

**NEUROTECHNOLOGY**

**FOCUSONICS®**

Model B

**USER'S MANUAL**

# Introduction

Thank you for purchasing Focusonics speaker by Neurotechnology!

As you probably know, Focusonics is not a traditional speaker – it uses ultrasonic waves to focus and constrain sound to a narrow beam for tens of metres away from the speaker. In the beam the listener is immersed into music or speech while steps away no sound can be heard.

Neurotechnology has made novel, patent pending developments to bring this ultrasound technology closer to a widespread adoption. Whether your application is personal listening, advertising, gaming or other, we wish you an unforgettable experience and look forward for your feedback!

[www.focusonics.com](http://www.focusonics.com)  
Neurotechnology

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# Safety notice

- Focusonics speaker is designed for an indoor use only.
- Do not use the Focusonics speaker in rain/snow as it presents electrical shock and fire hazards and most likely will damage the speaker.
- Do not use the Focusonics speaker in wet/damp conditions or near the water.
- Do not use the Focusonics speaker in an explosive atmosphere.
- Use only dry or slightly damp cloth for cleaning Focusonics speaker. Make sure the speaker is disconnected from the mains outlet.
- Do not cover the Focusonics speaker with items that block the natural air ventilation.
- Do not block the access to the mains socket where the speaker supply cable is plugged so that it can be quickly unplugged in an event of malfunction.
- Do not install the Focusonics speaker near heat sources such as radiators, stoves, etc.
- Follow installation instructions provided in this manual when installing the Focusonics speaker.
- Do not put your ear close to the speaker as it emits ultrasonic waves. Listen to the speaker from recommended distance (>1 metres).
- Focusonics speaker should be serviced by authorized personnel only.
- Do not use the Focusonics speaker with suspected failures. In cases such as, but not limited to, the speaker does not operate as expected, the speaker was exposed to the rain, the speaker was dropped, other objects has been dropped on the speaker, liquid has been spilled on the speaker, have the speaker inspected by qualified personnel before further operation.
- Do not start using the Focusonics speaker if the packaging was damaged.
- Do not open the speaker as this will remove the warranty.

# Package

Device consists of two parts:

- The speaker.
- Power supply unit with power cable to connect it to the mains outlet.
- 3.5mm jack cable to connect line-in source.
- 4 screws for speaker mounting.

# Optional accessories

Optional accessories include:

- VESA wall mount brackets. This can be used for speaker installation on the wall/ceiling.
- VESA mount stand. This can be used to install the speaker on a desk, table, floor and etc.
- Armstrong tile adapter. This can be used to mount the speaker in replacement of a standard Armstrong ceiling tile (60 x 60cm).

These accessories can be bought at [www.focusonics.com](http://www.focusonics.com)

# Installation and Set-up

Focusonics speaker can be installed on the wall/ceiling using VESA wall mount brackets (100 mm x 100mm standard).

The speaker can also be mounted on a VESA stand (100 mm x 100 mm standard) and installed on a desk, table, floor or other. The provided 4 x 4mm screws should be used to attach the speaker to VESA mount brackets or VESA stand.

The speaker can be also inserted into Armstrong tile adapter and installed in replacement of a standard Armstrong ceiling tile (60 cm x 60 cm). The speaker should be mounted 1-10m from the listener for best results.

## Set-up

Connect the provided power supply unit to the power outlet (120/230 VAC, 50/60 Hz). Connect the output of the power supply to the designated power input socket at the back of the speaker. The red light should lit up at the right bottom corner at the front of the speaker indicating that the power is supplied to the speaker. You are now ready to start using the Focusonics speaker.

## Installation tips for best sound localization results

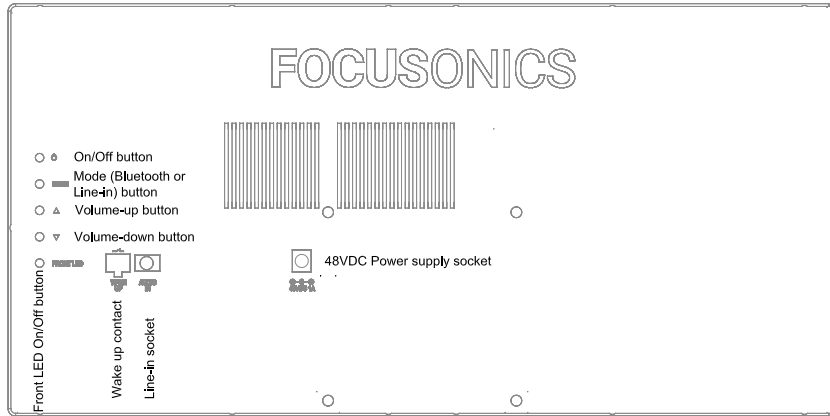
- Do not use the speaker in very small spaces. Reflections from the walls and other objects may lead to the sound filling the whole space. The speaker works best in large, open spaces.
- Keep significant distance from the speaker to the listener, the distance is needed for ultrasonic waves to demodulate and achieve highest audible level. 2-4 metre range is most optimal for Model B.
- Sound absorbing material such as carpets, curtains, etc. could be used in places where reflections occur to improve sound localization.
- Install the speaker high enough if blocking of the sound beam by a passing person needs to be avoided.

## 'Virtual source' effects

Focusonics speaker uses ultrasonic waves to reproduce sound and as ultrasonic waves reflect very well from most surfaces, the speaker can be used to create 'virtual source' effect. If you direct the speaker to a certain object that reflect ultrasonic waves well, it will appear that the sound is coming from that object rather than from the speaker itself. This object can be, for instance, a TV screen, a sculpture, a glass wall, etc. Multiple reflections can be used to fill the space with various sounds to achieve unique experiences.

For example, bird/animal sounds can be used to create an illusion of their presence in a much more convincing manner than using traditional speakers as the sounds would appear to originate from various objects/surfaces rather than filling the whole space with sound.

# Using the device



Once the speaker is installed and set-up, press an On/Off button to turn the device on.

The device has two audio input means: line-in and Bluetooth. The line-in audio signal should be provided via 3.5mm jack plug located at the back panel of the speaker. The selection between the audio sources can be made using the MODE button. The green light indicates that line-in source is selected while blue light indicates Bluetooth source.

The speaker volume is adjusted with volume-up/down buttons.

FRONT LED button turns on/off the led indicator.

There is a third mode which can be selected using MODE button indicated by white light. In this mode the Bluetooth player is triggered by Wake-up contacts. Refer to next section for more details.

# Wake up Contacts

The speaker provides Wake-up contacts that can be used to control the playback of connected Bluetooth player. For example, a motion sensor can be connected to the Wake-up contacts and the audio track is only played when a motion sensor is activated by the presence of a person.

When Wake-up contacts are left open the playback is paused on the Bluetooth player. When Wake-up contacts are short-circuited the audio track on the player is rewind and starts playing from the beginning. The Bluetooth player should support AVRCP profile for the external control to work.

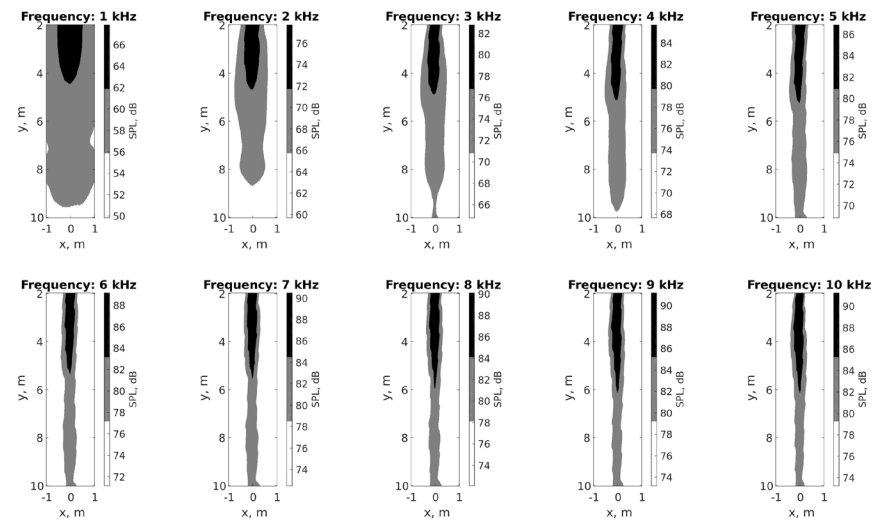
# Bluetooth

In order to connect to the Focusonics speaker via Bluetooth, enable bluetooth on your audio device (smartphone, laptop, etc) and connect to a device called 'Focusonics'.

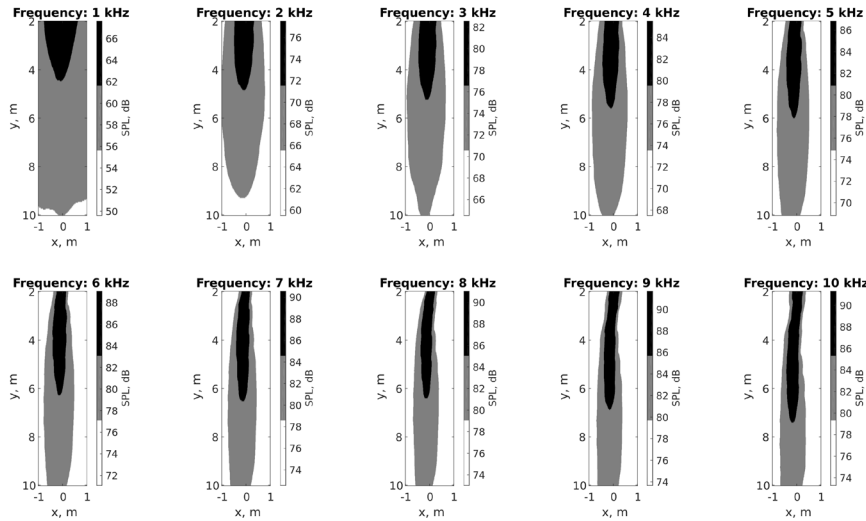
# Specifications

Below are shown beam characteristics and frequency response of the Focusonics™ speaker.

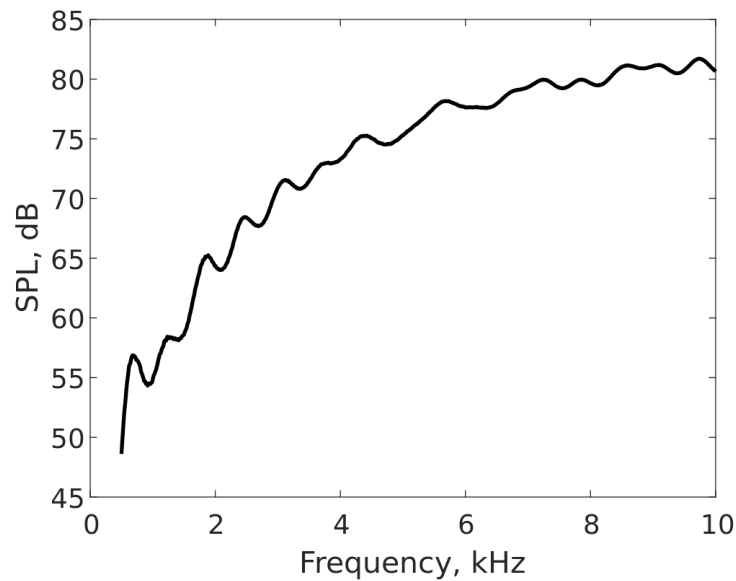
Power supply	230 VAC 50Hz / 120VAC 60Hz 40W
Weight	Speaker: 1.4 kg Shipping box: 2.5 kg
Dimensions	Speaker: 442 x 221 x 25mm Total package: 520 x 295 x 135 mm



Beam profile at different frequencies along the wider dimension of the speaker.



Beam profile at different frequencies along a shorter dimension of the speaker.



Frequency response at 1m distance.

## Warranty

Neurotechnology Ltd. warrants this product against defects in materials and workmanship for one (1) year from purchase date under normal consumer use conditions. If the product fails during normal and proper use within the warranty period, Neurotechnology will repair or replace the product. The liability of Neurotechnology does not include any incidental or consequential damages.

This warranty does not include failure caused by improper installation, operation, maintenance, accident, damage, misuse, modifications not approved by Neurotechnology, normal wear and tear, any event or act outside Neurotechnology's control.

This warranty does not apply if serial number of the product has been altered or removed, warranty seals have been damaged or altered or the product has been tampered or repaired by unauthorized personnel.

## Support

Please contact Neurotechnology if you have any problems using the

**Focusonics™ speaker.**

Neurotechnology Ltd.

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