.
- Download the firmware file (FIRMWARE.X4) and copy it to the USB memory stick in its root directory.
- Put the Anti-Mode X4 unit to standby by using the remote.
- Attach the USB stick to the "SERVICE" USB port on the rear panel of the X4.
- Turn on Anti-Mode X4 by the remote or using the control wheel and wait until the system automatically installs the firmware. Alternatively, switch off and on by disconnecting and connecting the power cord. If this doesn't work, reset the unit to factory settings from the System menu (you'll lose all of your settings).
- While the update is in progress, there is an hourglass image on the screen. Do not remove the USB stick during the process. After finishing installation the system reboots, and the home screen is displayed.
- Now the USB stick can be removed.

If any problems are encountered during the install, there is an image of a moving USB stick on the screen. In this case, make sure the USB stick is properly connected and contains the firmware file before trying again. If the problem persists, try downloading the firmware file again on a different USB memory stick.

The firmware is not updated if the unit already contains the same version of the firmware. In this case, after checking the contents of the USB stick the unit will start normally.

Some USB memory sticks may not be compatible with the update.

Some USB memory sticks are formatted with the XFAT filesystem, which is not supported.

Maintenance and Service Instructions

Keep the unit free of dust and liquids. There are no user-serviceable parts inside.

Any maintenance and service that requires opening the unit must only be performed by an authorized qualified skilled person.

- **CAUTION:** The internal fuse (Glass 5x20mm 500mA 250V Slow) is only replaceable by a skilled person.
- **CAUTION:** The LR44 battery inside the unit is only replaceable by a skilled person. Risk of explosion if the battery is replaced by an incorrect type.
- **CAUTION:** Anti-Mode X4 contains a voltage-setting device that is operable only by a skilled person. When changing the voltage setting, the indication of the voltage setting on the unit shall also be changed accordingly.

Replacing the Remote Controller Battery

The Infra-red remote control uses a CR2032 battery. To replace the battery, open the five hex screws that hold the back panel in place to gain access to the remote control assembly. Slide out the battery from its holder and replace with a battery of the same type in the same orientation. Then, place the remote control assembly back to the remote control enclosure and close the back panel with the screws at appropriate tightness.

If the remote control's back panel does not close properly, stop using the remote and keep it out of reach of children.

7. Manufacturer



VLSI Solution / DSPeaker
Hermiankatu 8
FIN-33720 Tampere
FINLAND

Email: info@dspeaker.com

Contact

Website: <http://www.dspeaker.com/>

Technical Support: support@dspeaker.com

Sales Support: info@dspeaker.com

8. Technical Specifications

Interfaces

- Two analog stereo RCA inputs and one analog stereo XLR input
- 3 optical and 3 coaxial S/PDIF digital inputs
 - 16 to 24 bits 44.1 / 48 / 88.2 / 96 / 176.4* / 192* kHz *coaxial
- USB Audio input
 - USB Audio 2.0 ¹ (up to 192kHz stereo 24-bit PCM, DSD64 / DSD128 using DSD over PCM)
¹ Driver may be needed for Windows, available from dspeaker.com
 - USB Audio 1.0 up to stereo 24-bit 96kHz (Legacy USB)
- Primary output: stereo RCA, stereo XLR, optical Toslink, and coaxial S/PDIF
- Auxiliary output: stereo RCA, stereo XLR
- Microphone input / Headphone output
- 12V Trigger voltage output
- Input for optional thermometer, Service connector, USB for firmware update
- Control wheel with a button, IR Remote control (controller included)

Analog Specifications (typical)

Choose the best input sensitivity for each analog audio source from the Input Menu.

- Analog output, Primary XLR, SNR+THD: -104dB, Dynamic Range: 120dB
- Analog output, Primary XLR, THD: < 0.0008%
- Analog Input, XLR, SNR+THD: -104dB
- Frequency Response (analog to analog): 5Hz to 45kHz (20Hz to 20kHz ±0.1dB)
- Input Voltage maximum RCA: 2.5 / 4.4 / 6.2 Vrms, XLR: 2.6 / 5.2 / 12.4 Vrms
- Output Voltage RCA: 3.2 / 6.4 Vrms (max), XLR: 6.4 / 13.0 Vrms (max)
- Power consumption: active 25W, stand-by: < 0.5W

Firmware Highlights

- Anti-Mode 3.0 room calibration algorithm
- Automatic cross-over frequency optimization for speakers and subs (US Pat 9955261, EP3193514)
- Extensive tone controls and user-defined parametric EQs
- Headspace externalization for headphones
- Firmware update using a USB memory stick

Mechanical

- Unit Color Options (front panel): Black and Silver
- Unit Weight: 4.5kg
- Unit Dimensions: 436mm (width) x 70mm (height) x 295mm (depth, without cables)
- Microphone stand and measurement microphone included