

# **DYNAUDIO**

## **Sub 6** **User manual**

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# About this operating manual: Signal words



The lightning flash with an arrowhead symbol within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



## **Caution**

Indicates a potentially hazardous situation which, if not avoided, could result in damage to equipment.



## **CAUTION**

Indicates in combination with a safety sign a potentially hazardous situation which, if not avoided, could result in minor or moderate injury or damage to equipment.



## **WARNING**

Indicates in combination with a safety sign a potentially hazardous situation which, if not avoided, could result in death or serious injury.



## **DANGER**

Indicates in combination with a safety sign a hazardous situation which, if not avoided, will result in death or serious injury.

# Important safety instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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.
15. **WARNING:** To reduce the risk of fire or electric shock, this apparatus should not be exposed to rain or moisture and objects filled with liquids, such as vases, should not be placed on this apparatus.
16. To completely disconnect this equipment from the mains, disconnect the power supply cord plug from the receptacle.
17. The mains plug of the power supply cord shall remain readily operable.



## **WARNING**

Risk of electric shock. Do not open.

To reduce the risk of electric shock, do not remove the rear panel and do not expose the apparatus to rain or moisture. No user serviceable parts inside. Refer servicing to qualified personnel.

# About this manual

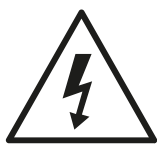
## Safety Icons

In this operating manual following icons and symbols are used.



General safety sign

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



Dangerous voltage

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

## Signal Words

### NOTICE

Indicates in combination with a safety sign a hazardous situation which, if not avoided, will result in damage to equipment.

### CAUTION

Indicates in combination with a safety sign a potentially hazardous situation which, if not avoided, could result in minor or moderate injury or damage to equipment.

### WARNING

Indicates in combination with a safety sign a potentially hazardous situation which, if not avoided, could result in death or serious injury.

### DANGER

Indicates in combination with a safety sign a hazardous situation which, if not avoided, will result in death or serious injury.

## User Manual Structure

Following this introduction and a section describing the main features of the Sub 6, this manual is divided into three sections in which you can find all the information needed to install and use your Dynaudio Sub 6:

- **Unpacking:** Describes unpacking the subwoofer, environmental factors and the contents of the subwoofer carton.
- **Installation:** This section describes subwoofer positioning in general and where to locate your Sub 6 for optimum

performance.

- **Configuration and Use:** This section describes the functions available through the Sub 6 user interface, how to configure the subwoofer optimally for your system. This section also covers the Sub 6 in use and how to fix any problems that might arise.

# Introduction

## Dear music lover

Welcome to Dynaudio Sub 6 active DSP subwoofer.

The Sub 6 is a very high performance product that rewards thoughtful setup and installation so we suggest that you take a little time to read this manual before you begin.

We've been designing, engineering and creating speakers at our Denmark headquarters since 1977, and ever since we started we've been pouring advanced R&D technology into every model. What comes out is audio reproduction at the highest level, making listening to even the most familiar recordings a new listening experience altogether. Our aim: to reproduce exactly what was happening in the studio at the time of the original recording.

In fact, we're one of very few companies who can realise such concepts. That's thanks to Dynaudio Labs, our in-house development and production facility. It's so advanced, in fact, that we've been given TS16949 certification.

Each loudspeaker is constructed and rigorously tested by our master-craftsmen to these incredibly demanding standards.

If you want to get the best possible performance from them (that's why you bought Dynaudio in the first place, after all), take a look at the information on the following pages. By considering our tips and suggestions, you'll be recreating what our engineers do in our testing rooms: extracting every ounce of detail and nuance in the music... and then enjoying every second of it.

We wish you many years of enjoyment with your new subwoofer.

Dynaudio

# Getting to know the Sub 6

The Dynaudio Sub 6 is a DSP controlled active subwoofer intended to augment the bass performance of full range speakers in conventional stereo systems.

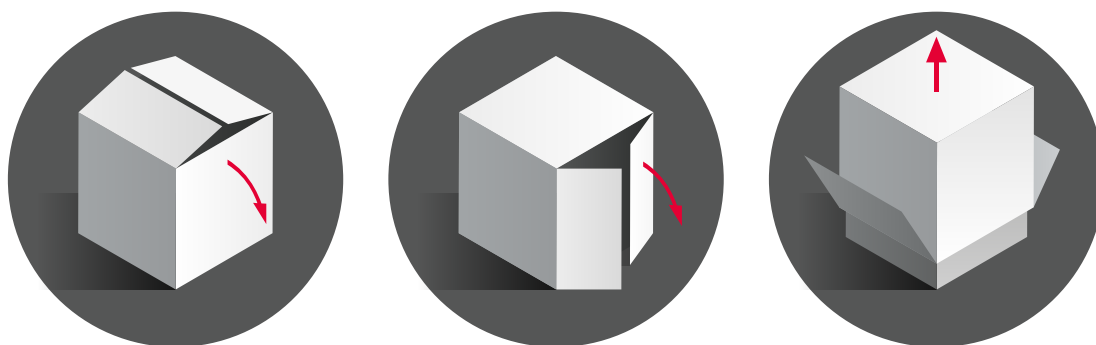
The Sub 6 features a closed box acoustic system and incorporates dual opposed 24cm drivers to minimise mechanical vibration.

Connection facilities include balanced XLR and unbalanced stereo inputs with output sockets provided to enable the connection of active main speakers or a power amplifier for main speakers.

The Sub 6 incorporates low-pass filter presets configured to match a range of Dynaudio mains speaker models, three bands of parametric equalisation, and an adjustable low pass filter that can be configured for use with main speaker models from alternative manufacturers.

Sub 6 configuration and control is accomplished through a rear panel mounted display combined with a rotary controller.

# Unpacking



1. Open the carton from the top and remove the subwoofer accessories. Do not remove the upper element of the internal packaging.
2. Carefully rotate the carton on to its side and again to turn it upside-down.
3. The carton can now be lifted away from the subwoofer. Remove the lower internal packaging now on top to reveal the underside of the subwoofer.
4. Open the plastic bag and remove it from around the base of the subwoofer.
5. Carefully rotate the subwoofer on to its side and again to turn it onto its feet. The internal packaging can now be removed followed by the plastic bag.

After unpacking, make sure the components are complete and check the subwoofer and all accessories for transport damage. Transport damage may be expected if the packaging is severely marked. Do not attempt to install the subwoofer if it is damaged. If the contents are incomplete or damaged, please contact your Dynaudio retailer or local distributor. Distributor addresses can be found at: [www.dynaudio.com](http://www.dynaudio.com).

## Packaging material

The packaging has been designed so that it may be reused if it was not damaged during initial transport. Keep the packaging and use it for all further transport.

### Note

The Sub 6 is heavy and is best unpacked close to its installed location by two people working together.

## Disposal

Disposal of used electrical and electronic equipment (applicable in European countries with separate collection systems for this equipment).



This symbol on the product or its packaging indicates that the product may not be treated as household waste. Instead it must be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative

consequences for the environment and human health. The recycling of materials helps to conserve natural resources. For more detailed information on recycling this product, please contact your local authority, community waste disposal of, or the shop where you purchased the product.

## **Carton contents**

Please check that the carton contents are complete:

- Subwoofer: The factory-set power requirements (refer to label on rear of subwoofer) should correspond for the region where the subwoofer was purchased. Refer also to chapter "Important Safety Instructions".
- Two driver grilles
- Accessory pack containing four spike feet and four rubber feet.
- Mains cable. The supplied cable should be suitable for the territory where the subwoofer was purchased.

### **Note**

The subwoofer can be operated without its grilles. However, we recommend that the grilles are fitted during normal use to help prevent accidental damage or dirt settling on the driver diaphragms. The influence of the grille on subwoofer performance is negligible.

To remove the grilles simply pull them carefully away from the cabinet. To refit a grille align its pegs with the fittings on the face of the cabinet and gently push the grille home to secure it in place. Always take care not to damage the moving parts of the drive units when removing or replacing grilles.

# Installation

## Positioning

Although the position of subwoofers in the listening room is generally less critical than full-range speakers, we still recommend that you select your Sub 6 position carefully. With careful positioning the subwoofer will integrate more seamlessly with the other speakers in the system, and interact optimally with the room acoustics.

The following notes should be taken as rough guidelines; bass response in general is very dependent on the acoustics of the listening environment. Finding the best position often involves a lot of trial-and-error experimentation. Always trust your ears, even if the position of the subwoofer seemingly goes against the guidelines.

Contradictory as it may seem, good integration of subwoofers has been achieved when one isn't aware that a subwoofer is present at all in the system, yet performance involves fast, deep and solid bass without sounding stressed, even at loud levels.

### Choose adequate music material

When experimenting to find the optimal location, use a couple of music tracks with repetitive bass across a large spectrum. The tracks should be sufficiently different from each other and each should cover a wide bass-range. Musical instruments, such as a double-bass, bass guitar, church organ, etc. cover a wide spectrum in the bass region and are therefore very suitable. Using non-music (such as action movies) material to position and adjust the subwoofer with, may lead to spectacular results with such material but almost always it will result in overblown and excessive bass when playing music with the same setting.

## Impact of room-modes

Every listening environment will have specific "room-modes", whereby in some specific locations in the room and at particular frequencies, the bass may be too much or too lean. This effect will be stronger in square and "shoe-box" shaped rooms. With a single subwoofer, the better position for the subwoofer relative to the listening position will be the one where bass is perceived to be neither too much nor too lean at any given frequency.

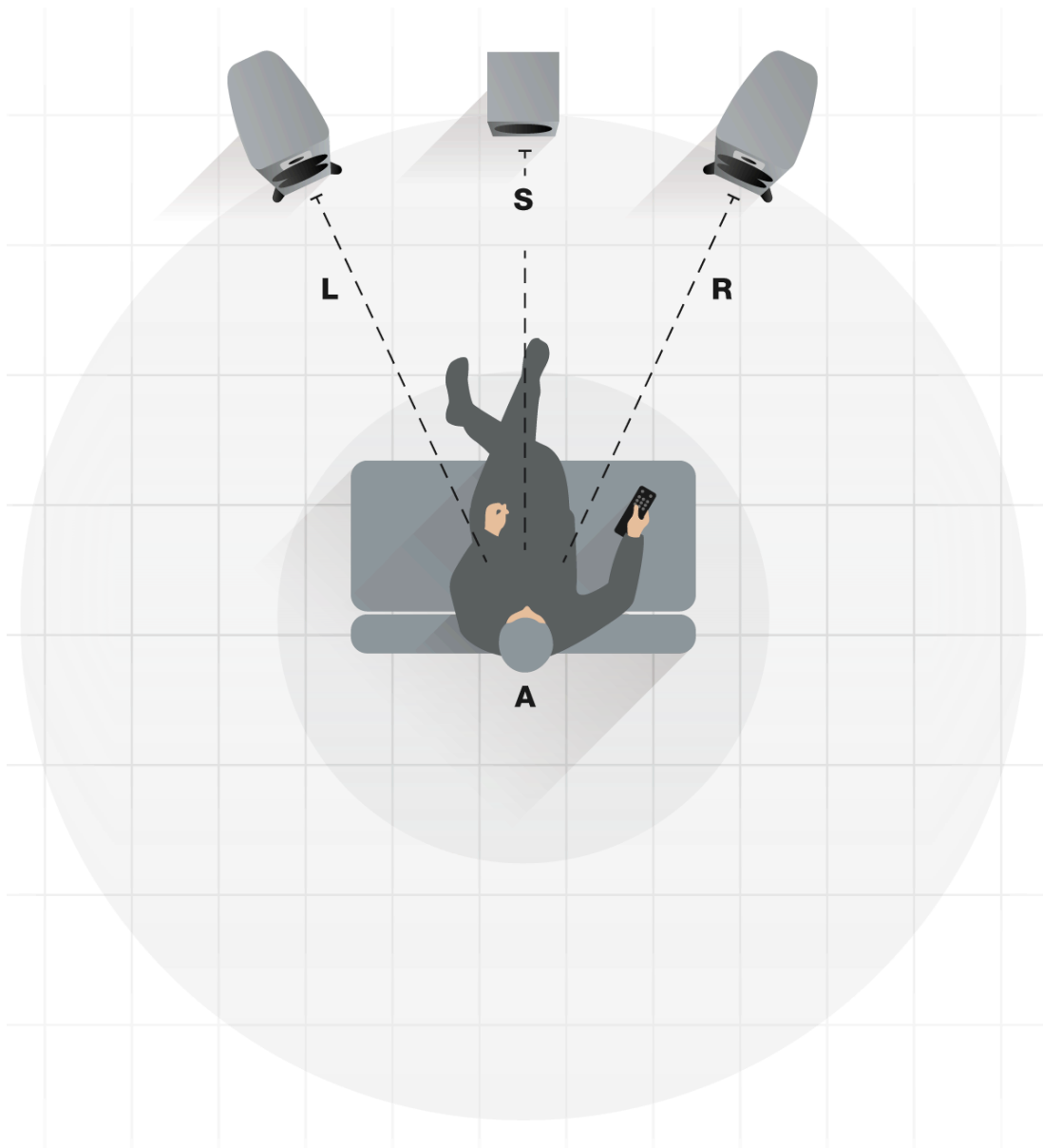
When using a single subwoofer, placing the subwoofer at the listening position, moving around prospective placement positions and listening/measuring to the result can often give a good indication of the performance of the subwoofer. Using a broadband signal, such as pink noise available in the RTA section of the Dynaudio Sound Meter app (available free from the Apple app store), should highlight any impact of room modes in the frequency response.

The Dynaudio Sound Meter app is available free from the Apple App store.

## Using multiple subwoofers

By using carefully positioned multiple subwoofers it is possible to even out the different room-modes and thus create a more coherent overall bass response in the room. It is worth experimenting with different locations around the room for the additional subwoofers, even using the rear of the room. As adding subwoofers will not increase the effect of room-modes, even adding a subwoofer without much care or thought to positioning is likely to help even out room-modes. A simple place to start is by spacing multiple subwoofers equally across the front wall, as this can help stop width modes from forming.

## Positioning Possibilities



- L: Left speaker distance
- R: Right speaker distance
- S: Subwoofer distance
- A: Listening area

Moving the subwoofer closer to walls and corners in particular will generally increase the amount of bass. Although the extra amount of bass can be compensated for by reducing the volume level of the subwoofer relative to the rest of the system, this can result in uneven bass response at the listening position. You can try starting with placement in a corner and experiment by gradually moving it out of the corner or further away from the wall. Try to locate the position which yields the best compromise between position, volume and even bass response. Note that every time that you reposition the subwoofer (even if it's over a short distance) you may need

to adjust its settings.

### **Corner placement**

This placement yields maximum boost of bass level but potentially uneven distribution of bass in the room (room-modes), particularly if the room is square or shoe-box shaped.

From the listening position, check if the bass is even across the entire bass spectrum. If not, move the subwoofer out of the corner. Try moving it along either wall.

### **Next to wall, away from corner**

This position still provides considerable boost but less than the corner placement as above. Interaction with room modes can also still be considerable but less so than with corner placement.

From the listening position, check if the bass is even across the entire bass spectrum. If not, move the subwoofer away or towards your listening position until the most even response has been obtained.

Avoid placing the subwoofer exactly half-way or at a quarter of the wall's length.

### **Free standing, away from wall and corner**

This position will give least boost compared to wall or corner placement, but in general offers the best flexibility at achieving most even bass distribution at the listening position.

Avoid placing the subwoofer exactly half-way or at a quarter or third's length of either sidewall.

Particularly in smaller square or "shoe-box" shaped rooms the free standing position is recommended.

### **Sub 6 DSP Features**

The Sub 6 incorporates signal processing that can compensate for the time delay and volume level differences between the subwoofer and main speakers resulting from their relative positions with respect to the listening position. Once you have positioned your subwoofer, measure the distances as illustrated in the diagram. The measured distances should then be specified at the appropriate locations in the subwoofer configuration menu. The configuration menu is described in the following of this manual.

#### **Note**

The Sub 6 signal processing is able to compensate for a maximum of 5.35 m difference between subwoofer and main speaker distances to the listening position.

### **Sub 6 Feet**

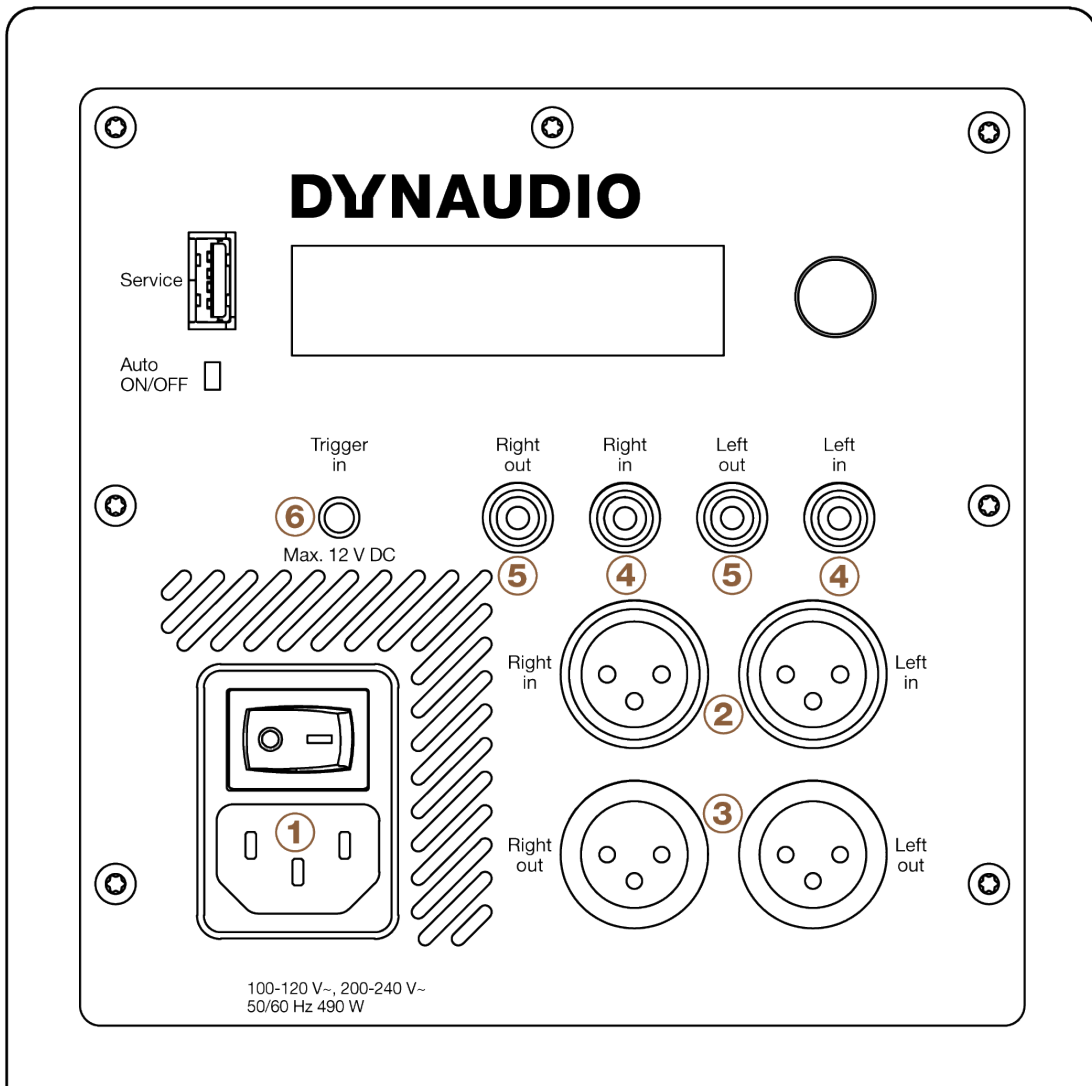
The Sub 6 is supplied with rubber feet and option for spikes. Spike feet are intended to be used on carpeted solid floors. The spikes pierce the carpet to support the subwoofer on the floor below protecting the carpet from damage and providing a stable foundation.

If floor spikes are to be used, screw a spike and lock-nut into each tapped hole leaving a length of spike extending beyond the lock-nut so that when the subwoofer is upright the lock-nuts will "float" just above the carpet.

Tighten three of the lock-nuts with the included spanner leaving one locknut finger-tight to aid adjustment once the subwoofer is placed in its final position. Once the final position has been established adjust the length of the loose spike so that the subwoofer is level and does not rock. Finally, tighten all loose lock-nuts.

Take care when installing floor spikes. They are sharp and can cause injury.

## Sub 6 Mains and Signal Connections



The Sub 6 is fitted on its rear face with a connection and control panel carrying mains, signal and connection sockets. The panel is illustrated in Diagram 3 and its connection facilities are described in the following paragraphs. Diagrams illustrating various signal connection schemes can also be found on the following pages.

### 1. Mains power socket

Connect the subwoofer to a mains power supply using the cable supplied. If multiple cables are supplied with your subwoofer, use the one appropriate for your territory.

#### Note

Do not switch on your subwoofer until all other connections have been made.

### 2. Balanced XLR input sockets (left and right)

If your audio source provides balanced outputs connect them to these sockets using high quality balanced XLR audio cables.

#### Note

Balanced signal connection is a feature of professional audio and of some high-end domestic audio

equipment. It is inherently more resistant to interference and noise than unbalanced connection.

### **3. Balanced XLR output sockets (left and right)**

The XLR output sockets are intended for the connection of active left and right main speakers or a power amplifier driving the main speakers.

#### **Note**

The Sub 6 distance compensation signal processing can only function correctly if the main speakers are driven via the subwoofer outputs.

### **4. Unbalanced phono input sockets (left and right)**

If your audio source provides unbalanced phono outputs connect them to these sockets using high quality phono audio cables.

#### **Note**

If your audio source provides only a mono subwoofer output it can be connected to either Sub 6 left or right input. In this case however the main speakers must be driven from the audio source and not via the Sub 6 outputs.

### **5. Unbalanced phono output sockets (left and right)**

The phono output sockets are intended for the connection of active left and right main speakers or a power amplifier driving the main speakers.

#### **Note**

The Sub 6 distance compensation signal processing can only function correctly if the main speakers are driven via the subwoofer outputs.

### **6. Trigger input**

The trigger input enables wired remote control of subwoofer switch on and off in automated home systems. Your Dynaudio retailer or installer will be able to provide more information on the use of the Sub 6 in home automation systems.

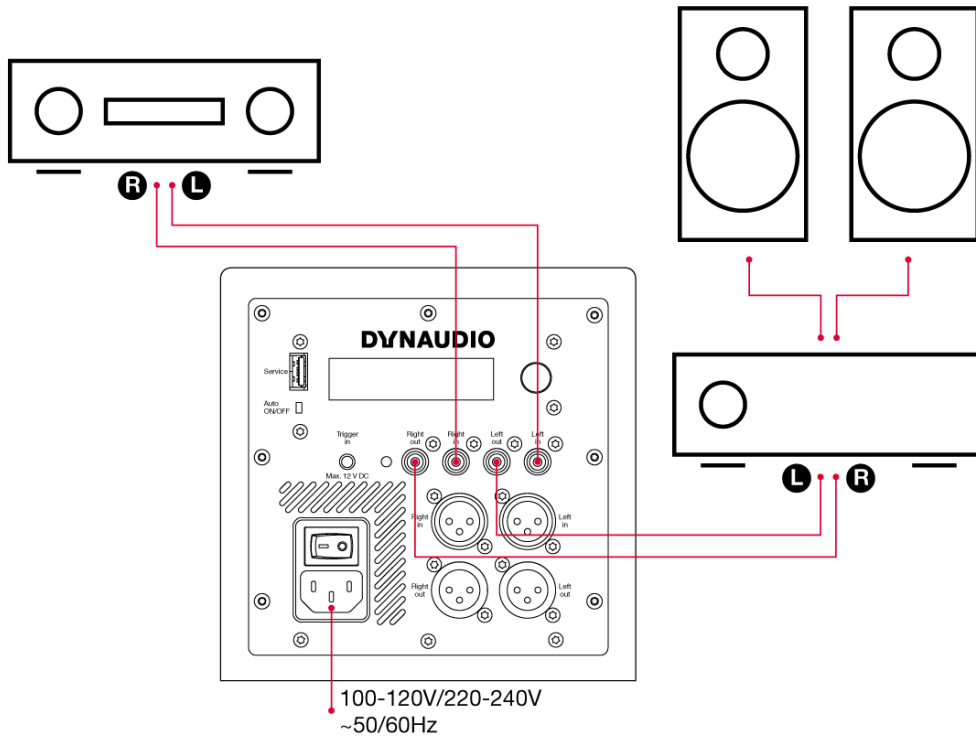
#### **Note**

The USB socket present on the Sub 6 connection panel is intended for fault diagnosis and firmware update only. It cannot be used for audio connection or playback. Contact your Dynaudio retailer or Dynaudio directly for more information of firmware updates.

## **Sub 6 Connections Schemes**

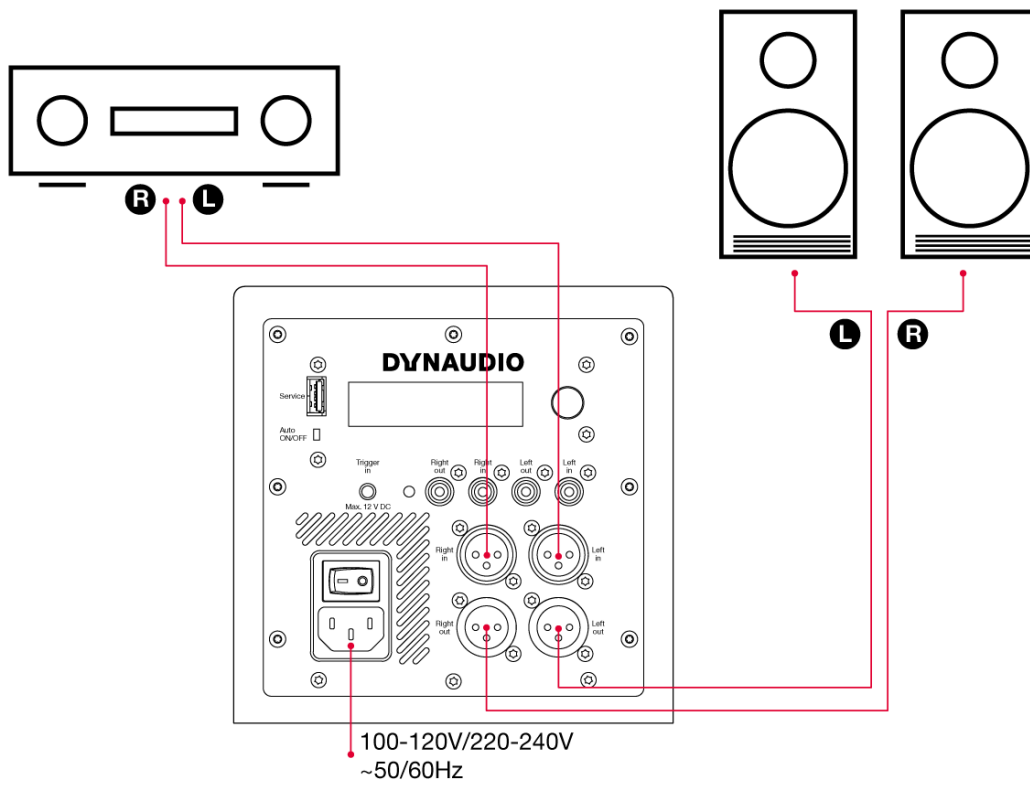
The connection schemes illustrated here cover most common installations.

### Connection Scheme 1



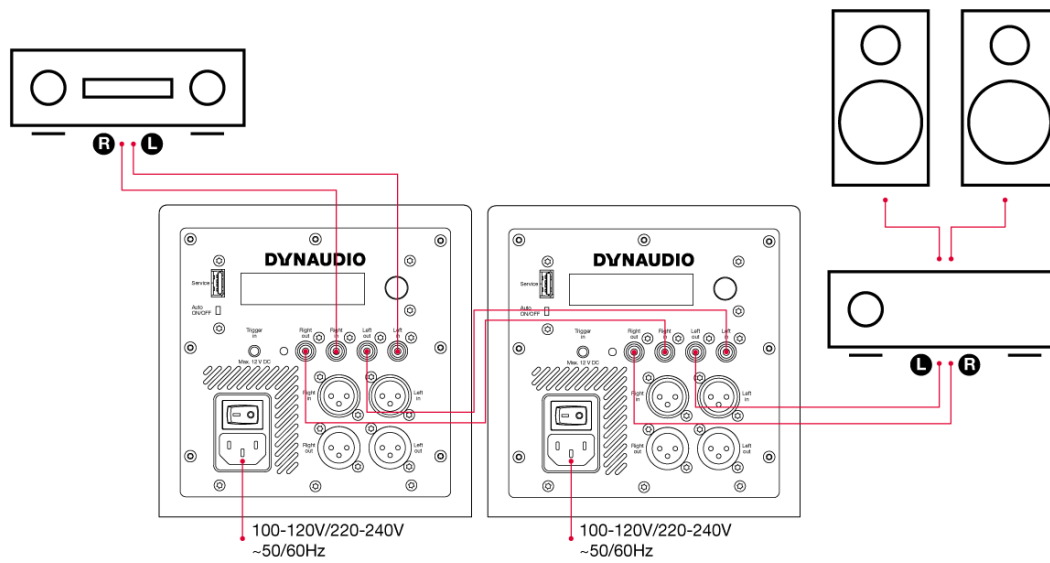
- Unbalanced (phono) connection from preamplifier/processor to subwoofer inputs.
- Unbalanced connection from subwoofer outputs to power amplifier and passive main speakers.

### Connection Scheme 2



- Balanced (XLR) connection from preamplifier/processor to subwoofer inputs.
- Balanced connection from subwoofer outputs to active main speakers.

### Connection Scheme 3



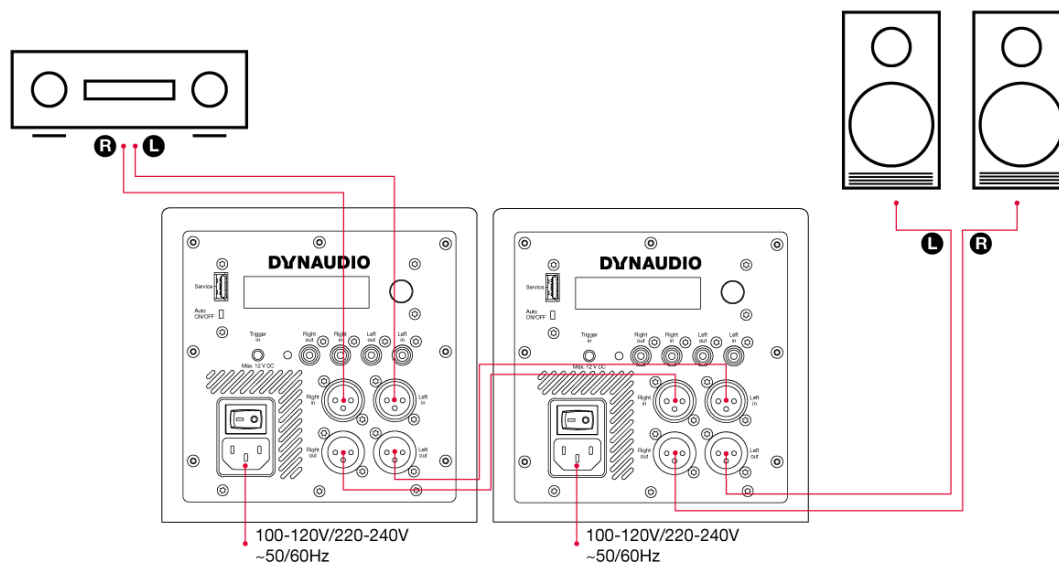
- Unbalanced (phono) connection from preamplifier/processor to first subwoofer inputs.

- The first subwoofer's input sensitivity should be set to match the preamplifier/processor outputs.
- In order to time-align the subwoofers, the latency of the second subwoofer needs to be accounted for. This is done by adding 86 cm to the Left Distance and Right Distance setting in the first subwoofer. The distance used in the setting should be the distance from the listening position to the second subwoofer plus 86 cm. The Subwoofer Distance should be set as the distance to the first subwoofer. See [Calculation](#).
- Unbalanced connection from first subwoofer outputs to second subwoofer inputs.
- The second subwoofer's input sensitivity should be set to 0 dB.
- Unbalanced connection from second subwoofer outputs to power amplifier and passive main speakers.
- The second subwoofer should be distance-aligned as described in [Sub 6 DSP Features](#).
- The subwoofers should be level-aligned using their volume setting.

### Calculation

First Subwoofer			Second Subwoofer
Left Speaker Distance	distance to second subwoofer + 86 cm	Left Speaker Distance	distance to left speaker
Right Speaker Distance	distance to second subwoofer + 86 cm	Right Speaker Distance	distance to right speaker
SUB Distance	distance to first subwoofer	SUB Distance	distance to second subwoofer

### Connection Scheme 4



- Balanced (XLR) connection from preamplifier/processor to first subwoofer inputs.
- The first subwoofer's input sensitivity should be set to match the preamplifier/processor outputs.
- In order to time-align the subwoofers, the latency of the second subwoofer needs to be accounted for. This is done by adding 86 cm to the left and right distance setting in the first subwoofer. The distance used in the setting should be the

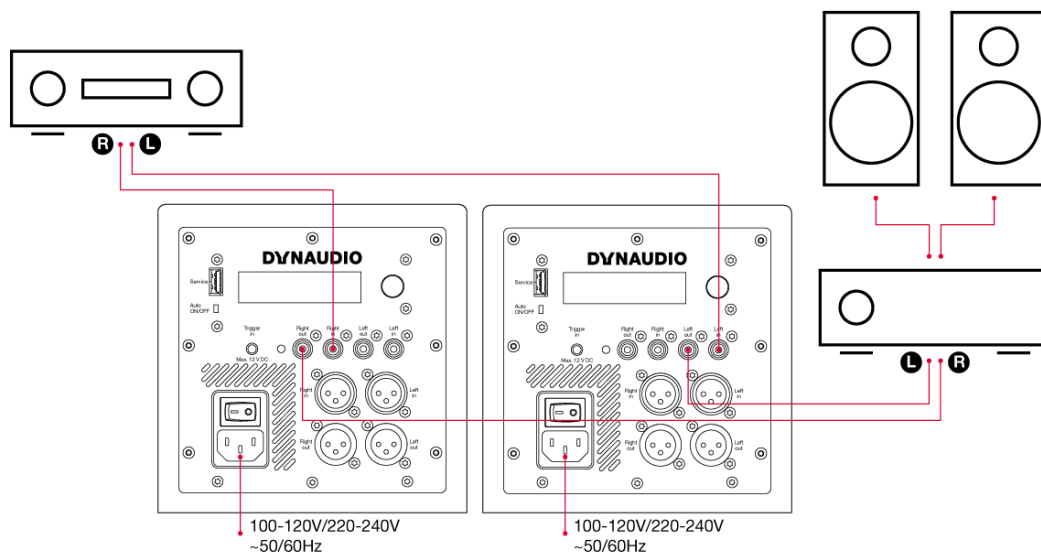
distance from the listening position to the second subwoofer plus 86 cm. The subwoofer distance should be set as the distance to the first subwoofer. See [Calculation](#).

- Balanced connection from first subwoofer outputs to second subwoofer inputs.
- The second subwoofer's input sensitivity should be set to 0 dB.
- Balanced connection from second subwoofer outputs to power amplifier and passive main speakers.
- The second subwoofer should be distance-aligned as described in [Sub 6 DSP Features](#).
- The subwoofers should be level-aligned using their volume setting.

### Calculation

First Subwoofer			Second Subwoofer
Left Speaker Distance	distance to second subwoofer + 86 cm	Left Speaker Distance	distance to left speaker
Right Speaker Distance	distance to second subwoofer + 86 cm	Right Speaker Distance	distance to right speaker
SUB Distance	distance to first subwoofer	SUB Distance	distance to second subwoofer

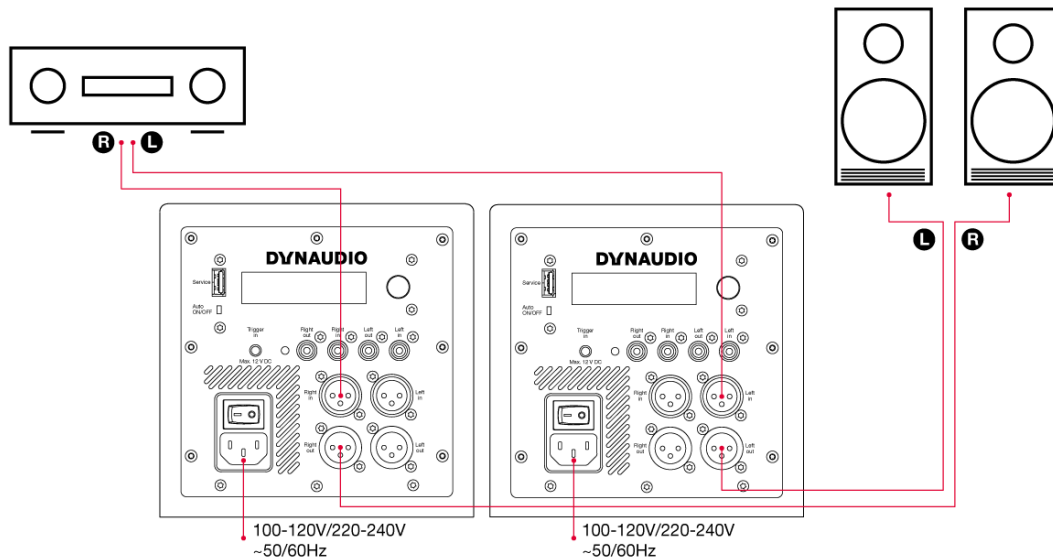
### Connection Scheme 5



- Stereo subwoofers.
- Left unbalanced (phono) connection from preamplifier/processor to left subwoofer, left input.
- Unbalanced connection from left subwoofer output to the left power amplifier input and passive main left speaker.
- The left and right speaker distances in the left subwoofer should be set the as the left speaker distance described in [Sub 6 DSP Features](#). The Sub Distance should be set as the left subwoofer distance.
- Right unbalanced (phono) connection from preamplifier/processor to right subwoofer, right input.

- Unbalanced connection from right subwoofer output to the right power amplifier input and passive main right speaker.
- The right and left speaker distances in the right subwoofer should be set the as the right speaker distance described in [Sub 6 DSP Features](#). The Sub Distance should be set as the right subwoofer distance.

### Connection Scheme 6



- Stereo subwoofers.
- Left balanced (XLR) connection from preamplifier/processor to left subwoofer, left input.
- Balanced connection from left subwoofer output to the left active main speaker.
- The left and right speaker distances in the left subwoofer should be set the as the left speaker distance described in [Sub 6 DSP Features](#). The Sub Distance should be set as the left subwoofer distance.
- Right balanced (XLR) connection from preamplifier/processor to right subwoofer, right input.
- Balanced connection from right subwoofer output to the right active main speaker.
- The right and left speaker distances in the right subwoofer should be set the as the right speaker distance described in [Sub 6 DSP Features](#). The Sub Distance should be set as the right subwoofer distance.

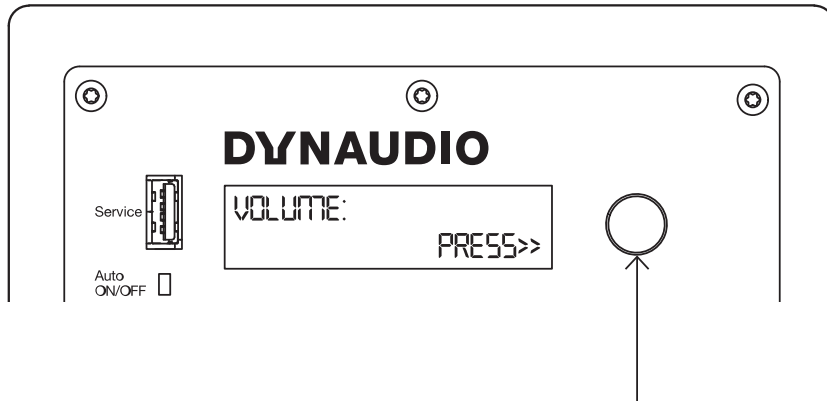
### Subwoofer Control

Rotary controller:

- Rotate to select.
- Press to confirm.

# Control and configuration

## Subwoofer controller



Rotary controller:

- Rotate to select.
- Press to confirm.

# Configuration and Use

With the Sub 6 subwoofer positioned in the listening room and connected to signal cables and mains power it can be switched on via the mains switch above the mains input socket on the rear panel.

The Sub 6 must be configured appropriately for the audio system and main speakers with which it is to be used. This is achieved via the rotary controller, display and menu based interface on the rear panel. Turn the rotary controller to select configuration parameters and press the control to select options and save any changes.

## General Tips

### Check it out

Try different subwoofer positions and settings, before you finally choose a setup.

### Note down settings

When looking for the best subwoofer position in the room, note down the ideal setting you found for a position. When moving the subwoofer between two positions you will be able to set the subwoofer to the same configuration as found before.

### Vary the listening music

When experimenting to find the optimal settings, use a couple of music tracks with repetitive bass across a large spectrum. The tracks should be sufficiently different from each other and each should cover a wide bass-range.

Musical instruments, such as a double-bass, bass guitar, church organ, etc. covering a wide spectrum in the bass region and above, are very suitable as these depend on accurately balanced subwoofers and main speakers.

### Verify changes

Although in general it is best to make adjustments in the sequence outlined below, note that changing one setting may influence another. For example, finding the right setting for phase may result in having to decrease gain, even if this was set correctly before.

It is recommended that you double-check the previous settings before moving on to the next one. Obtaining the best integration of the subwoofers generally involves a considerable amount of repeated fine-tuning.

### Note

If multiple subwoofers are employed, ideally they should not be "daisy-chained". Multiple subwoofers should be configured according to the individual subwoofer positions with the same input settings and the same low & high pass filters.

If multiple subwoofers are to be "daisy-chained", please follow the instructions in [Connection Scheme 3](#) and [Connection Scheme 4](#).

## Sub 6 Configuration Menus

### Auto, ON/OFF

The Auto, ON/OFF switch enables auto standby (Auto) or forces the subwoofer to be permanently on (ON/OFF).

In Auto mode, the subwoofer can be "woken up" by

- an audio input signal,
- rotary knob push,
- a trigger input if Trigger is enabled in the menu.

**Menu structure:**

- [Volume](#)
- [Input sensitivity](#)
- [Preset](#)
- [Phase](#)
- [PEQ](#)
- PEQ Bypass
- PEQ 1
- Frequency
- Gain
- Q
- PEQ 2
- Frequency
- Gain
- Q
- PEQ 3
- Frequency
- Gain
- Q
- [HP Filter](#)
- [Auto-standby](#)
- [Trigger](#)
- [Left speaker distance](#)
- [Right speaker distance](#)
- [SUB distance](#)
- [Factory Reset](#)
- [Software Version](#)

For more information, see the following sections.

**Volume**

Set to match the volume of your main speakers so that bass at your main listening position is neither too prominent or too quiet. Setting the subwoofer volume is important in terms of both overall system balance and the demands of different types of programme material.

**Status**

Select to display the subwoofer operational status.



## Input sensitivity

Adjusts the input sensitivity to match the output level of your pre-amplifier or audio-visual processor.

### Setting Input Sensitivity

The wide variety of possible source equipment types that can be connected to an active subwoofer means that it is important to set the input sensitivity appropriately. Doing so will help ensure that the subwoofer's volume adjustment range is adequate and that its input and DSP electronics are driven properly.

If the source equipment has a published specification for output level, begin by setting the Sub 6 input sensitivity to match the specification as shown in this table:

Source Output Level	Sub 6 Setting
<1.0 V	+6 dB
<2.0 V	0 dB
<4.0 V	-6 dB
<10 V	-14 dB

The -14 dB sensitivity setting should generally be used when the Sub 6 is used for the LFE channel in a home theatre system.

If the source equipment has no published output level specification, begin by setting the Input Sensitivity to -6 dB. If then when in use the Sub 6 volume setting is required to be towards either its maximum or minimum values, adjust the Input Sensitivity appropriately such that the volume setting is towards the middle of its range.

### Preset

The Sub 6 incorporates low pass filter presets for a range of Dynaudio speaker models.

If your Sub 6 is to be used in a system with one of the Dynaudio models listed, select it to automatically configure the Sub 6 low pass filter appropriately.

If your Dynaudio speaker model is not listed among the Sub 6 presets, or if your Sub 6 is to be used with speakers from an alternative manufacturer, select a low pass filter frequency closest to the speaker's specified -6dB low frequency cut-off. Unlike the specific Dynaudio loudspeaker filters, these low pass filters are of a 4th order Linkwitz-Riley type.

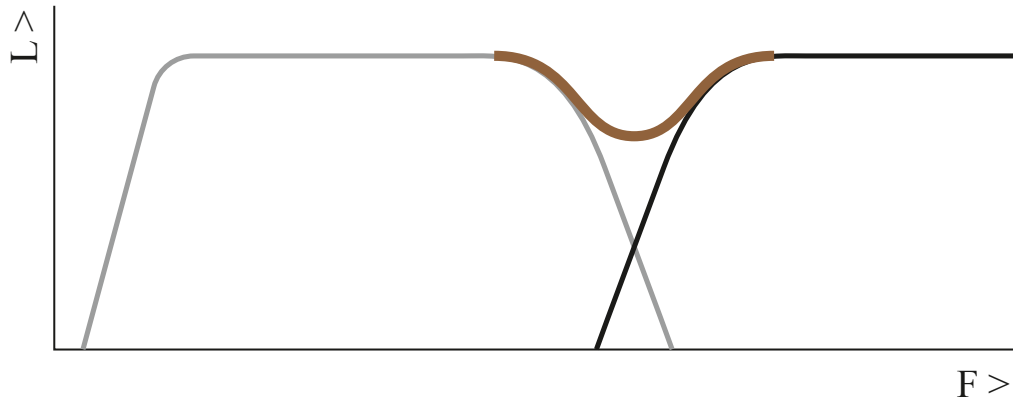
Alternatively, you may wish to use the 80Hz high-pass 4th order Linkwitz-Riley filter on the Left/Right outputs, in this case the 80Hz low pass filter should offer the best matched crossover.

If your subwoofer is to be used for the LFE channel in a home theatre system select the filter Bypass option.

### Note

Matching the filter frequency of the subwoofer to the bass cut-off frequency of the main speakers will have an important impact on the overall system sound quality. In general, larger main speakers will have more extended bass so will require a lower subwoofer filter frequency. Conversely, smaller main speakers are likely to require a higher subwoofer filter frequency. If the subwoofer filter frequency is not set optimally, the overall frequency response of the system may display an audible peak or dip around the crossover frequency. The diagram opposite illustrates the three frequency response characteristics that might result from optimum and non-optimum subwoofer filter settings.

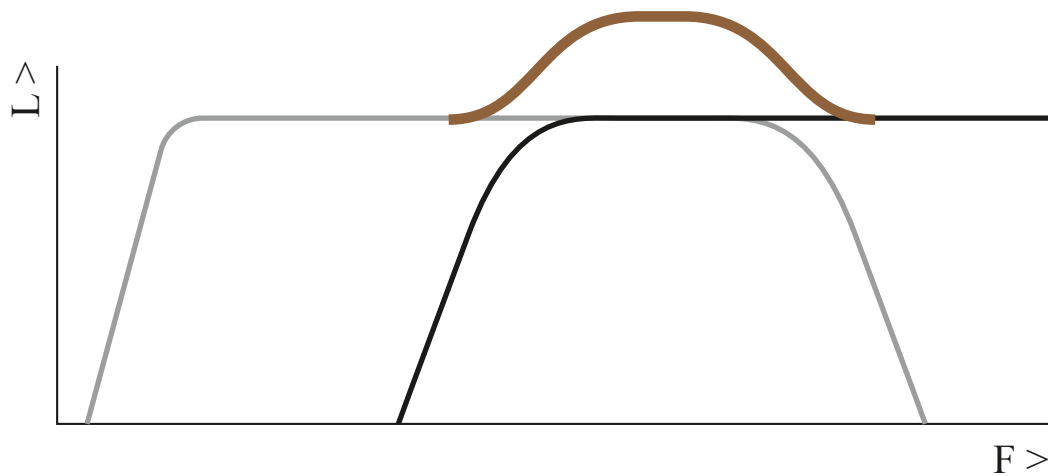
### Subwoofer filter frequency set too low



- L: Level
- F: Frequency
- Dark grey line: Main speakers
- Light grey line: Subwoofer
- Brown line: System response

A dip in the system response will occur if the filter frequency of the subwoofer is set too low – perhaps with small main speakers that do not have extended bass response. The result will be missing musical information and a thin overall sound.

### Subwoofer filter frequency set too high

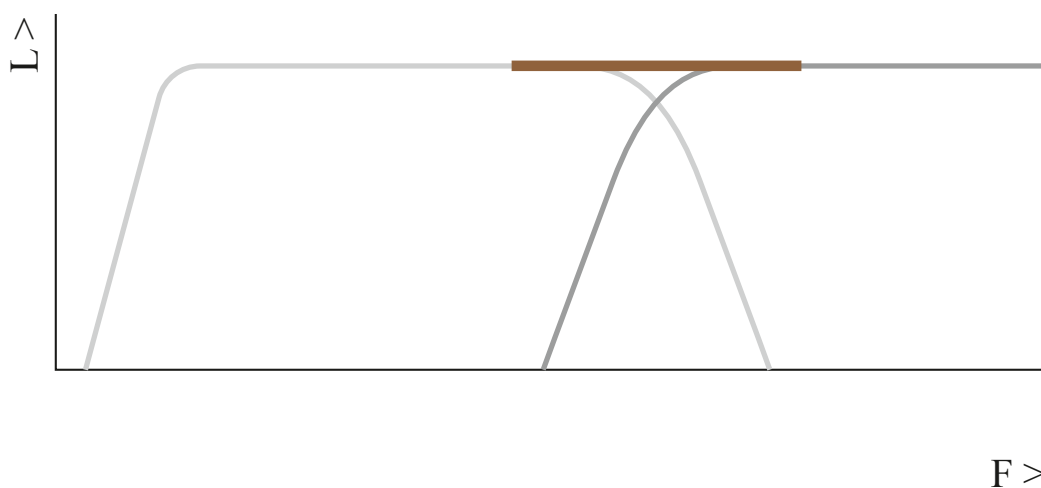


- L: Level
- F: Frequency
- Dark grey line: Main speakers

- Light grey line: Subwoofer
- Brown line: System response

A peak in the response will occur if the filter frequency of the subwoofer is set too high – perhaps with large main speakers that have an extended bass response. The result will be an excess of mid-bass energy that will sound unnatural and bloated.

### Subwoofer filter frequency set optimally



- L: Level
- F: Frequency
- Dark grey line: Main speakers
- Light grey line: Subwoofer
- Brown line: System response

The subwoofer and main speakers are well matched. The system frequency response is smooth without a peak or dip. A well balanced sound will result.

### Phase

With the phase settings you can adjust the phase relationship between the subwoofer and main speakers. If either subwoofer or main speaker are slightly out of phase in relation to the other, it can result in decreased bass output in the frequency response area where they overlap each other.

### Parametric EQ (PEQ)

Provides three bands of low frequency parametric equalisation. Each band offers frequency, gain and Q parameters. The equalisation is set “bypassed” by default.

### Using Parametric Equalisation

The digital signal processing power incorporated in Sub 6 enables three bands of parametric equalisation to be applied to the input signal. Parametric equalisation can be viewed as finely targeted tone control that is able to correct specific frequency response anomalies caused by room acoustics.

It should only be used after the subwoofer position has been finalised.

Each band of parametric equalisation offers three control parameters: frequency, level and Q. “Frequency” defines the centre frequency around which the equalisation band operates, “level” defines the degree of boost or cut, and “Q” defines the width of the equalisation band (a higher Q means a narrower band). These control parameters are illustrated in the diagram opposite.

The Sub 6 Parametric EQ is intended to be used in combination with professional room acoustic analysis to identify response anomalies, however the Dynaudio Sound Meter app (available free from the Apple app store) incorporates a real time frequency analyser that can be used to help identify anomaly frequencies and so guide parametric equalisation set up.

Sit in your main listening position, launch the Sound Meter app and select the RTA option while playing a “pink noise” signal through the subwoofer (pink noise can be found on many music streaming services). Prominent peaks in the response curve displayed by the app will most likely correspond with any audible frequency response anomalies. Equalisation bands can then be set at the anomaly frequencies and the level and Q parameters adjusted to flatten the response curve.

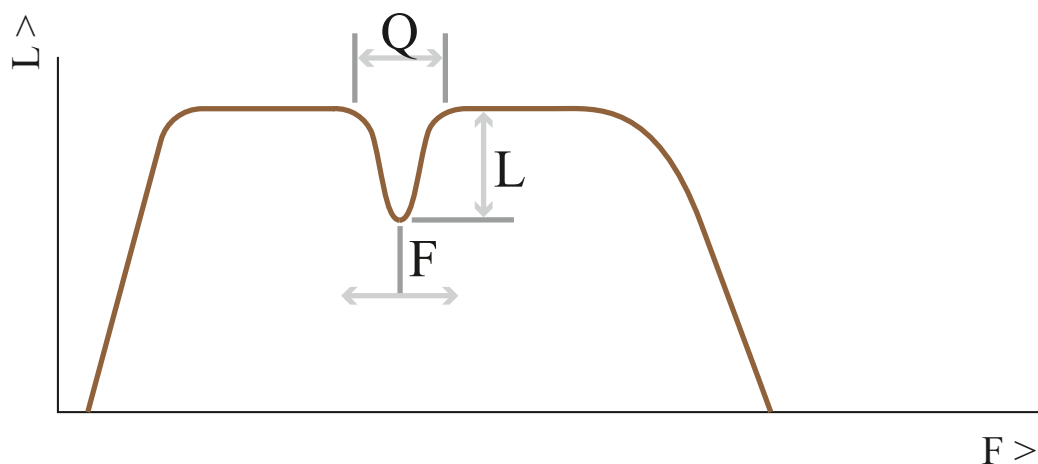
Further guidance on using subwoofer parametric equalisation can be found on the Sub 6 product page at [dynaudio.com](http://dynaudio.com).

#### Note

The diagram shows one band of parametric equalisation set with a relatively high Q (approx 5) and approximately 6 dB of attenuation.

Sub 6 Parametric EQ is a powerful tool and it should be used carefully. In the vast majority of circumstances equalisation should be used to attenuate room anomalies rather than not to boost subwoofer bass. If more bass is required always try repositioning the subwoofer first.

#### Parametric EQ parameters



- L: Level
- F: Frequency
- Q: Quality factor

#### HP Filter

Engages or disengages a 4th order, 80Hz Linkwitz-Riley high-pass filter on the Left/Right outputs. Engaging the

high-pass filter ensures that low frequency signals below 80Hz are not passed to satellite speakers connected to the subwoofer outputs.

#### **Trigger (5 - 12VDC = on)**

Select to enable or disable trigger input switch on.

#### **Left speaker distance**

Select to specify the distance in centimetres of the left main speaker from the listening position.

#### **Right speaker distance**

Select to specify the distance in centimetres of the right main speaker from the listening position.

#### **SUB distance**

Select to specify the distance in centimetres of the subwoofer from the listening position.

#### **Using Distance compensation**

The default setting is 100 cm.

The distance compensation uses the difference between the set [Left speaker distance](#), [Right speaker distance](#) & [SUB distance](#) values to calculate the gain offset and delay required to correctly align your loudspeaker responses. Due to boundary and room artefacts, this distance may not be the exact distance measured. Some trial for the distance setting may be required.

#### **Factory Reset**

Select to return your Sub 6 to its default settings.

#### **Software version**

Displays the installed firmware version.

## **Sub 6 In Use**

Once installed and configured, your Sub 6 should require little attention other than perhaps occasional volume control adjustment to suit different types of programme material.

#### **Grille Removal and replacement**

The Sub 6 can be used with its grilles fitted or removed. To remove the grilles simply pull them carefully away from the cabinet. To refit a grille align its pegs with the fittings on the face of the cabinet and gently push the grille home to secure it in place. Always take care not to damage the moving parts of the drive units when removing or replacing grilles.

#### **Cleaning your subwoofer**

Brush the grille surfaces with a soft brush and the cabinet surfaces with a clean lint-free cloth. Do not use a vacuum cleaner. If you wish to use a cleaning agent, apply it to the cleaning cloth and not directly to the subwoofer. Test a small area first, as some cleaning products may damage some of the surfaces.

#### **Support**

Should you require help or advice there are a variety of support options for Dynaudio products. These can be found at [dynaudio.com](http://dynaudio.com).

#### **Note**

Distances are specified in the Sub 6 configuration menus in order to equalise the signal arrival times from the subwoofer and main speakers at the listening position. This ensures that the phase relationship between the subwoofer and main speakers is correct and that they integrate optimally.

For a central listening position the Left and Right speaker distances should be equal.

If two subwoofers are used their distance to the listening position should be specified individually.

## Sub 6 Troubleshooting

There are various reasons why a subwoofer might not function properly in a system without it being faulty. The following checklist will help solve problems you may encounter. Before consulting your Dynaudio dealer, check this list first.

Check this first:

Check if all signal cables are connected properly.

Check settings in bass management menu of the connected processor/receiver.

Carefully and gradually increase the subwoofer volume level on the processor/receiver.

- Carefully and gradually increase the subwoofer volume level using the subwoofer VOLUME control.

## Sub 6 Troubleshooting Matrix

### **The subwoofer switches itself off although music is playing.**

#### **Cause:**

There is hardly any low-frequency signal available. This can happen if the music or movie itself does not contain very low frequencies (e.g. long dialogues).

The subwoofer will switch on automatically as soon as low frequency signals are detected.

### **The subwoofer will not switch on.**

#### **Cause:**

- AC mains cable has become disconnected.
- Mains switch on the rear is switched to OFF.



Make sure to switch the system off first before making any changes!

- Reconnect mains cable.
- Switch mains back on.
- Check if all signal cables are connected properly.

### **The subwoofer will not switch on automatically.**

#### **Cause:**

- No signal is present on either of the subwoofer's inputs (LED lights red).



Make sure to switch the system off first before making any changes!

- Check if all signal cables are connected properly.
- Check if the subwoofer output on the source is active.

### **Subwoofer is switched on not making any sound.**

#### **Cause:**

- No signal is present on either of the subwoofer inputs.
- In the processor or receiver's bass-management set-up, subwoofer has been disabled.

- Subwoofer volume level has been turned down on the processor/receiver.
- Volume is turned down on the subwoofer controls.



Make sure to switch the system off first before making any changes!

- Check if all signal cables are connected properly.
- Check settings in Bass Management menu of the connected amplifier or receiver.
- Carefully and gradually increase the subwoofer volume level on the amplifier or receiver.
- Carefully and gradually increase the subwoofer volume level on the subwoofer GAIN control.

# Updating the Firmware

To update the firmware of your Dynaudio subwoofer, proceed as follows. Make a note of the settings in the subwoofer as a Factory Reset may be required after update.

## Requirements

- An empty USB stick formatted to FAT32. A maximum capacity of 8GB is preferable.
- The latest firmware file downloaded from [dynaudio.com/support/firmware](https://dynaudio.com/support/firmware)

## Firmware versions

There are two versions of the Sub 6 firmware.

The standard firmware includes crossover presets to match the following Dynaudio products:

- Evoke 10/20/30/50
- Special Forty
- Contour 20/30/60
- Confidence 20/30/50/60
- Focus 20/30/60 XD

The "Legacy" firmware version includes crossover presets to match the following Dynaudio products:

- Special Twenty-Five
- Contour 1.4/3.4 LE
- Confidence C1/C2/C4
- Evidence Temptation/Platinum/Master

## Firmware Update Procedure

1. Unzip the downloaded Zip file.
2. Copy the "DYNAUDIO.bin" firmware file into the root directory of the USB stick.
3. Switch OFF the subwoofer with the rear-panel switch.
4. Insert the USB stick into the USB port at the rear panel labeled "Service".
5. Switch ON the subwoofer with the rear-panel switch.
6. Your subwoofer will automatically download the firmware from the USB stick.
7. After this, let the subwoofer install the full update, which should take 1- 3 minutes. **DO NOT TURN THE DEVICE OFF DURING THIS PROCEDURE.**
8. During this update the LED will change from red to blue, and the display will show various messages about the update progress.
9. After installation is complete, the LED will turn green and the display will return the message: *Update result: Success!*
10. Your firmware update procedure is now finished. Switch OFF the subwoofer and remove the USB stick.

11. Switch the subwoofer ON.
12. Check the firmware version in the menu info screen.



# DYNAUDIO

Sub 6

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