ARENDAL®

1961

SUBWOOFER

HANDBOOK



1961

WELCOME TO ARENDAL - WHERE SOUND COMES FIRST



STORY OF ARENDAL
1961 SUBWOOFERS
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ARENDAL® | 1961 SUBWOOFER

BUILDING BRIDGES

Being our entry-level subwoofer range, there is nothing about our brand new 1961 Subwoofers performance or build quality that would suggest it being so. HDF cabinets with Premium painted matte finishes and magnetic grills, to mention couple.

Using our newly designed proprietary 12.2" driver, driven by the unique 550W RMS Avalanche 550 IQ DSP smart amplifier, dynamics and performance is stellar. The HDF cabinet volume has been sized to produce an optimally damped system, producing low distortion, extremely dynamic and natural deep bass. Using many of the same features from 1723 series, you can be sure this subwoofer packs extreme amounts of listening pleasure regardless of its price point.

Our Avalanche 550 IQ smart amplifier marks a new era in terms of adjustability, versatility and not mention the dozens of sensor technologies which makes sure signal quality and performance are world class which.

High performance in a compact design – conceived as a smaller subwoofer that will fit any living room decor, you will be amazed how large a room 1961 Subwoofer 1S will be happy driving.

1961 Subwoofer 1V breaks all standards when it comes to performance. 1961 Subwoofer 1V is simply put a 1961 Subwoofer 1S on steroids. Bigger and vented. 1961 Subwoofer 1V can deliver massive performance on movies, with real attention to detail and nuance in music. Movies or music. Perfect for both.

Expect nothing less from an Arendal Sound product.

1961. Building bridges.
Premium products for everyone.

STORY OF ARENDAL

I was born and raised in Arendal 1978, Norway. As a kid I enjoyed many activities, such as catching fish for my cat Johnas, riding my bike, playing football and video games, and hanging out with friends. Of course not a day went by without wrestling with my older brother Dan Benny.

My dad, Jan, founded an electronic store in the 70´s and it quickly became the top selling store of it's kind throughout Norway. On a good Saturday it was not unusual to sell 40-50 color TV's, which were hot tech at the time. Today he spends his elder days as a fisherman, just like my grandfather Olav before him.

During my younger days there was rarely a weekend when I was not (somewhat reluctantly!) dragged out of bed on a Saturday morning to help sell my grandfather's catch from the night before to the neighbourhood. I was often told "your grandfather has caught a lot of fish, you need to help him sell it". Dragging all the fish with me, I walked several kilometers and knocked on many doors utilizing some maybe desperate sales tactics to charm the older ladies. My customers may have felt sorry for me seeing me walk around with fish, but I was able to sell them and returned home with pockets full of money. My grandfather gave me a cut of the sales so I could buy candy and save the rest in order to purchase more audio products. These were some of the best memories of my childhood.

As you may have guessed, I was introduced to the audio world at a very early age. When I turned 14 I started to work part time at my dad's store. When your hobby is electronics and you work in such an environment you get the urge to purchase and test as many products as you can, which I did with great joy. Normally, instead of a paycheck, I brought home new speakers or amplifiers that had to be tested. My very first setup was a stereo system with some huge speakers which could play very loud. It was hugely annoying to my mother. Does that sound familiar?

It's one thing to have fun with audio equipment, but another very different thing to understand it. I studied electronics for 8 years, graduated from Grimstad with an engineering degree and was lucky enough to get a job in the oil industry. After working in the oil industry for a while, I knew that it wasn't the field for me. Audio was my passion and that's what I wanted to work with.

With 15 years of business experience in the audio industry and after shipping tens of thousands of audio products throughout Europe and beyond, I wanted something else. Something of our own which had been lingering in the air for many years. At our 10th anniversary, what better way to celebrate and continue the story, than with the release of our own speaker brand?

The idea of Arendal Sound was born.

It was no coincidence. We've spent years researching, listening to our customers, planning, developing, engineering and investing in Arendal Sound. I always wanted our team to have something to be extraordinarily proud of and enthusiastic about. It had to be something that was based on solid acoustic engineering principles and yet aesthetically beautiful, surrounded by a unique story - ours. Arendal Sound builds upon traditional and historic Norwegian elements, where solid craftsmanship and finish quality are a top priority, backed with pleasure in the use and pride in the ownership. We even want to show our beautiful country to our overseas customers and invite them to Norway.

We are a family and team with the same mentality and goal, to create market leading products, packed with incredible value, backed with our highly acclaimed customer support that extends beyond the date of purchase.

To me, business comes second and at the end of the day, it's my family who are most important. Without them it would have been hard. I would especially like to thank my wife, Heidi, as she has been by my side all this time showing extreme patience and understanding. And of course my two little kids, Marcus and Leander, they are the dessert in life as my mom and dad say.

We hope you will enjoy our products as much as we enjoyed making them.



Jan Ove Lassesen
Founder of Arendal Sound




1961
SUBWOOFER



1961

SUBWOOFER 1S

BLACK MATTE





WHITE MATTE

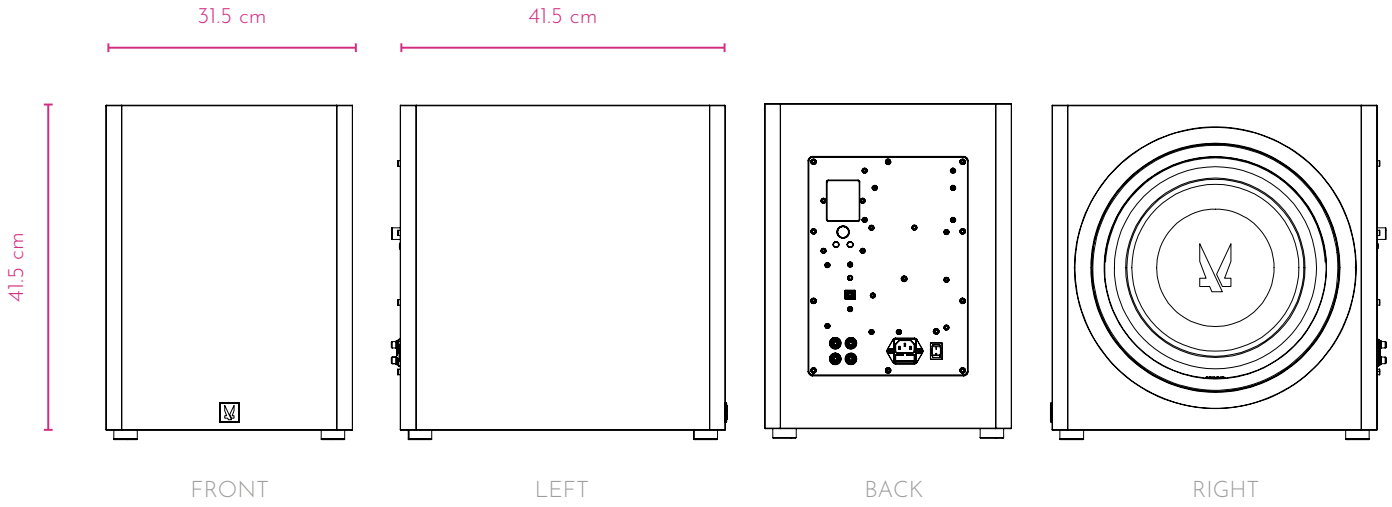




SPECIFICATIONS

Being our current entry-level subwoofer, there is nothing about 1961 Subwoofer 1S performance that would suggest it being so. Using our proprietary 12.2" driver driven by our unique 550W RMS Avalanche 550 IQ DSP amp, the cabinet volume has been sized to produce an optimally damped system, producing low distortion, extremely dynamic and natural deep bass. Using many of the same features from 1723 series, you can be sure this subwoofer packs extreme amounts of listening pleasure (and pressure..) regardless of its price point. Conceived as a smaller subwoofer that will fit any living room decor, you will be amazed how large a room 1961 Subwoofer 1S will be happy driving.

WOOFER	**12.2"**
ENCLOSURE	**Sealed**
ENCLOSURE MATERIAL	**High Density Fiberboard (HDF)**
AMPLIFIER	**Avalanche 550IQ, 550W RMS**
POWER CABLE	**1.5 meters**
FREQUENCY RESPONSE	
EQ1	**19-200Hz (+/-3dB)**
EQ2	**26-200Hz (+/-3dB)**
DIMENSIONS WITHOUT FEET	**41.5H x 31.5W x 41.5D cm**
DIMENSIONS WITH FEET	**42.7H x 31.5W x 41.5D cm**
WEIGHT	**20.0 kg**
BREAK-IN FOR OPTIMAL PERFORMANCE	**50 hours**





1961

SUBWOOFER 1V

BLACK MATTE





WHITE MATTE

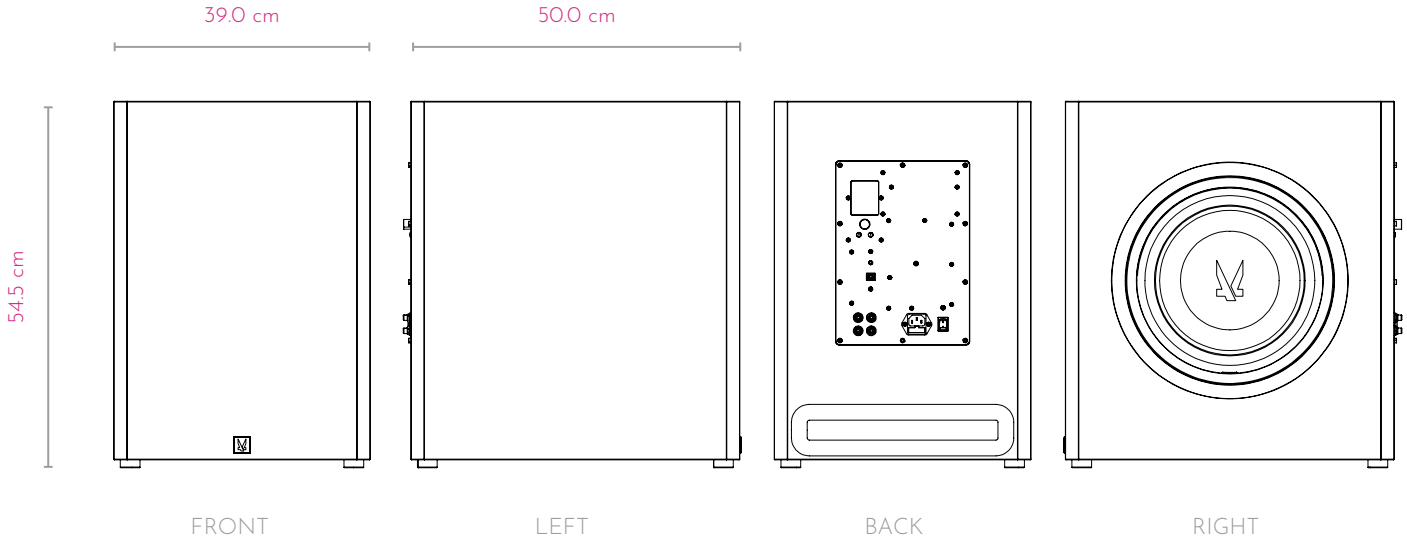




SPECIFICATIONS

The 1961 Subwoofer 1V is simply put a 1961 Subwoofer 1S on steroids. Same solid HDF enclosure but larger and equipped with a high precision slot port. Using our proprietary 12.2" driver driven by our unique 550W RMS Avalanche 550 IQ DSP amp, the cabinet volume has been sized to produce an optimally damped system, producing low distortion, extremely dynamic and natural deep bass. Using many of the same features from 1723 series, you can be sure this subwoofer packs extreme amounts of listening pleasure (and pressure..) regardless of its price point. The enclosure is ported, which can also be sealed for those who wants the edge in extra dynamics over sheer depth. 1961 Subwoofer 1V can deliver massive performance on movies, with real attention to detail and nuance in music. Movies or music. Perfect for both.

WOOFER	**12.2"**
ENCLOSURE	**Vented**
ENCLOSURE MATERIAL	**High Density Fiberboard (HDF)**
AMPLIFIER	**Avalanche 550IQ, 550W RMS**
POWER CABLE	**1.5 meters**
FREQUENCY RESPONSE	
EQ1	**16-200Hz (+/-3dB)**
EQ2	**20-200Hz (+/-3dB)**
DIMENSIONS WITHOUT FEET	**54.5H x 39.0W x 50.0D cm**
DIMENSIONS WITH FEET	**55.7H x 39.0W x 50.0D cm**
WEIGHT	**36.1 kg**
BREAK-IN FOR OPTIMAL PERFORMANCE	**50 hours**







AVALANCHE 550IQ AMPLIFIER

- Revolutionary Smart amplifier

"Revolutionary" is rarely used in the audio industry, especially for speakers and subwoofers. The new Avalanche 550 IQ subwoofer amplifier from Arendal Sound is one exception, measured in performance and technology. State of the art amplifier designed and developed from scratch to give performance and features you could only ask for at much higher price levels.

Research and development over two years, fully customized by Arendal Sound. The 550 IQ is a beast of an amplifier.

We welcome the Avalanche 550 IQ amplifier.

Highlights:

- Hi-res 1.8" LCD display
- Revolutionary smart subwoofer amplifier
- Full 550W RMS down to 10Hz
- Extensive multi sensors to protect and preserve signal quality
- Safety controls



Smart Technology

"Smart" or "intelligent" is also rarely used for subwoofers. The 550 IQ boast killer performance and has features under the hood no one else in the industry has seen before.

Avalanche 550 IQ has some serious technology to offer. Multiple sensors in the digital and analog domain from inputs to outputs to preserve dynamics and clean bass. It has a powerful microcontroller (MCU) which is the brain that controls and reads all data that passes the signal flow. To make sure the signal is as untouched as virtually possible, from its original source to the output from the subwoofer.

550 IQ controls

- Over/under voltage safeties on its power supply inputs (coming from your power socket) and amplifier output stage
- Thermal variations throughout the complete amplifier
- All signal processing such as conversions
- EQ filters
- Multiple limiters
- Display interface for the 1,8" LCD
- Multi control buttons
- And more

Subwoofer amplifiers will never be the same again...



12,2" WOOFER

Why 12.2"?

It was only natural to make the less expensive 1961 series with a smaller driver than that of its bigger brother the 1723 series with their 13,8" drivers. We still wanted to have a slight edge over conventional 12" drivers in terms of surface area so we created a 12,2" driver which requires less excursion and power to achieve the same SPL levels as a standard 12". The result is lower distortion, higher power handling and most importantly - tighter bass. Every part for this driver has been customized to deliver high output, low distortion, accurate bass.

Design features

Ultra-high temp polyimide former with aluminum wire voice coil for low mass, high motor force and optimal thermal dissipation.

Benefits:

- Aluminum wire has very low weight compared to Copper
- Ultra-high temp Polyimide prevents insulation

After thorough optimization and testing (using FEA, Klippel and other methods) we refined a motor featuring multiple aluminum shorting rings with focused field "T" pole design. The result is a linear magnetic field over a long voice coil throw, with very low inductance and stable function at higher power.

The symmetrical suspension consists of a heavily analysed isoprene surround and Connex spider with integrated tinsel leads. All combined to create a very high excursion with linear suspension. Again, contributing to high output and low distorting accurate bass.

Our cone consist of long fiber pulp that has a superior stiffness to weight ratio to deliver a properly self damped driver. The result is a cone that achieves optimal pistonic motion at all frequencies it is asked to produce and beyond.

The entire moving assembly is designed to have the lowest possible weight while still achieving the desired frequency rolloff. A lower total moving mass combined with low inductance typically lends itself to having better transient response, dynamics, "slam" and "impact".

Air flow venting underneath the dust cap (vents in cone body) and spider (vents in frame) are added for two very important reasons. Air heated by the voice coil is forced away with each stroke of the cone diaphragm. This continuous exchange of air mitigates thermal compression and increases the woofer's overall power handling capability. Second, the airflow relieves asymmetric compliance (suspension stiffness) and noises (ie, distortion) due to non-linear compression and rarefaction of air typically trapped under the dust cap and spider. Typical, vented pole designs will be

limited in effectiveness due to the lack of airflow volume - At the highest power and excursions, where free, smooth airflow is needed most, the pole vent alone is not sufficient.



PLACEMENT & SETUP

Everyone loves good quality bass as it makes the reproduction of sound feel natural and full. Bass rhythm and timing are critical foundations of music and movie soundtracks. The subwoofer, (bass speaker) is a low- pressure inducing device that radiates low frequency sound (bass) within your system. Arendal Sound subwoofers sound better than most, and this is before factoring in the
value to cost ratio. But if you want to take your low- frequency experience a few notches higher, you will need to experiment.The placement of the subwoofer(s) within the room can "make-or-break" your speaker system performance. A poorly positioned subwoofer will deliver uneven, sluggish, and dampend bass response that will not sound natural. The purpose of this guide is to help you get your subwoofer placed in the correct position within the room and configure it for the best possible bass
performance.

As previously mentioned, the performance of a subwoofer is intricately linked to the room in which it sits, therefore it is impossible to optimize the subwoofer without considering the room and its influence on sound. This room influence can be described in two points:

- The structure of the sound waves reflected within the room and how they super-impose on top of each other to deliver excessive (peaks) at certain frequencies (making bass sound boomy), at the same time causing total cancellations at others (nulls - making bass sound anemic or thin). This is called Room Modes.

- The second is the room's ability to absorb bass sound waves (or as you will hear it, allowing bass to leak out) through flexible structures like stud walls.

Essentially, every room is different and that's why ultimately there is no one-size-fits-all approach to subwoofer integration. The following recommendations are relative and it will always depend on your individual circumstances. Once you find the optimal spot to place your subwoofer(s) it will be time to run your room correction software.

Single Subwoofer

Corner placement
The easiest way to begin positioning the subwoofer in the room is to place the subwoofer towards one of the front corners, preferably one that does not have any openings near it. Having the subwoofer in a corner will give you the
best room coupling and gain, increasing the

apparent bass output and impact (corner loading). You may not want all of the output generated by this type of placement, however you can always attenuate the subwoofer and as a result, enjoy increased dynamic headroom and lower distortion. Adding to that, this placement greatly simplifies the structure of room modes (the peaks and nulls the overlapping bass waves produce), meaning your AVRs room correction software can easily EQ the peaks for smoother frequency response.

Subwoofer crawl

This technique can help you easily find a suitable location for the subwoofer without dragging the subwoofer throughout your room. Instead, place the subwoofer at your main listening position at ear height. This may take a longer signal cable and extension power cable to do this method and also please ensure the subwoofer is secure to prevent damage to the subwoofer and to prevent possible injury if it tips over. Play some bass-heavy music, preferable something with a repeating bass line, and crawl on the ground with your ear at the height of the subwoofer. Carefully listen how the bass sounds in different locations. Once you find a location that has the most balanced and accurate sounding bass, this is where you will want to place the subwoofer.

Placement in the back

Low bass frequencies are omnidirectional and not localizable so you can also place the subwoofer in places you don't traditionally think about such as the back of the room. In theory, this could work, but most of the time a proper time alignment is rather difficult, and with higher bass frequencies, like the LFE channel on movie soundtracks that goes up to 120Hz, this will result in you hearing where the sound is coming from (bass localization). Placing the subwoofer in the back of the room is only recommended for those that have the proper equipment for this type of placement (DSP (Digital Signal processor) onboard or external) etc.

Stereo systems (Single subwoofer)

Stereo systems without any type of bass management, delay, or room correction will require a slightly different approach for subwoofer placement. For a single subwoofer, a good placement is the center between the speakers. Bass imaging will be at its best and it also allows for higher crossover points when used in conjunction with smaller speakers. All the recommendations above will make localization issues disappear and you will have the impression you are listening to one coherent system. The low pass frequency you set is equally important, as the higher (e.g. 120Hz) you go, the potential for the subwoofer to be localized is much greater than at lower frequencies (e.g. 40Hz).

Dual or Multiple subwoofers

Stacking
If you found a great place for your first subwoofer and you feel you need "more" output, an easy way is to supplement your need of more output is to stack another subwoofer directly on top of your first one. 2 big advantages here:

- It lower distortion by 6db and increase the output by 6db, making the 2 subwoofers act like act like one big driver. There will be no need for additional EQ or time delay, as it is a very straightforward and easy setup. This works best when the subwoofers are identical or of the same type i.e. sealed subwoofer stacked with a sealed subwoofer.

- The extra height of the second subwoofer on top also couples better to the room's acoustics exciting room modes more evenly and creates a better frequency response.

Mirror / opposite
One of the most commonly used practices will be the mirror/opposite placement. In this type of placement, the main objective is to try and position the second subwoofer as symmetrical as possible in the direct opposite placement of the first subwoofer. This principle can be also front-to-back and side-to-side. Just be aware that having the subwoofers too close to each other (side to side) will allow them to act as a single driver and that would not allow the oom modes to be managed effectively. Using this method It is crucial to have an AVR or DSP to set appropriate levels and delay since basically no room is 100% symmetrical and the subwoofers will have slightly different frequency responses.

Compared to the stacking method you will not gain the full 6db in output and reduced distortion, as it will vary with frequency and distance between the subwoofers. In the real world you can expect around 3db in the upper frequency range and closer to 6db in the very low frequencies. However, you will get a much better seat-to-seat frequency response consistency with even fewer localization effects.

Diagonal / Opposing corners
The most preferred placement method will be diagonal in opposing corners (caddy corner) i.e. one subwoofer in the ront right corner and one subwoofer in the back left corner or vice versa. This creates the most balanced frequency response as it excites both the axial and tangential room modes very evenly, correcting the peaks and nulls. The result is very consistent bass throughout a wide bandwidth, also making higher crossover points possible, without being localizable. This placement is optimized for better seat-to-seat consistency and dynamic headroom. With this kind of setup, you will need an AVR or DSP with two independent subwoofer outputs with a wide range of adjustability. Fine-tuning a setup like this can take some time and usually requires software (REW - Room EQ Wizard) and a calibrated USB measuring microphone. The time invested with these tools is definitely worth the effort as it can be a game-changer when it comes to overall system performance.

Stereo systems (Dual subwoofer)
Just as with the Single Subwoofer setups in a Stereo 2.1 System. Placement of the subwoofers in the stereo environment will be key to keeping the sound filling full and naturally balanced across the sound stage. The key here will be to get the subwoofers placed in close proximity to the respective channel main speaker and keep the distance of the subwoofer relatively the same to the listening position. This will guarantee a proper match between the subwoofer(s) and the main speaker's phase. If your AVR / Amplifier has a pair of stereo outputs and not LFE or bass management capabilities, you will need to have the proper channels connected to the corresponding subwoofer i.e "Left" low level output to the left subwoofer, "Right" low level output to the right subwoofer. As with single subwoofer stereo systems, the low pass frequency you set is very important, as the higher (e.g. 120Hz) you go, the potential for the subwoofer to be localized is much greater than at lower frequencies (e.g. 40Hz).

All the recommendations above will make localization issues disappear and you will have the impression you are listening to one coherent system.

Combination of placements
There are many different subwoofer placement combinations that can be utilized within a speaker system, all have their advantages and disadvantages. If you have the possibility of placing more than 2 subwoofers within your system, you can go for a mix of placement ideas. Please note that the more subwoofers you add to the system, the more important the processing capabilities need to be within the DSP or AVR. Most importantly, you will need independent subwoofer outputs for each subwoofer with its own adjustability to perfect the multi-subwoofer integration.

For example, three (3) subwoofers are added into a system. The first two subwoofers are placed up in the front left and right corners of the room (Mirrored) and the third subwoofer is placed in the middle of the room on the back wall. This placement method combines the great room gain/ less distortion and consistent wavefront from corner loading with the "filler" functionality of the subwoofer in the rear. This method produces a very smooth and even frequency response and great seat-to-seat consistency. Just as the other placement methods that have front and back of room subwoofers, timing and phase will be key in getting the subwoofers working in unity with each other.

We encourage everyone to get in touch with us at **support@arendalsound.com** to get expert help on choosing the right Arendal Sound subwoofer(s) for you and placement options.

HOW TO CONNECT 1961

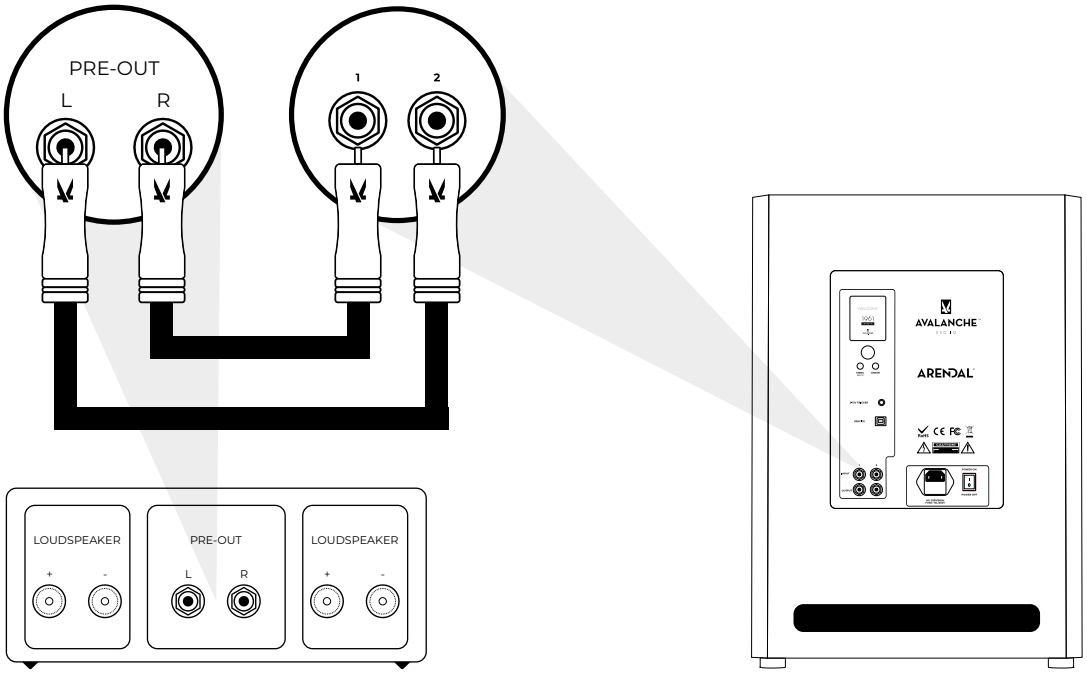
How to connect the subwoofer

Connecting to a stereo setup

Depending on your subwoofer layout, we recommend two different methods of connecting the subwoofer(s) for a normal stereo playback system, where there is no dedicated subwoofer output from the source.

Unique combined A/V-Receiver and Stereo system connection

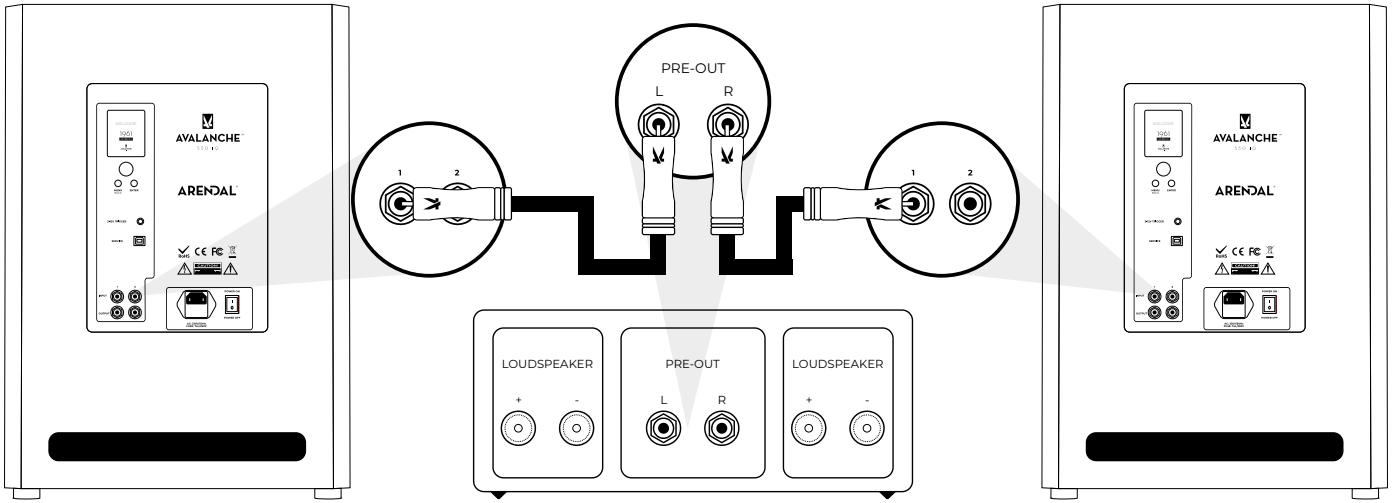
The Avalanche 550 IQ amplifier has the ability to utilize two separate systems on the subwoofer inputs. You can use the trigger signal to assign one of the inputs when it has a signal, and when it does not it will automatically connect to the other input when it receives a signal. This means you can have one subwoofer and use it both for your home cinema system as well as your separated stereo system.



Single subwoofer connection
When hooking your subwoofer up to an existing stereo setup, where there is no dedicated subwoofer output from your source we recommend that you use both L and R variable outputs (output level controlled by the amplifier volume control) from the source into the subwoofers amplifier. This will ensure that the signal is correctly summed as a mono signal to the subwoofer. If only using the L or R signal some of the bass may disappear as some songs have independant bass tracks on the Left and Right channel causing only one of them to be heard through the subwoofer instead of a summed mix.

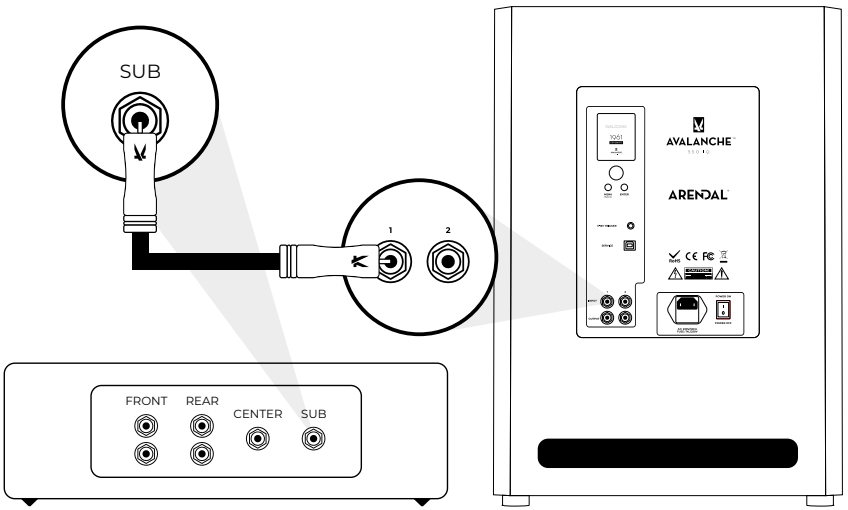
Dual subwoofer connection
When using two separate subwoofers in a music system we recommend using L and R outputs to each subwoofer (L goes to left subwoofer, R goes to right subwoofer) instead of summing a mono signal on each subwoofer if they are located on each side of the front speakers. This will ensure a true stereo image throughout the entire frequency spectrum. Note that this method is not recommended if using the two subwoofers in any other configuration than on each side of the room close to the main speakers. For any other configuration we recommend summing a mono signal to each subwoofer.

If both subwoofers are placed at the same position (side by side or stacked), we recommend summing the signal to mono to both subwoofers.



Connecting to an A/V-Receiver
For a typical AV Receiver/Processor connection, we recommend using a single RCA (fig. 1) cable between the receiver's Subwoofer output (SW Out, LFE Out or similar, please refer to your product manual) and connect to the LFE input on the subwoofer amplifier. Where an AVR/Processor has two or more subwoofer outputs, only use one to each subwoofer. There is no advantage in using two outputs into one subwoofer.

Finally you have a solution with both worlds into one.



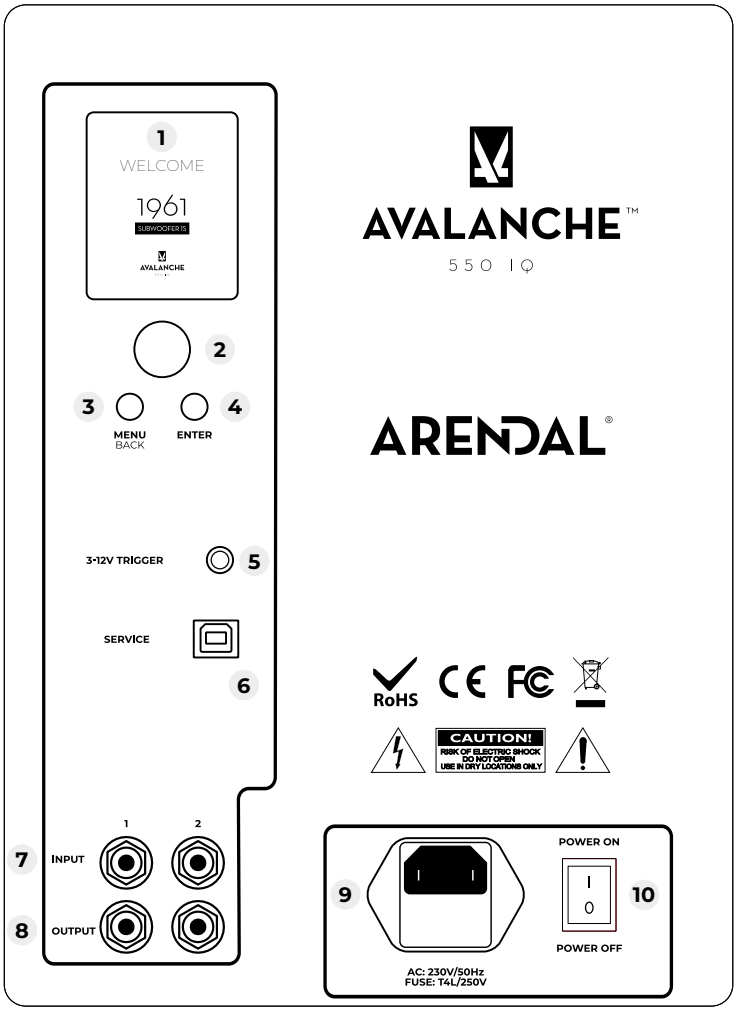
Subwoofer operation

Enclosure tuning on Subwoofer 1V offers the ability to be used with either vented or sealed alignments. By removing the foam plug from the port, low frequency output can be extended with different bass character. The subwoofer offers greater deep bass extension and more power as a vented design. As a sealed enclosure it offers even better transient response and a smoother roll-off that may suit music listeners and/or smaller rooms better.

AMPLIFIER OPERATIONS
AVALANCHE 550IQ

Quick panel overview

1. **High resolution 1.8” LCD colour display.**
2. **Adjustment knob** - To navigate the menu.
3. **Menu & Back button** - Enter the menu or back from settings/menu.
4. **Enter button** - Enter any setting in the menu or entering submenus.
5. **3-12V trigger** - Triggers the subwoofer unit on/off.
6. **Service input** - USB input for uploading firmware.
7. **Input 1 & 2** - RCA inputs.
8. **Output 1 & 2** - RCA outputs.
9. **Power inlet** - With fuse holder.
10. **Mains power switch** - On and off.



Menu operation
When the amplifier has been turned on, and the greeting has been presented, the amplifier is ready to use. To check its status simply press any button or use the adjustment knob to activate the LCD screen. From there you can enter the menu by using the “MENU” button.

To store any settings in the menu, press enter. By pressing the Menu/Back button, any adjusted setting will not be saved.



Main Menu

1. Levels

- Adjusting input gain and output levels of the subwoofer.

2. Crossover

- Setting desired Low Pass Frequency, Phase, Signal invert and EQ modes.

3. Parametric EQ

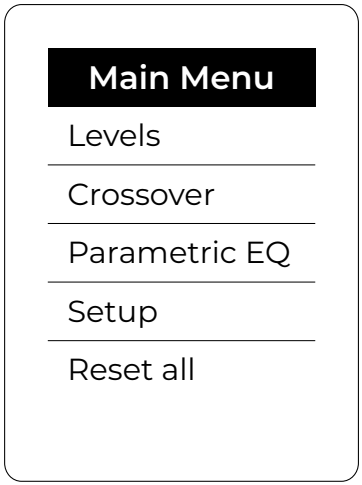
- 3 band parametric equalizer for optimizing the subwoofers frequency response to your room.

4. Setup

- Memory bank, number of subs, subsonic filter, assigning inputs, on time, wake-up sensitivity, backlight and firmware version.

5. Reset All

- Resets all stored settings back to factory default.



Levels Menu

1. Ref. Levels

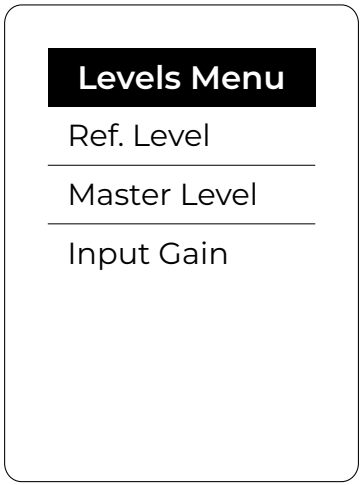
- On/off, this sets the subwoofer level to reference position, which is typically the standard for most AV equipment standard calibration levels. We recommend using this setting for anyone with home cinema processors or receivers.

2. Master Level

- Adjustable output volume from -20dB to +20dB in 0.5dB increments. Only available if Ref. Level is set to off.

3. Input Gain

- The input gain will correctly adjust the subwoofer amplifier input gain according to how high the output is from your source. If you know how high the output gain is from your source, here is how to adjust it properly; 1V output set to +6dB, 2V output set to 0dB, 4V output set to -6dB, or 8V output set to -12dB. The +6dB and 0dB setting works well with most modern AV equipment as their output levels generally are around 1-2V. Analog preamps typically have a low output voltage so the +6dB setting is recommended.



Crossover Menu

1. LPF Bypass

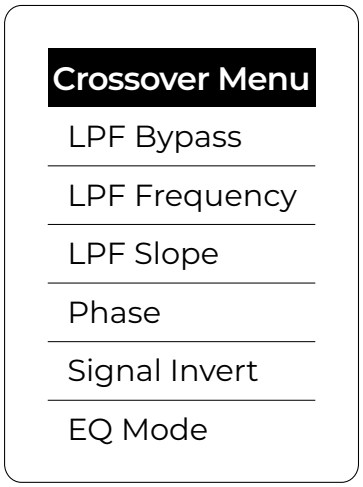
- On/Off. If On is selected, then the Low Pass Filter will be disabled. For Home Cinema use, where an AVR is used we recommend LPF Bypass – On. For stereo users you may leave this setting Off, so you can adjust the Low Pass Filter under next step.

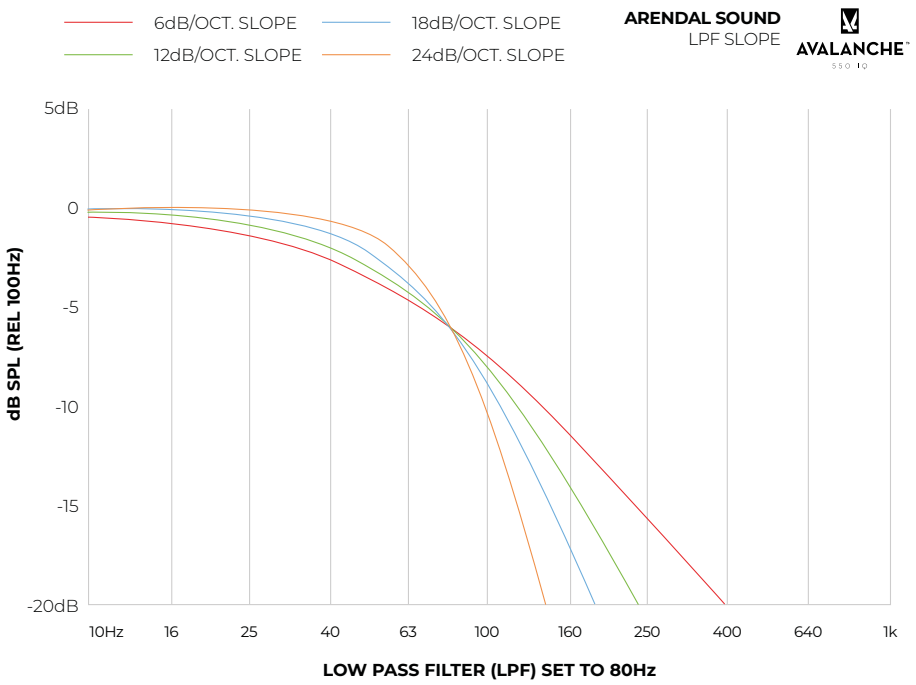
2. LPF Frequency

- The Low Pass Frequency is adjustable from 30 Hz to 160 Hz in 1 Hz increments. The number chosen here means the frequencies above will be filtered away to avoid high tones coming from your subwoofer – nobody wants to hear Diana Krall's voice through the subwoofer anyways...

3. LPF Slope

- The Low Pass Frequency Slope mean at which rate the frequencies should be tapering off, from the LPF Frequency point chosen. It is adjustable from 6dB/Oct to 24dB/Oct with 6dB increments. So, if you already set the LPF frequency to 100Hz, then setting the LPF Slope to 12dB/Oct will ensure that the signal has 12dB lower output at one octave above 100Hz (one octave above 100Hz is 200Hz).





Here you can see the different slopes and how they affect the frequency response above the LPF frequency you have set.

4. Phase

- Adjustable from 0-180 degrees. We recommend leaving the phase at 0 degrees when using an AV-Receiver/ Processor with time alignment (speaker distance) feature. For music setups the phase needs to be adjusted so the subwoofer blends with the front speakers.

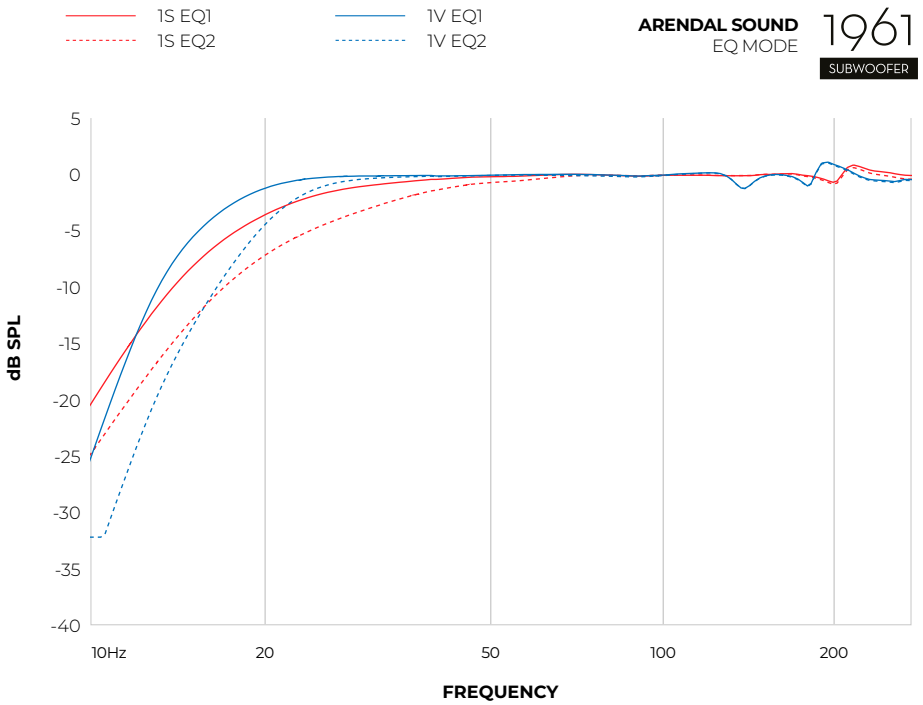
Pro tip; Have a friend/wife/mom help adjusting the phase while you sit in your listening position. Play some music with a steady bass beat, and when you hear the most amount of bass, the phase is correctly adjusted.

5. Signal Invert

- This feature inverts the signal, which means the same as 180 degrees phase, however this is "true" 180 degrees at all frequencies. Phase adjusting above will shift somewhat with frequency.
Pro tip; If you are adjusting phase manually above, and you found it to couple better with the speakers at a phase or more than 90 degrees, we would recommend that you turn Signal Invert on, and redo the phase adjustment. Staying as close to 0 on the phase adjustment will ensure the most coherent phase in the entire frequency range.

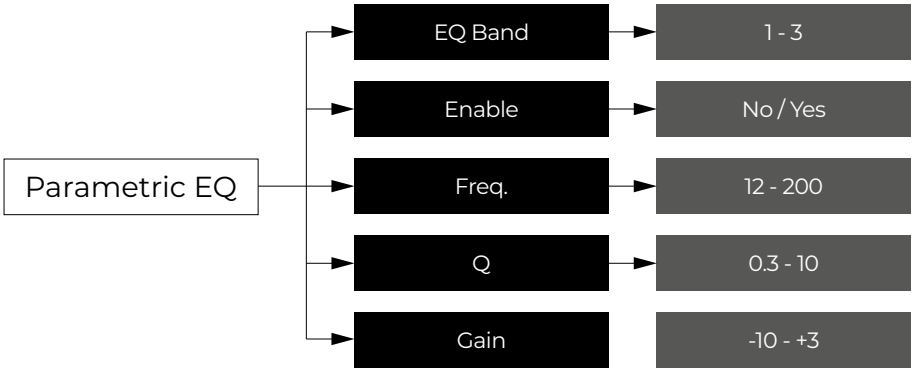
6. EQ Mode

- EQ1 gives a flat ground plane response, which will give great emphasis on the lower octaves in-room. For movies this can be especially appealing. For smaller rooms and/or music listening, the EQ2 setting can be beneficial. The bass will roll off with 12db/octave from around 40Hz which will give a smooth bass response in smaller rooms for the lower octaves. Typically, EQ2 setting will sound "faster" as it has a lack of output in the deepest bass which will give the bass a heavier sound to it.



Here you can see an example of our Subwoofer 1V, the blue lines indicate vented use for 2 EQ modes, and red lines for sealed modes.

Parametric EQ



1. EQ Band

- 3 selectable EQ bands, to optimize frequency response in your room.

2. Enable

- To enable the selected EQ band or not.

3. Freq.

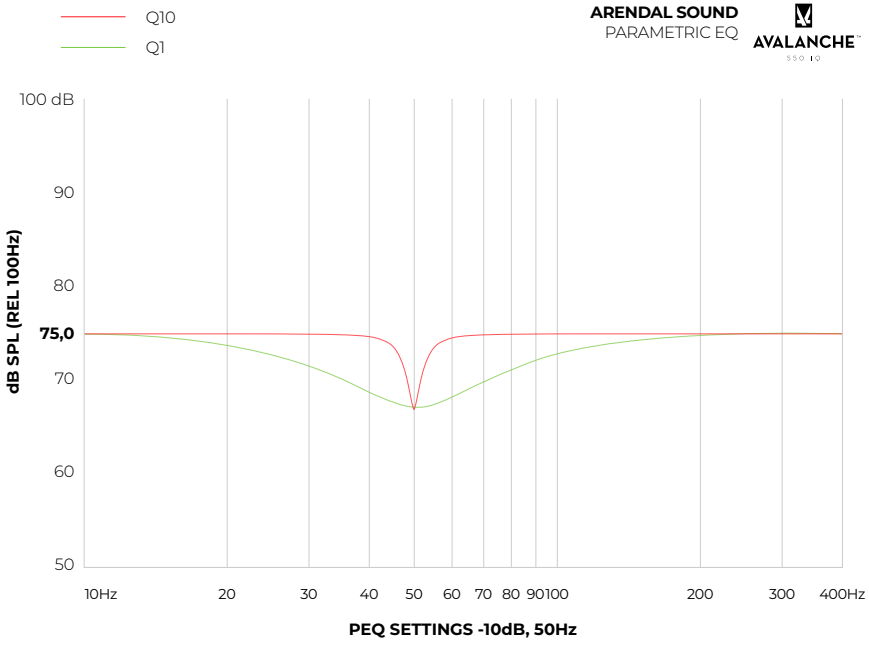
- Adjustable frequency from 12 to 200 Hz, in 1 Hz increments. This enables a pinpointed adjustment of any irregularities in the room response.

4. Q

- The Q of a frequency adjustment means how wide or small area surrounding the selected frequency you want to affect. A very high Q will target a very small surrounding area of the selected frequency, whereas a very low Q will select a very wide area surrounding the selected frequency.

5. Gain

- Adjust how much you want to increase or decrease the levels at the selected frequency. Selectable from -10 dB to +3dB.



The graph shows how adjusting the Q settings affects the frequencies above and below the selected frequency you want to adjust. Using a low Q will affect a large bandwidth of frequencies, while a higher Q will only affect areas near the selected frequency.

Setup

1. Memory bank

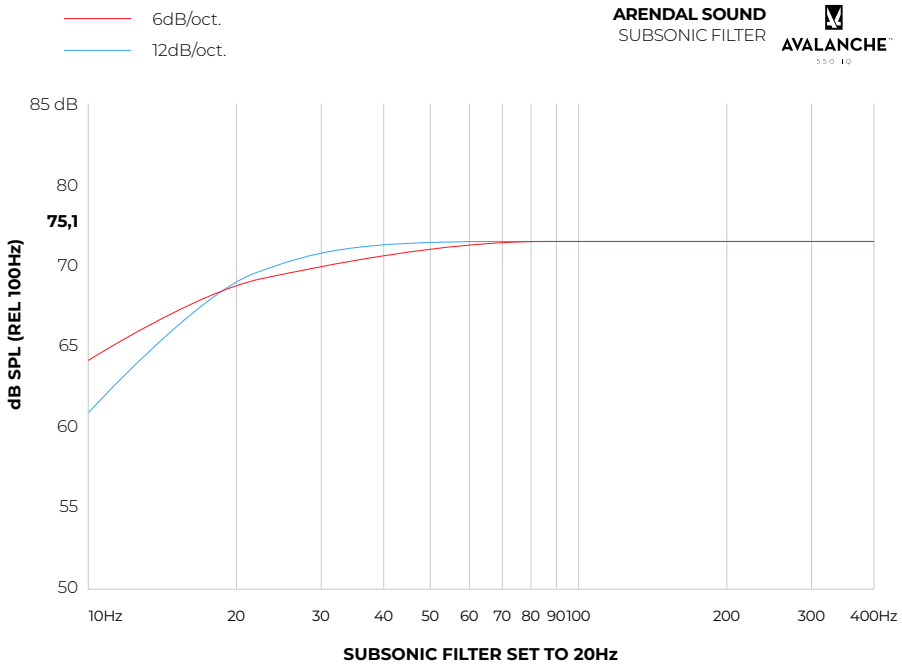
- Can store up to 4 different amplifier presets.

2. Number of subs

- This setting is only enabled if you have chosen Reference level On, in the level menu. This setting will enable 1, 2, or 4 subwoofers to have reference level in room, for ease of adjustment from an AVR or similar source. It will decrease the output sensitivity of each subwoofer to come as close as possible for the sum of all subwoofers to reference level for a single subwoofer used alone.

3. Subsonic filter

- Selectable subsonic filter settings, that will filter away the deepest frequencies. Selectable from 12 Hz to 31 Hz. In off mode the amplifier has an internal subsonic filter at 10 Hz to prevent instabilities in the power supply.



In this example you can see how the frequencies below 20Hz are affected by adjusting from 6dB/oct. slope to 12dB/oct.

4. Input / Turn-on

- Selectable input turn on process, choose from Auto-on, 12V trigger signal and Dual Source mode. The Dual Source mode is created for customers that use the same subwoofer in two systems, one typically being stereo and one for home cinema. This setting enables one input to be triggered and locked by 12V signal, and when the 12V signal is turned off, the other input will be active for auto-on function.

5. Input Selection

- This option will let you choose whether you want the setting on step 4. to be active for Input 1, Input 2 or Input 1 and 2 together. We do not recommend using Input 1+2 unless you have a stereo signal (L & R) that has to be summed in the amplifier. For Dual Source, the input selection will be locked to Input 1 – 12V / Input 2 – Auto-on.

6. On Time.

- Selectable on time from 5 to 60 minutes, in 5-minute increments. This setting adjusts how long after the amplifier will stay active after it has received a signal on the input(s) (Auto-on mode only).

7. Wake-up Sens.

- The wake-up sensitivity when the amplifier is in Auto-on mode, High sensitivity means it react very easily to any input signal, Normal is what typically works well with modern AV receivers and similar sources, and High is for environments that require a slower wake-up sensitivity. The input gain under "level" menu will also impact the subwoofers sensitivity to turn on.

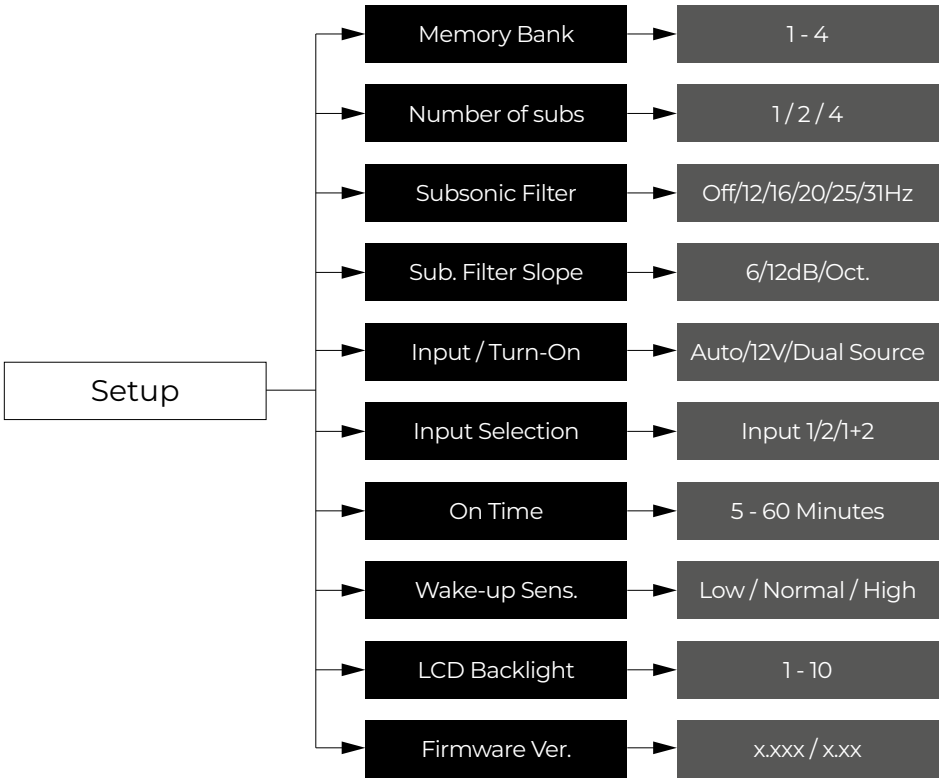
8. LCD Backlight

- Adjustable backlight on the LCD display from dim to bright.

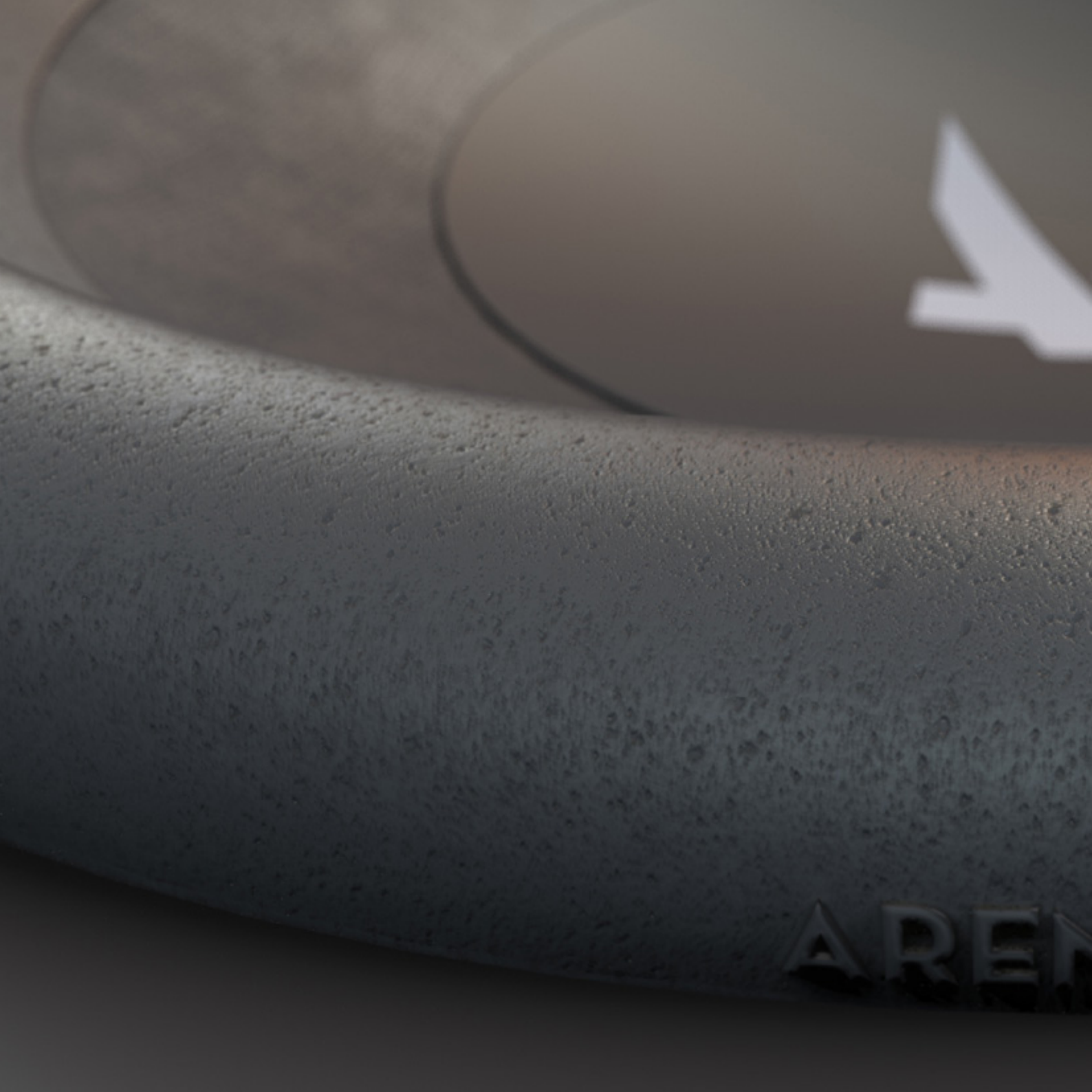
9. Firmware Ver.

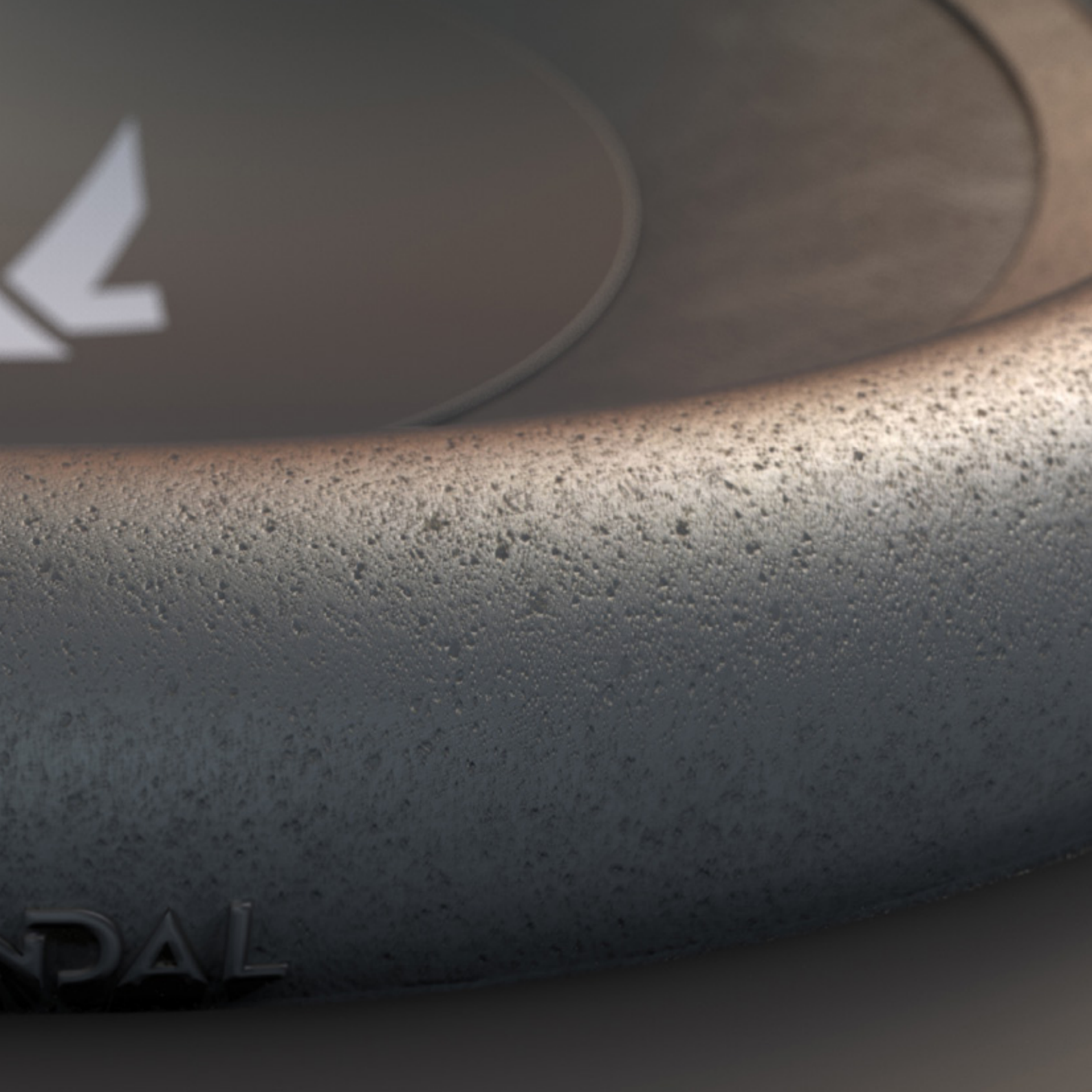
- States the firmware version of the amplifier.

Reset All - Reverts all changes back to default settings. This will erase all memory bank settings as well.









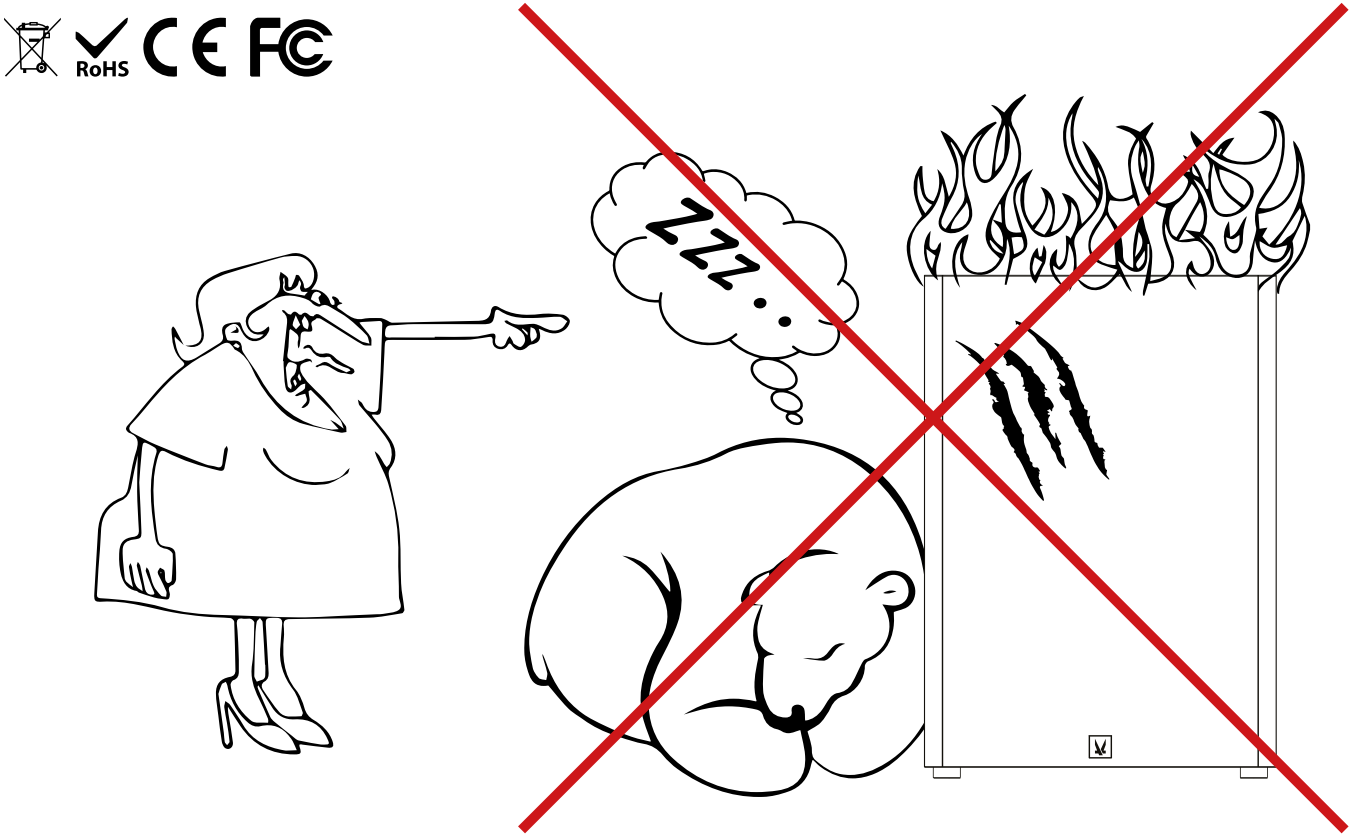
SAFETY INSTRUCTIONS

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- **Do not shower or bathe (with) this product. It does not like water nor soap.**
- Do not restrict the natural ventilation for this product. Do not cover amplifier plate with polar bear hide or similar as this product is built to handle even the cold northern climates without such heating devices.
- **Large house pets like dogs, big cats or bears should be trained not to cuddle or sleep against this product to avoid overheating, scratches and bite marks.**
- Clean this product only with dry cloth.
- Do not install near any heat sources such as an open fireplace, radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Protect the power cord, signal cables or speaker cables from being walked on, chewed on or pinched particularly at plugs and the point where they exit from the apparatus.
- Only use attachments and accessories specified by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Check that there are no cables under the carpet that may be damaged by the spike/cone feet. Do not walk the product on the spike feet as this may cause them to become detached from the cabinet and cause damage. Take care not to impale yourself with the spike feet.
- Do not place this product on an unstable stand, tripod, bracket or table. The product may fall causing serious injury and serious damage. Any mounting of the product should follow the manufacturer's instructions.



- For continued protection against fire hazard, use fuses only of the correct type and rating. Mains fuses are located inside the appliance as well as on its back panel. Replacement of the internal fuse should be entrusted to an authorized operative. User-replaceable fuse types are shown in the specification.
- WARNING: To reduce the risk of fire or electric shock, this apparatus should not be exposed to rain, snow or moisture and objects filled with liquids, such as vases, should not be placed on this apparatus.
- The mains plug of the power supply cord shall remain readily operable.
- WARNING: This product is capable of producing very high sound pressure levels. Please exercise restraint in its operation to prevent hearing damage.





SICHERHEITSANWEISUNGEN

- Lesen Sie diese Anweisungen.
- Bitte diese Anweisungen aufbewahren.
- Folgen Sie diese Anweisungen.
- Bitte alle Warnungen beachten.
- Nehmen Sie keine Dusche oder Bad mit diesem Produkt. Es mag weder Wasser noch Seife.
- Die natürliche Durchlüftung darf nicht eingeschränkt werden. Dieses Produkt kann selbst die Kälte des Nordens ohne Kälteschutzmaßnahmen vertragen und darf daher mit einem Bärenfell oder ähnliches nicht bedeckt werden.
- Große Haustiere wie Hunde, Katzen oder Bären müssen abgerichtet werden, nicht mit diesem Produkt zu kuscheln oder neben dem Produkt zu schlafen, um Überhitzung, Kratzer oder Bissspuren zu vermeiden.
- Reinigen Sie dieses Produkt ausschließlich mit einem trockenen Tuch.
- Halten Sie dieses Produkt fern von Hitzequellen wie offenem Feuer, Heizungskörper, Kachelöfen oder anderen wärmestrahlenden Geräten, einschließlich Audioverstärker.
- Schützen Sie das Stromkabel, die Cinchkabel oder Lautsprecherkabel gegen Bissen, Tritten oder Quetschungen, insbesondere an Steckverbindungen und in der Nähe des Geräts.
- Verwenden Sie ausschließlich vom Hersteller spezifiziertem Zubehör.
- Trennen Sie dieses Produkt vom Strom während Gewittern oder bei längeren Zeiten ausser Betrieb.
- Jegliche Wartungen und Reparaturen müssen vom Fachpersonal durchgeführt werden. Reparaturen sind bei jedem Defekt notwendig, z.B. Schaden am Stromkabel, beschädigte Stromstecker, Flüssigkeitseintritt, kleine Objekte verloren im Produkt, Aussetzung des Regens oder der Feuchtigkeit, Fehlbetrieb oder Sturz des Produkts.
- Stellen Sie sicher, dass keine Kabel unter dem Teppich durch die Gerätefüße beschädigt werden. Bewegen Sie das Produkt nicht auf die Gerätefüße, da sie dadurch vom Gehäuse gelöst werden können und Schäden verursachen können. Vermeiden Sie, sich selbst mit den Gerätefüße aufzuspießen.
- Stellen Sie das Produkt nie auf unstabile Ständer, Stative, Tische oder Halterungen. Das Produkt kann in dem Fall stürzen und ernste Schäden/ Verletzungen herbeiführen. Die Anbringung bzw. das Aufstellen des Produkts darf ausschließlich nach den Anweisungen des Herstellers folgen.
- Um Brandgefahr zu vermeiden dürfen nur Sicherungen mit der passenden Spezifikationen verwendet werden.
- Die Netzsicherungen befinden sich im Gerät, sowie auf der Rückseite. Netzsicherungen im Gerät dürfen nur durch autorisiertes Fachpersonal ausgetauscht werden. Durch den Benutzer austauschbare Sicherungen werden in der Produktspezifikation angegeben.
- WARNUNG: Um Stromschlag oder Brandgefahr zu vermeiden, darf dieses Gerät dem Regen, der Schnee oder der Feuchtigkeit nicht ausgesetzt werden. Vasen oder andere Gefäße mit Flüssigkeiten dürfen auch nicht auf dieses Gerät gestellt werden.
- Der Stecker des Netzkabels muss jederzeit zugänglich bleiben.
- ACHTUNG: Dieses Produkt kann sehr hohe Schallpegel erzeugen. Mäßigung im Hörpegel über längere Zeiten ist angebracht, um Gehörschäden zu vermeiden.

SIKKERHETSINSTRUKSJONER

- Les disse instruksjonene.
- Ta vare på disse instruksjonene.
- Vær oppmerksom på alle advarsler.
- Følg alle instruksjonene.
- Ikke bad (med) dette produktet. Det liker ikke hverken vann eller såpe.
- Ikke begrens den naturlige ventilasjonen for dette produktet. Ikke tildekk forsterker platen med isbjørnpels eller liknende, da produktet er bygget for å håndtere selv de kaldeste nordlige klima uten slike varmeprodukter.
- Store husdyr som hund, katt eller bjørn må læres opp til å ikke kose eller sove mot produktet for å unngå overoppheting, skrap og bitemerker.
- Rens produktet kun med en tørr klut.
- Ikke installer nær varmekilder som åpent ildsted, varmeovn, peis eller andre apparater (inklusive forsterkere) som produserer varme.
- Beskytt strømkabelen, signalkabler eller høyttalerkabler fra å bli tråkket på, tygd på eller lagt i klem, spesielt nær plugg eller der de stikker ut fra apparatet.
- Benytt kun tilleggsutstyr og tilbehør som er spesifisert av produsenten.
- Koble apparatet fra strømnettet under tordenvær eller når det ikke skal brukes over lengre perioder.
- Henvis all service til kvalifisert servicepersonell. Service kreves når apparatet har blitt skadet på noe vis, som når en strømkabel eller plugg er skadet, væske har blitt sølt eller objekter har falt ut av apparatet, apparatet har vært utsatt for regn eller fuktighet, ikke har normal funksjonalitet, eller har fått støt.
- Sjekk at det ikke er kabler under teppet som kan være skadet av spike/kone føtter. Ikke flytt produktet på spike føttene da det kan føre til at de faller av kabinettet og forårsaker skade. Ta hensyn slik at du ikke blir blir spiddet av spike føttene.
- Ikke plasser dette produktet på ustabilt stativ, tripod, brakett eller bord. Produktet kan falle og forårsake seriøs skade. Montering av produktet skal følge produsents instruksjoner.
- For kontinuerlig beskyttelse mot brannfarer, bruk kun den korrekte type og verdi på sikringen(e). Hovedsikringene er lokalisert både på innsiden av produktet i tillegg til på panelet. Erstatning av de interne sikringene må gjøres av autorisert personell. Sikringer som kan byttes av bruker er vist i spesifikasjonene.
- ADVARSEL: For å redusere faren for elektrisk støt, må apparatet ikke utsettes for regn, snø eller fuktighet og gjenstander fylt med væske slik som vaser, skal ikke plasseres på apparatet.
- Strømkabelen til strømforsyningen skal være lett tilgjengelig.
- ADVARSEL: Dette produktet kan yte veldig høye lydtrykk. Vennligst vis aktsomhet for å unngå hørselsskader.

INSTRUCCIONES DE SEGURIDAD

- Lea estas instrucciones.
- Guarde estas instrucciones.
- Siga todas las advertencias.
- Siga todas las instrucciones.
- No se duche o bañe con este producto. El agua y el jabón dañarán este producto.
- No impida la ventilación natural de este producto. No cubra el amplificador con una piel de oso polar o una protección contra el frío similar. Este producto está diseñado para resistir incluso el clima frío del norte sin necesidad de calentadores.
- Animales domésticos de gran tamaño como perros, gatos o incluso osos han de ser instruidos para que no se acurruquen o duerman pegados a este producto para evitar sobrecalentamiento, rayaduras o marcas de dientes.
- Limpie este producto exclusivamente con un paño suave y seco.
- No instale este producto junto a fuentes de calor como radiadores, chimeneas, hornos u otros aparatos que produzcan calor (amplificadores incluidos).
- Proteja el cable de alimentación, los cables de señal y los cables de altavoz ante posibles pisotones, mordiscos o pinzaduras, especialmente cerca de los conectores y de las entradas/salidas del equipo.
- Use tan solo accesorios especificados por el fabricante.
- Desconecte este aparato durante tormentas eléctricas o períodos largos sin uso.
- Remita el equipo a personal cualificado para cualquier reparación. Una reparación será necesaria en caso de cualquier daño, como por ejemplo en el cable de alimentación o su enchufe, líquidos vertidos sobre el equipo, objetos perdidos dentro del equipo, exposición a lluvia o humedad, caídas o funcionamiento defectuoso.
- Compruebe que los cables no son pisados por los pies de apoyo del producto. No traslade este producto sobre sus pies de apoyo, ya que podrían aflojarse y causar daños. Evite empalar cualquier parte de su cuerpo con los pies de este producto.
- No coloque este producto sobre un soporte inestable. El producto podría caer, causando heridas y daños serios. El montaje de este producto ha de seguir las instrucciones del fabricante.
- Use tan sólo fusibles del tipo y especificación correctos a fin de evitar peligros de incendio. Los fusibles están situados dentro de este aparato, así como en su panel posterior. El reemplazo de fusibles debe ser realizado por personal cualificado y autorizado. Los fusibles que pueden ser reemplazados por el usuario se muestran en las especificaciones técnicas.
- ADVERTENCIA: no exponga este aparato a lluvia, nieve, o humedad ni coloque sobre él objetos con líquidos, como jarrones, a fin de reducir el riesgo de fuego o shock eléctrico.
- El enchufe de corriente del cable de alimentación debe permanecer accesible en todo momento.
- ADVERTENCIA: este producto es capaz de general niveles de presión sonora muy elevados. Úselo con la debida contención a fin de evitar daños auditivos.


1
2
INPUT
OUTPUT

WARRANTY

Luckily for you and for us, Arendal Sound products are extremely durable products which have gone through extreme stress tests during development. However failures may happen and if it does, you will always know we are here to backing you up.

Arendal Sound have up to 10 Years warranty (5 for electronics) which cover all costs for you as a customer within the warranty terms. We are also accepting warranty to follow second hand purchases where sales receipt is proof of purchase which new owner needs to get from original buyer.

All Arendal Sound products can easily be repaired by the customer, by replacing components yourself. This means we may send you the replacement part/module which is needed, instead of sending the complete product back and forth, this saves down time and you will be guided by qualified staff from the Arendal Sound team. We will only ask you to do very simple steps to fix the products and you do not need any servicing experience at all. In the unfortunate event of a product failure, it will usually only take a few days to get the problem fixed.

If you have a problem with your product, please contact ***support@arendalsound.com***, send us the serial number of the product that has a problem and we will help you to identify the defective component. If we ship you a replacement part for your product, that you can swap out by yourself, we will send pre-paid return labels to return the defective part to us. This part must be returned or you will be invoiced for the replacement part in full. Every cost is covered by us if the product is under warranty. Should you prefer to send the entire product back to us for service - please contact us at ***support@arendalsound.com.***



When sending the product back to us it is important that you use the original packaging or something of similar quality. We are not responsible for damage caused by inadequate packaging but we will be helpful with arranging the return shipment.

Important!
Do not try to repair the product without permission from us. Disassembling or removing parts from your product(s) in one way or another, can damage your product(s) without the right instructions. It will void your warranty rights.

Non-Authorized Sales
Any sales done outside arendalsound.com (or belonging domains) are non-authorized and will therefore not be under our warranty. Please email us at ***sales@arendalsound.com*** if you have any questions.



