



User Manual

AVAA C214



10.2023

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1 Introduction

Thank you very much, and congratulations on your decision to purchase our digital active bass trap, the AVAA C214.

You can use it in 2 different modes: Standalone Mode or Remote Mode.

- **Standalone Mode** (not connected to a wireless network): when you unpack your AVAA C214 and turn it on for the first time, it will work like the AVAA C20, you can manually turn it on and off. The LED is green when it is working.

- **Remote Mode** (connected to a wireless network): thanks to digital technology, you can now control your AVAA C214 using an app. When you are in this mode, the LED is blue.

In this user manual, we will always refer to "Standalone Mode" and "Remote Mode".

Carefully following the instructions in this manual will ensure that your system will give you many years of reliable and trouble free operations.

For the latest information, help or advice, please contact your local PSI Audio representative or PSI Audio directly.

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2 Safety Instruction



This symbol alerts the user to the presence of electrical power within the product that may be of sufficient magnitude to constitute a risk of electric shock.

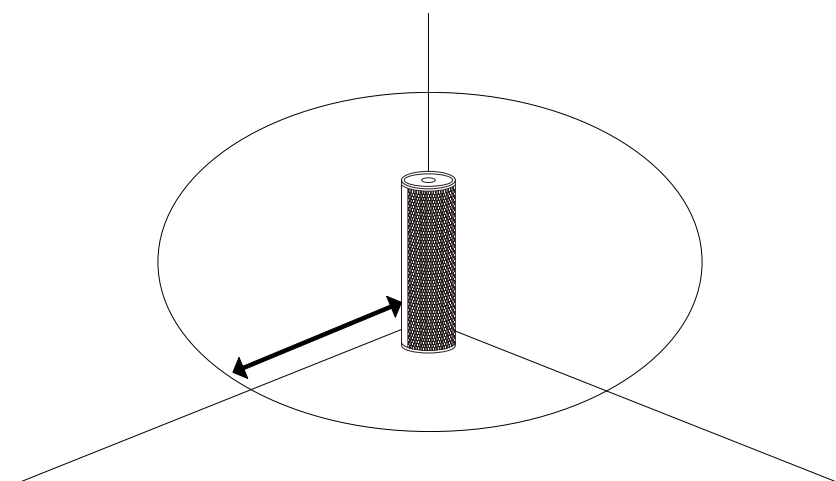


This symbol alerts the user to important operating and maintenance (servicing) instructions or warnings.



2.1 Warnings

- Please read and follow the instructions carefully prior to operating the AVAA C214.
- An AVAA C214 positioned above floor level represents a fall hazard. Please make sure your device is always securely positioned or mounted in a stable position and can't fall. In particular make sure no child can make it fall.
- Please do not open the AVAA C214 device - risk of electric shock.
- Make sure not to expose the AVAA C214 to any form of liquid. For cleaning, use only a dry cloth. In order to prevent spills, do not place any containers containing liquid on the AVAA. Do not use the AVAA close to water as this may create an electric shock hazard.
- Only use three wire mains cables and connectors with earth (grounding) according to your country standard.
- Do not operate the AVAA C214 in a confined environment:
Your AVAA has been designed to be placed on the rubber foot located under the case. We recommend that you place it on a flat, solid and stable surface.
- The AVAA C214 is designed to work in rooms of minimum 10 m². It is generally most effective when positioned in a corner. Avoid positioning any large reflective object less than 1 meter away from the front of the AVAA C214 as it may cause instability.
- Do not operate or install the AVAA C214 near any kind of heat source.
- Only operate the AVAA C214 with accessories specified by PSI Audio.



2.2 Service



The AVAA C214 contains no user-serviceable parts. Service must be performed by qualified personnel. The unit must not be opened by the user – risk of a severe electric shock.

Servicing is required when:

- the AVAA C214 has been damaged in some way, such as when the power-supply cord or plug is damaged
- the AVAA C214 has suffered from exposure to rain or moisture
- liquid has been spilled into the AVAA C214
- objects have been dropped into the AVAA C214
- the AVAA C214 does not work correctly

Software update:

- If software or firmware update is required, you will see it in your Smartphone app:



Spare part supply:

- for ordering, please contact your authorized reseller, mentioning your AVAA C214 model and serial number (see point 3.4.).

3 General Overview

3.1 Description

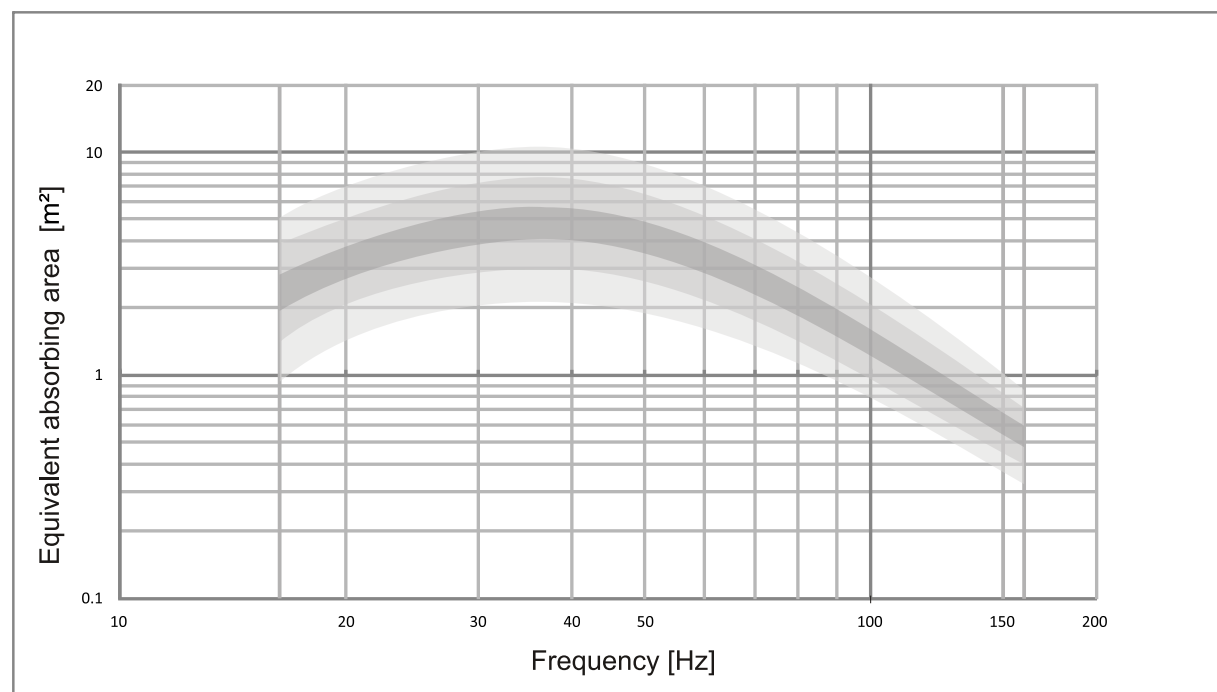
The AVAA C214 is designed to absorb the standing modes between 15 and 160 Hz in a room. Above these frequencies, passive systems are effective. For best results, the AVAA C214 should be installed in a room where medium and high frequencies have already been treated with passive systems.

With frequencies below 160 Hz, each operating AVAA C214 will have the same effect as a hole in the wall much larger than the dimensions of the AVAA C214.

The exact size will depend on the frequency and environment but typically ranges between 15 and 45 times the size of the AVAA C214..

The graph hereunder shows the typical equivalent absorption area of an active AVAA over the frequency bandwidth it is designed to absorb.

Note that an AVAA C214 is approximately 0.13 m² so an equivalent sound absorbing area of 4 m² is 30 times the surface of the AVAA.



In normal operating conditions, the AVAA C214 does not emit any audible sound or anti-sound but only absorbs low frequencies in a very effective way considering its size. Furthermore, it has no impact on the direct sound from your speakers or other source.

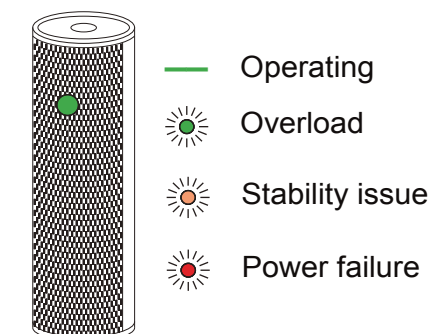
3.2 Before you start

Special care has been taken in the packaging of your PSI Audio product. Before you start to install it, please check that the following parts are included:

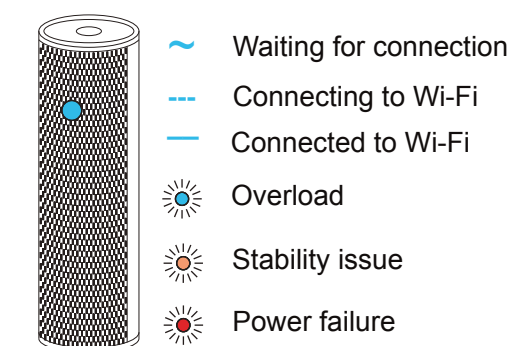
- AVAA C214
- Warranty certificate of calibration
- Quickstart Guide (also included in this User Manual)

3.3 Front Panel Description

Standalone mode - GREEN LED ●
(without wireless network)

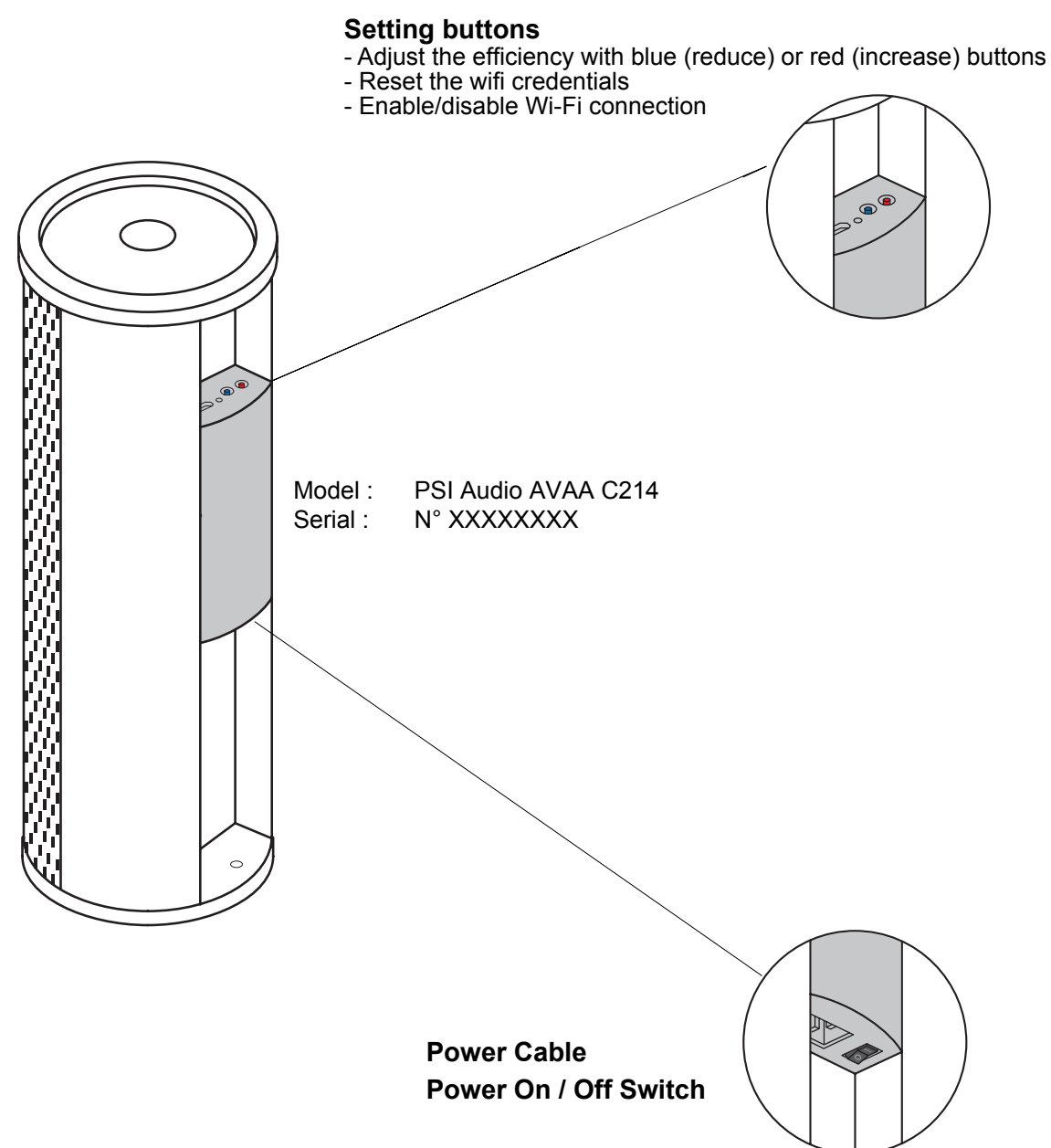


Remote mode - BLUE LED ●
(Controlled by an app)



For the detailed procedure on how to connect your AVAA C214 to the Wi-Fi network, please refer to the chapter 6.

3.4 Rear Panel Description



4 Quick Start

Setting up normally consists in testing the AVAA C214 in a couple of different possible locations and using a remote control can help significantly. However, in case you need to get started quickly, please follow the Quickstart Guide on the next page. The rest of this manual will assist you in setting up your AVAA C214 to your listening environment.

- Connect the power cable whilst paying attention to the warnings mentioned under the chapter safety instructions.
- The AVAA is a large bandwidth absorber designed to be effective between 15 and 160 Hz in environments that are already absorbing in higher frequencies such as living rooms and studios. In these environments no adjustment is necessary.
- We draw your attention to the fact that this AVAA C214 may, in some critical conditions, become unstable and emit noise. PSI Audio declines all responsibility for eventual damage caused by the use of their AVAA under unstable conditions.
- The AVAA C214 has the advantage of being able to adjust its sensitivity (gain) to the best value, depending on the environment it is in. The sensitivity can be increased until the first sign of instability appears.

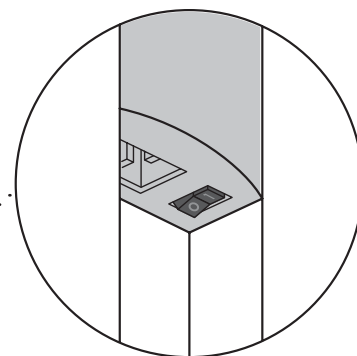
QUICKSTART GUIDE

AVAA C214

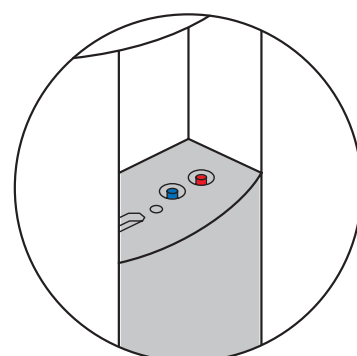
1 CONNECT TO POWER



2 SWITCH ON



3 PLACE IN CORNER AND/OR TEST IN DIFFERENT LOCATIONS



4 ADJUST GAIN WITH BUTTONS MAX ONE LEVEL BELOW FIRST SIGNS OF INSTABILITY



DOWNLOAD USER MANUAL



5 APPLICATION FOR REMOTE CONTROL



PSI AUDIO AVAA

5 Operation

5.1 Standalone Mode - Power ON LED (Green)

The LED on the front panel indicates that the AVAA C214 is ready for operation. If this light does not come up, check that it is connected to the AC power supply. In Standalone Mode, the AVAA operates normally, but cannot be controlled without an application. You can also increase or decrease its efficiency (see point 5.5).

5.2 Remote Mode - Power ON LED (Blue)

To enter the Remote Mode, please follow the steps under the point 6.2 - Enable/Disable Wi-Fi. When your AVAA C214 is working in Remote Mode, the front LED will become blue instead of green.

5.3 Limiter

An internal limiter monitors the pressure seen by the AVAA. If the maximal absorption is reached, the LED will shine brighter during ~2 seconds. This is the case if the AVAA C214 is exposed and operating with sound levels above 115 dB (where the AVAA is positioned) and working at its full capacity. In this case the AVAA LED will shine brighter as an indication that the AVAA can't absorb any further. This does not represent an issue, however it is recommended to reduce the sound level. If the LED shines bright continuously, this means that the AVAA C214 is doing its best to absorb and AVAAs in different locations are generally more effective than positioned in the same location.

5.4 Standby / Overheat (Red LED)

The red LED on the front panel indicates that the AVAA is in standby mode. This mode can only be accessed via the remote control application and then the absorber must be connected to a wireless network. The LED may also turn red in the event of overheating. Typical causes of overheat are lack of ventilation. Check that there is sufficient air circulation behind and in front of the AVAA C214. Positioning the AVAA in a hot location can also cause overheating (radiators, direct sunlight, etc).

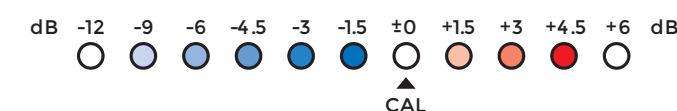
5.5 Controlling gain of your AVAA

When placed in some extremely reverberant environments, it could be useful to lower the gain of the AVAA. On the other hand, if the AVAA is placed in a very well treated room, its gain can be increased to enhance the absorption. Using the back panel rear buttons helps you find the best gain for your AVAA.

- Pressing the blue button will lower the gain
 - Pressing the red button will increase the gain
- The complete range is -12 dB to +6 dB.

At minimal/maximal gain and in between (0dB calibration state), a white led will appear to show you these specific values, as shown in the illustration herunder:

ADJUST GAIN WITH BUTTONS MAX ONE LEVEL BELOW FIRST SIGNS OF INSTABILITY



6 Remote Mode (wireless network)

6.1 Remote Control

PSI Audio offers you a new experience by using a smartphone as a remote control. To take control of your AVAA C214, please download the application on the stores (search for "PSI Audio").

The Smartphone app allows:

- Remote control (ON/OFF) of each AVAA C214 individually or in a group.
- Remote control the gain (efficiency) of each AVAA C214 individually.
- Link to help on the PSI Audio website.
- Upgrade the AVAA C214 firmware.



Once downloaded, please follow the steps to pair your AVAA C214 to your wireless network.

Before starting the pairing operation, please check that your AVAA(s) wireless network is enabled. Please refer to the "Enable/disable wireless network" (section 6.2).

Use only 2.4 GHz wifi network!

A 2.4 GHz Wi-Fi network operates in the 2.4 GHz frequency band, which provides several advantages over 5 GHz Wi-Fi networks:

- **Wider Range:** The 2.4 GHz frequency band has a longer wavelength, which means it can penetrate walls and other obstacles more effectively, providing a wider coverage area for the wireless network signal.

- **Better Compatibility:** Older devices and some smart home devices operate in the 2.4 GHz frequency band, so a 2.4 GHz Wi-Fi network provides better compatibility with these devices.

- **Lower Interference:** The 2.4 GHz frequency band is less congested than the 5 GHz frequency band, so there's less interference from other devices that use the same band, such as cordless phones, baby monitors, and microwave ovens.

6.2 Enable/Disable wireless network

Your AVAA C214 can be connected to your wireless network. In the factory default state of the AVAA C214, wireless network access is disabled.

If you want to use the remote control or get the latest firmware version for your device, you must pair the AVAA C214 to a Wi-Fi network. (For the remote control, the network does not need to be connected to the Internet).

Enable Wi-Fi

To enable the wireless network, please follow these steps:

1. Switch off (AC power supply) your AVAA C214
2. Press on the rear BLUE button and keep it pressed
3. Switch on your AVAA C214 (AC power supply)
4. Please, wait until a blink **blue** LEDs (~2sec) signal to ensure your AVAA has its Wi-Fi enable.
The front led should now **breath blue**.
5. You are ready to connect your AVAA(s) with your smartphone application.

Disable Wi-Fi

To disable the wireless network, please follow these steps:

1. Switch off (AC power supply) your AVAA C214
2. Press and hold the rear BLUE button on the rear of the device
3. Switch on (AC power supply) your AVAA C214
4. Wait until a **blue** LED flashes (~2sec) to ensure that your AVAA C214 has disabled its wireless network.
5. Your AVAA C214 wireless antenna is OFF and front LED is **green**



7 Placement and positioning in room

7.1 Environment

The AVAA C214 is designed to be effective in a living room or studio that typically have a $Rt60$ of less than 2 seconds for frequencies above 200 Hz. In small and highly reverberating rooms, you can lower the gain.

7.2 Positioning

The effect of the AVAA C214 depends on the acoustic characteristics of the room as well as the position of the loudspeakers.

The most effective position for the AVAA C214 is in a location where the walls contribute most to the room modes that are disturbing in the listening position. In practice it is very easy to position the AVAA effectively after a few comparative trials.

Usual positioning of the AVAA, based on our experience

The starting position is in corners behind the source speakers as this is the most effective position in a majority of cases. However, depending on the structure of the room boundaries and listening position, other AVAA locations might turn out to be more effective. Try positioning them in different corners or against walls and evaluate effectiveness.

In practice it is quick and easy finding the best location by following the basic rules:

- AVAAs positioned in corners are more effective
- AVAAs located against rigid walls are more effective
- AVAAs positioned in corners behind the source are in general more effective than other similar corners

Bear in mind that the AVAA C214 is designed to absorb long wavelengths, so there's not much to be gained from positioning the AVAA with great precision

Positioning the AVAAs based on room measurements:

A more technical "2 steps process" can also be used to identify the best location for the AVAAs.

1 - Identify the disturbing room modes:

Assuming the loudspeakers and listening position have been set, measure the frequency decay time in the listening position.

Note that the most disturbing room modes are the ones with the longest extinction time and not necessarily the peaks and nulls that are the result of inevitable first reflections. You may typically identify 3 to 6 room modes.

2 - Identify the highest pressure zones for each problematic room mode:

Play a sine wave at the frequency of each disturbing room mode.

For each of these frequencies, walk around the walls of the room and note down the highest-pressure areas. You can do this with a sound level meter or listening with a single ear.

As a result, you should have a map of your room highlighting the wall areas most contributing to each disturbing room mode. This will clearly show the best locations for the AVAAs.

7.3 Mounting with optional feet

You can hang your AVAA C214 from the ceiling or wall using the optional mounting feet. They can also be useful if you want to position the AVAA C214 horizontally on the floor. Remember that any object positioned above floor level represents a fall hazard. Make sure your AVAA are always securely positioned or mounted in a stable position and can't fall. In particular make sure no child can make them fall.



8 Troubleshooting

8.1 Power on LED does not light up

Please check that the power switch is set on the ON position and that the mains cable is properly connected to the mains. If the problem persists, check the fuse, the voltage selector and the AC power voltage. If this doesn't solve the problem, please contact PSI Audio or a PSI Audio authorised dealer.

8.2 AVAA C214 is unstable and emits noise

In normal operating mode the AVAA C214 doesn't emit any audible sound. The presence of reverberating objects in the near field of the AVAA may destabilise the system and produce noise or whistling. If the AVAA C214 becomes unstable you will distinctly hear it until the overload protection is reached, the system stops briefly and starts again.

- Remove any large reflective object that is close to the AVAA C214.
- Try positioning the AVAA C214 in a different location.

8.3 Connection problem with the remote control

It might be possible that your smartphone does not find the AVAA C214 that you would like to pair with. In this case, please check that your internet router/box has not an automatic configuration of the frequency range of the wireless network.

To pair your AVAA, it is mandatory to have a 2.4 GHz frequency for the wireless network. Sometimes the router prefer 5 GHz which is not compatible with the AVAA antenna.

To change this on your internet router, please check the manual of your router and disable the automatic frequency function. You can also try to generate 2 distinct network (one at 2.4 GHz and one at 5GHz).

9 Certificates of conformities

9.1 C.E. & RoHS Conformities

PSI Audio products have been tested and calibrated according to the highest quality standards. An individual calibration diagram is provided with each AVAA produced.

The PSI Audio products have been tested according to EU directives and amendments:

Low voltage directive (LVD), 2006/95/EC
Electromagnetic compatibility directive (EMC), 2004/108/EC
The relevant technical standards are:

EN 60065:	1998 Audio, video and similar apparatus – Safety requirements (Class 1)
EN 55103-1/E1:	1996 Product Standard – Emission
	Audio, Video and audio-visual apparatus for professional use
EN 55103-2/E1:	1996 Product Standard – Immunity
	Audio, Video and audio-visual apparatus for professional use

This product is manufactured according to the European directive 2002/95/EC



9.2 Compliance to FCC Rules

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

Test report: 1472/2022



AVAA C214

www.psiaudio.swiss info@psiaudio.swiss

10 Warranty

Our products undergo several steps of quality control to ensure they leave our factory in perfect condition. We offer a warranty against any manufacturing or material defect for a period of 5 years on all electronics and transducers and 2 years on the aluminium boxes. Only Relec SA is able to qualify a manufacturing or material defect and its eligibility to be covered by the warranty. Wear and tear is not covered by the warranty.

Please contact your reseller for any query about warranty or servicing.
We kindly remind the user that unauthorised servicing can void the warranty. In order to provide a quality service, we ask the user to always include the warranty card at each service.

If goods need to be returned to the manufacturer (Relec SA), the symptoms must be clearly mentioned. In case of warranty, the parts and labour costs are at the charge of the manufacturer. If no defect in workmanship is detected, the warranty is considered invalid. A quote for the repair will be sent and the relative cost charged to the customer.

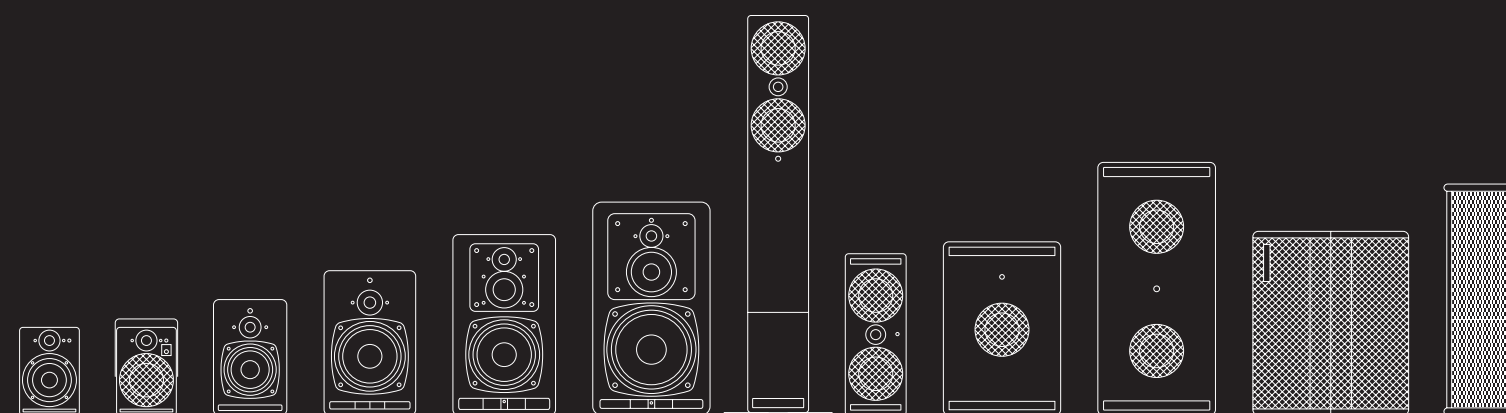
For services (covered or not by warranty), the expenses and the risks of the transports both ways between the customer and his supplier are the responsibility and at the charge of the customer.

For any other provision, the Swiss code of obligations, Articles 197 to 210 will apply.

For any legal action, reference will apply to the Court of Yverdon-les-Bains (Switzerland) only.



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