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Venu 210i V2

The ultimate choice

USER GUIDE V2.0

Contents

1 Safety and Regulations

1.1 Important safety instructions

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 of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Safety instructions - read this first

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 a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat source such as radiators, heat registers, stoves, or other such apparatus that produce heat.
9. Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is 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 power cords from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit the apparatus.
11. Only use attachments and accessories specified by Void Acoustics.
12. Only use 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 the 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 when the 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. Since the mains power supply cord attachment plug is used to disconnect the device, the plug should always be easily accessible.
16. Void loudspeakers can produce sound levels capable of causing permanent hearing damage from prolonged exposure. The higher the sound level, the less exposure needed to cause such damage. Avoid prolonged exposure to the high sound levels from the loudspeaker.

1.2 Limitations

This guide is provided to help familiarise the user with the loudspeaker system and its accessories. It is not intended to provide comprehensive electrical, fire, mechanical and noise training and is not a substitute for industry-approved training. Nor does this guide absolve the user of their obligation to comply with all relevant safety legislation and codes of practice. While every care has been taken in creating this guide, safety is user-dependent and Void Acoustics Research Ltd cannot guarantee complete safety whenever the system is rigged and operated.

1.3 EC declaration of conformity

For EC Declaration of Conformity please go to:

www.voidacoustics.com/eu-declaration-loudspeakers

1.4 UKCA marking

For details of the UKCA marking go to:

www.voidacoustics.com/uk-declaration-loudspeakers

1.5 Warranty statement

For warranty statement go to:

https://voidacoustics.com/terms-conditions/

1.6 WEEE directive

If the time arises to throw away your product, please recycle all the components possible.

This symbol indicates that when the end-user wishes to discard this product, it must be sent to separate collection facilities for recovery and recycling. By separating this product from other household-type waste, the volume of waste sent to incinerators or land-fills will be reduced and natural resources will thus be conserved.

The Waste Electrical and Electronic Equipment Directive (WEEE Directive) aims to minimise the impact of electrical and electronic goods on the environment. Void Acoustics Research Ltd complies with the Directive 2002/96/EC and 2003/108/EC of the European Parliament on waste electrical finance the cost of treatment and recovery of electronic equipment (WEEE) in order to reduce the amount of WEEE that is being disposed of in land-fill sites. All of our products are marked with the WEEE symbol; this indicates that this product must NOT be disposed of with other waste. Instead it is the user's responsibility to dispose of their waste electrical and electronic equipment by handing it over to an approved reprocessor, or by returning it to Void Acoustics Research Ltd for reprocessing. For more information about where you can send your waste equipment for recycling, please contact Void Acoustics Research Ltd or one of your local distributors.

2 Unpacking and Checking

All Void Acoustics products are carefully manufactured and thoroughly tested before being despatched. Your dealer will ensure that your Void products are in pristine condition before being forwarded to you but mistakes and accidents can happen.

Before signing for your delivery:

- Inspect your shipment for any signs of contamination, abuse or transit damage as soon as you receive it
- Check your Void Acoustics delivery fully against your order
- If your shipment is incomplete or any of its contents are found to be damaged; inform the shipping company and inform your dealer.

When you are removing your Venu 210i V2 loudspeaker from its original packaging:

- Venu 210i V2 loudspeakers come double boxed and each box is stapled shut; take care when unboxing and removing the staples to avoid injury or damage to the loudspeaker
- If you need to place the Venu loudspeaker on a flat surface ensure you use a lint free product to protect the finish
- When you have removed the Venu 210i V2 loudspeaker from the packaging inspect it to ensure there is no damage and keep all original packaging in case it needs to be returned for any reason.

See section 1.5 for warranty conditions and see section 7 if your product needs servicing.

3 About

3.1 Welcome

Many thanks for purchasing this Void Acoustics Venu 210i V2 loudspeaker. We truly appreciate your support. At Void, we design, manufacture and distribute advanced professional audio systems for the installed and live sound market sectors. Like all Void products, our highly skilled and experienced engineers have successfully combined pioneering technologies with groundbreaking design aesthetics, to bring you superior sound quality and visual innovation. In buying this product, you are now part of the Void family and we hope using it brings you years of satisfaction. This guide will help you both use this product safely and ensure it performs to its full capability.

3.2 Venu 210i V2 overview

The Venu 210i V2 is a 1500 Watt, self-powered, double 10" reflex-loaded low frequency enclosure capable of powering up to four mid-high enclosures from its built-in dual 750 Watt power modules. Providing a frequency response of 40 Hz – 150 kHz $\pm$3 dB and a continuous output of 122 dB, peaking at 128 dB, it is ideal for filling venues with noteworthy levels of bass.

speakON™ sockets are provided for quick and reliable connections and a protected rear connector panel allows the enclosure to be placed against a rear wall without damaging the audio or power connections.

The 210i V2 also features DSP for loudspeaker control and advanced signal processing capabilities that can be accessed via the rear ethernet port. Add to this the evocative Void sound from the new range of custom designed components and it's clear that Venu is the ultimate installation series.

3.3 Key features

- 3000 W RMS (1500 W + 2 x 750W)
- Capable of powering up to four mid high enclosures
- 2 x 10" low frequency drivers
- Built-in DSP
- Textured Warnex finish, optional custom colours
- Perforated steel grille

3.4 Venu 210i V2 specifications

Bass frequency range	40 Hz - 150 Hz ± 3 dB
Input	2 x 10 kΩ balanced
Maximum output	122 dB cont, 128 dB peak
Driver configuration	2 x 10" LF
Height	334 mm (13.1")
Width	676 mm (26.6")
Depth	530 mm (20.9")
Weight	33 kg (72.8 lbs)
Enclosure	15 mm birch plywood
Finish	Textured Warnex
Grille	Powder-coated perforated steel - foam filter
Output	2 x Neutrik speakON™
2-channel output mode	
4 Ω / Ch (balanced)	750 W
8 Ω / Ch (balanced)	400 W
Max output voltage	78 V_{peak}
Max output current	30 A_{peak}
Nominal power requirement	AC 100 V - 240 V, 50/60 Hz with PFC
Consumption	
Standby	< 1 W
Idle	≤ 10.2 W
1/4 of max output power @ 4 Ω	600 W
Amplifier and DSP features	
DSP	Analogue Devices SigmaDSP™
S/N Ratio	115 dB
Crosstalk separation	85 dB @ 1kHz
Input sensitivity	3 V_{RMS} / 11.7 dBu
Input impedance	10 kΩ balanced
THD+N / DIM100	< 0.08% from 0.1 W to full power (typically <0.05%)
Slew rate	50 V/µs @ 8 Ω, input filter bypassed
Damping factor @ 8 Ω	<10000 @ 100 Hz
Delay	340 ms input delay, 10 ms per channel output delay
Input equalizer	5 parametric equalizers: hi/lo-shelving, all-pass, band-pass, band-stop, hi/lo-stop
Output equalizer	Parametric IIR filters: peaking, hi/lo-shelving, all-pass, band-pass, band-stop, hi/lo-pass
Crossover	Butterworth, Linkwitz-Riley, Bessel: 6 dB/oct to 48 dB/oct (IIR)

3 About

3.5 Venu 210i V2 dimensions

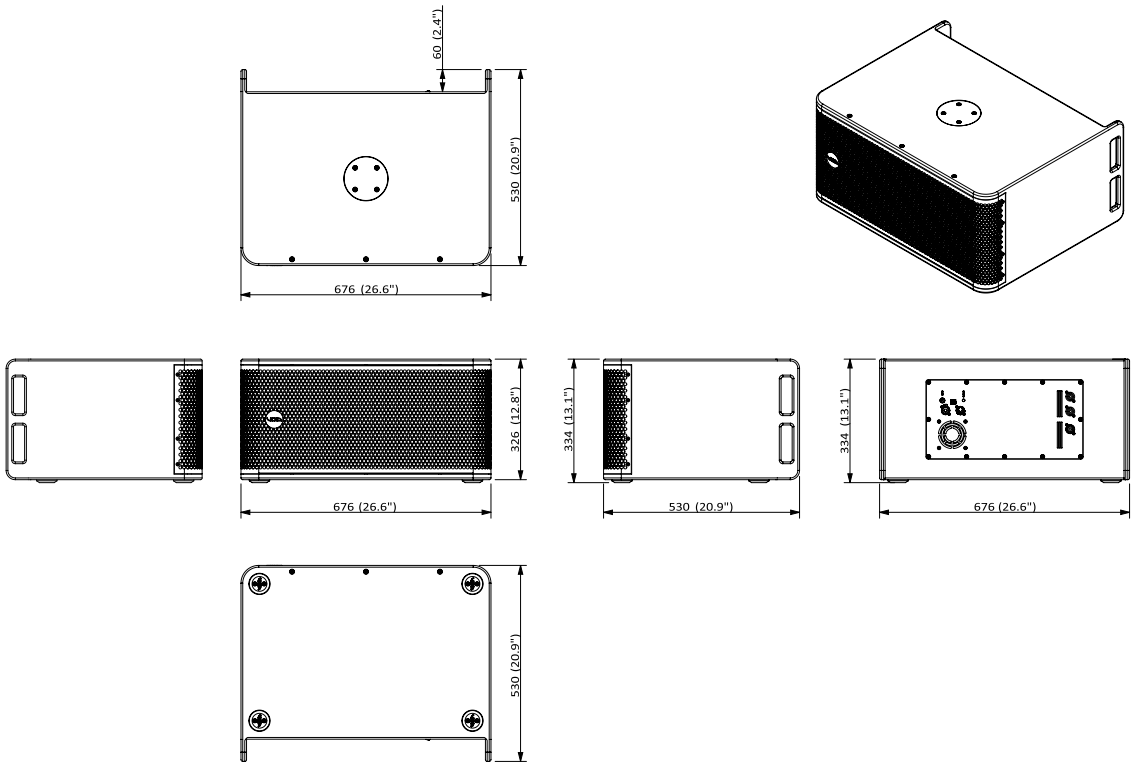


Figure 3.1: Dimensions

4 Cable and Wiring

4.1 Electrical safety

To avoid electrical hazards please note the following:

- Do not access the inside of any electrical equipment. Refer servicing to Void-approved service agents.

4.2 Cable considerations for fixed installations

We recommend specifying installation-grade Low Smoke Zero Halogen (LSZH) cables for permanent installations. The cables should use Oxygen Free Copper (OFC) of grade C11000 or above. Cables for permanent installations should be compliant with the following standards:

- IEC 60332.1 Fire retardancy of a single cable
- IEC 60332.3C Fire retardancy of bunched cables
- IEC 60754.1 Amount of Halogen Gas Emissions
- IEC 60754.2 Degree of acidity of released gases
- IEC 61034.2 Measurement of smoke density.

4.3 Venu 210i V2 wiring

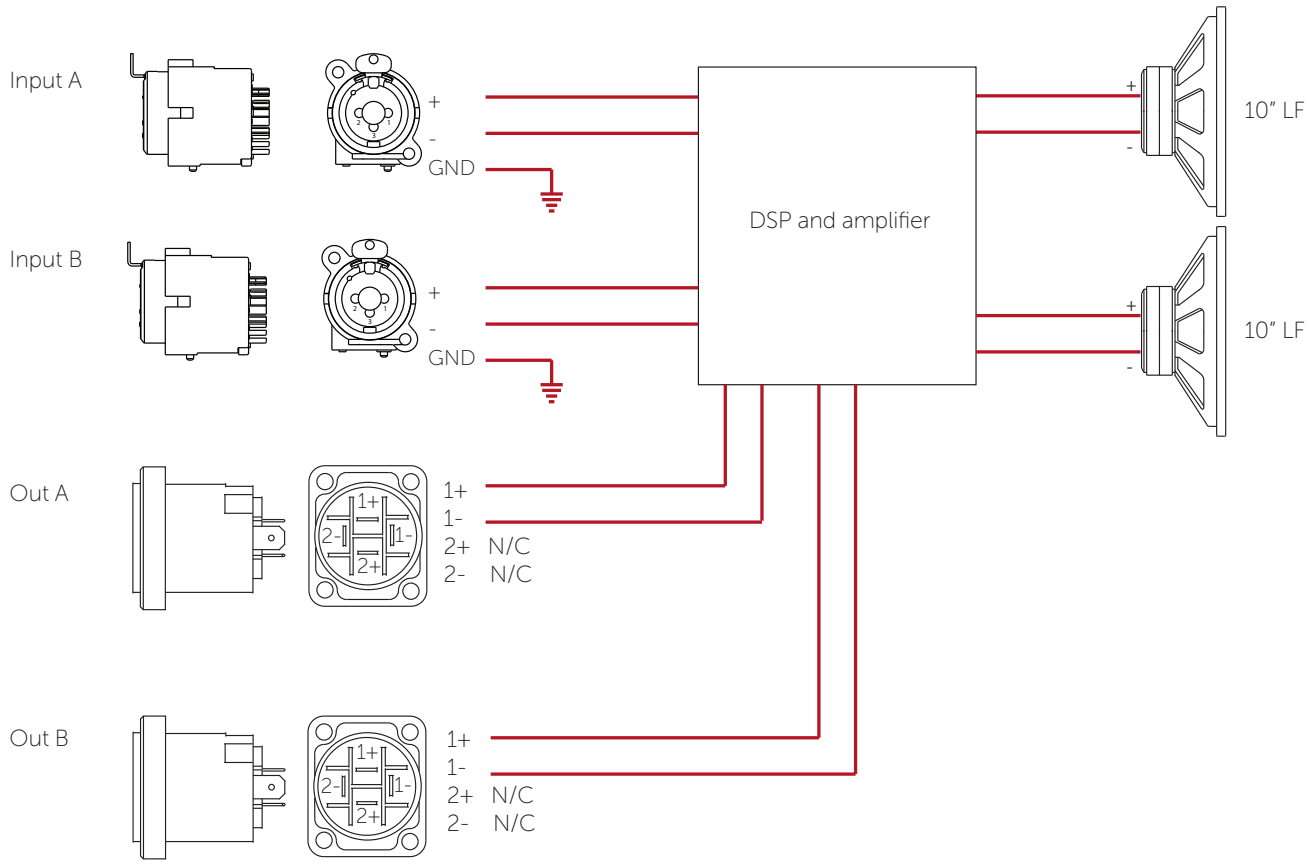


Figure 4.1: Venu 210i V2 wiring diagram

4.4 Input connectors

Analogue input XLR-M pinout

Pin 1	GND
Pin 2	Hot +
Pin 3	Cold -

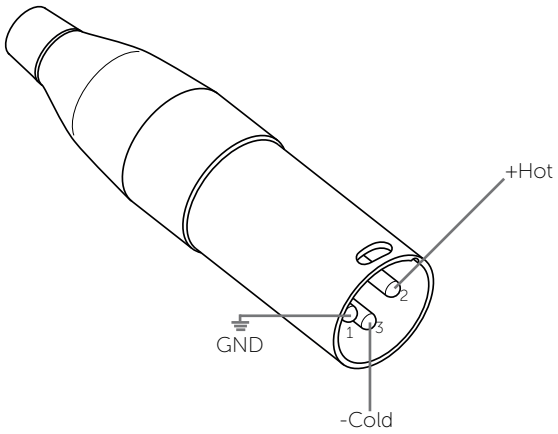


Figure 4.2: XLR-M diagram

Analogue input TRS Jack pinout

Tip	Hot +
Ring	Cold -
Sleeve	GND

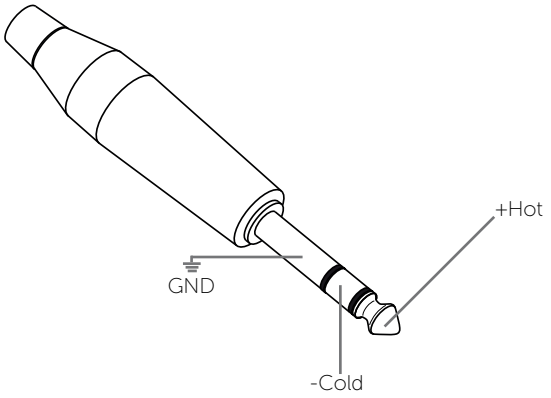


Figure 4.3: TRS Jack diagram

4.5 Output connectors

Loudspeaker output Neutrik speakON™

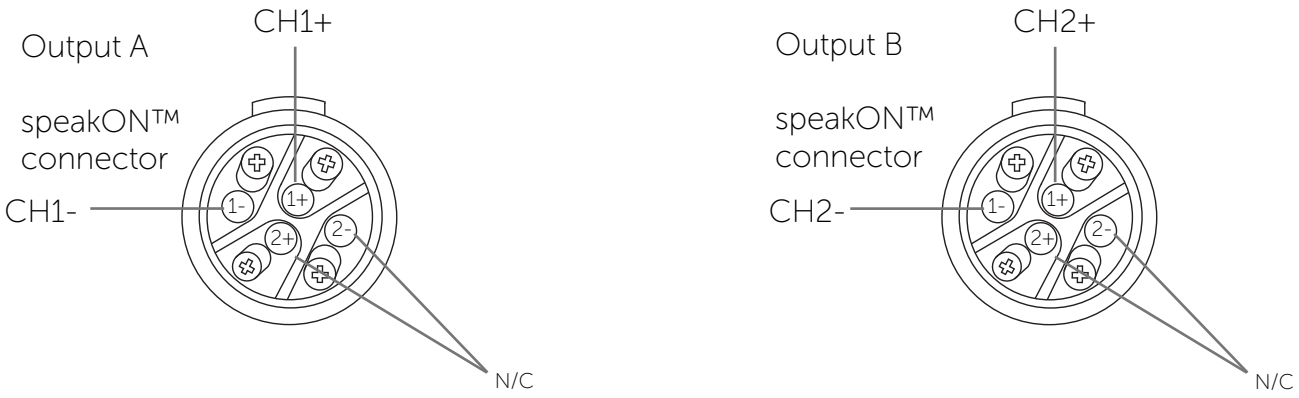


Figure 4.4: Channel 1 and 2 speakON™ connector diagram. Note: pins 2+/2- are not connected.

5 Venu 210i V2 DSP

5.1 Components

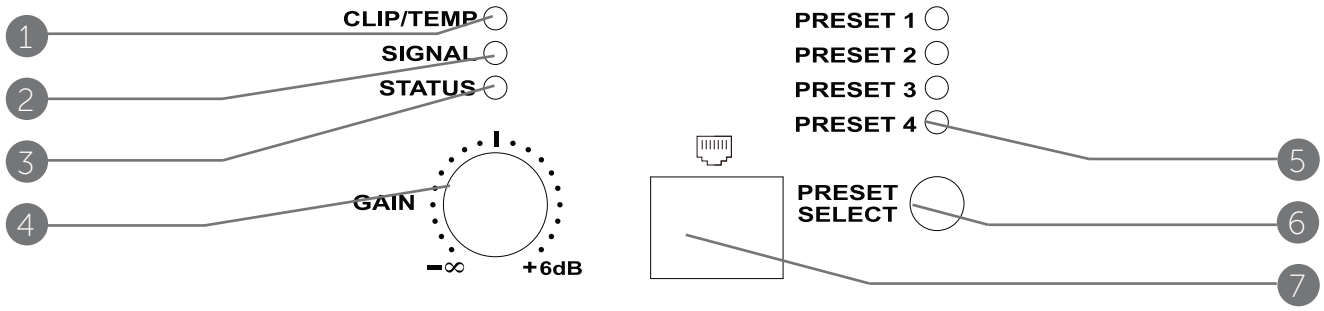


Figure 5.1: LED panel

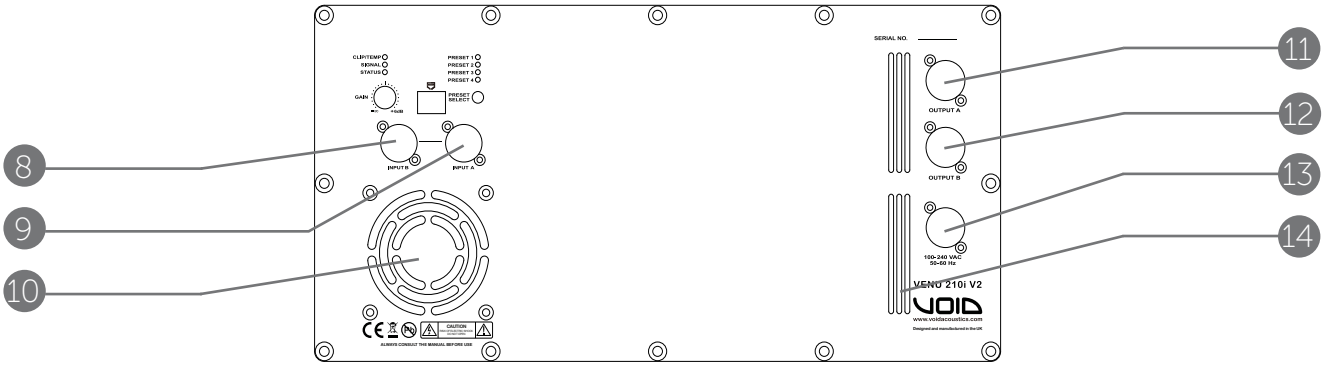


Figure 5.2: Rear panel

1. Signal clipping LED
2. Signal presence/limiting LED
3. Status LED
4. Volume potentiometer
5. Preset LEDs
6. Preset select
7. Ethernet connector
8. Combi Jack - XLR input signal connector input B
9. Combi Jack - XLR input signal connector input A
10. Fan Inlet
11. Neutrik speakON™ output A
12. Neutrik speakON™ output B
13. PowerCon™ power input
14. Exhaust vents

5.2 Factory presets

Factory presets for the Venu 210i V2 are as follows:

Preset 1	Air 8
Preset 2	Cyclone 55
Preset 3	Indigo 6S
Preset 4	Venu 6 V2

5.3 Selecting your preset

To change your Venu 210i V2 preset:

1. Apply power to the amplifier
2. Wait 15 seconds for the amplifier to initialize
3. Press the preset button
4. The next selected preset light will begin flashing
5. When the preset LED stops flashing and becomes steady the amplifier is ready to use in that preset mode.

For alternative compatible loudspeaker presets please contact your Void representative.

5.4 LED chart

Clip/temp LED

Colour	Solid on	Action required
Off	Temperature OK, no clipping	No action required
Yellow	High amplifier temperature	Reduce system gain
Red	Output signal clipping	Reduce system gain

Signal LED

Colour	Solid on	Action required
Green	Input signal present, output not in limit	No action required
Yellow	Output limiter engaging	Reduce system gain
Red	Input signal clipping	Reduce input gain

Status LED

Colour	Solid ON
Off	System off
Green	System ready to play, auto standby mode disabled
Cyan	System ready to play, auto standby mode enabled
Blue	System in standby mode: no signal detected in the last 15 minutes

5.5 Power management

It is possible to implement a power saving strategy to reduce power consumption and heat build-up. By factory default, the power management feature is not active. Pressing and holding the Preset Select button for at least 3 seconds will toggle the power management. When active (Cyan Status LED), the Venu 210i V2 will enter a low power operating mode after 15 minutes of no input signal (input level below -45 dBu). The DSP board will send a signal to the amplifier module turning off the output stages and enabling standby mode (Blue LED).

On detection of an input signal (input level above -45 dBu), the DSP board will automatically re-engage the amplifier module and exit standby mode.

5.6 Software

1. Download and install Armonía Plus from the support page on the Void Acoustics website
2. Connect an ethernet cable from the Venu 210i V2 to the PC or router
3. Open Armonía Plus and click on the cog wheel in the bottom right corner of the window. Ensure that the appropriate network interface is enabled under the Communication Manager tab

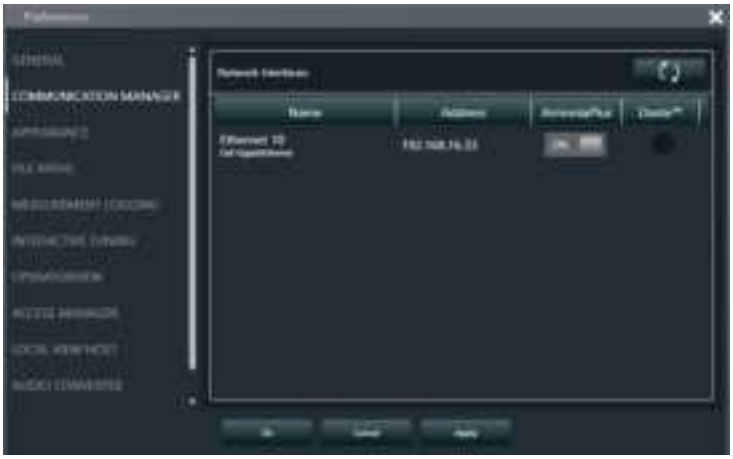


Figure 5.3: Armonia Plus communications manager

4. Click on Match under the design tab, then Discovery. Armonía Plus should now be able to detect the device.

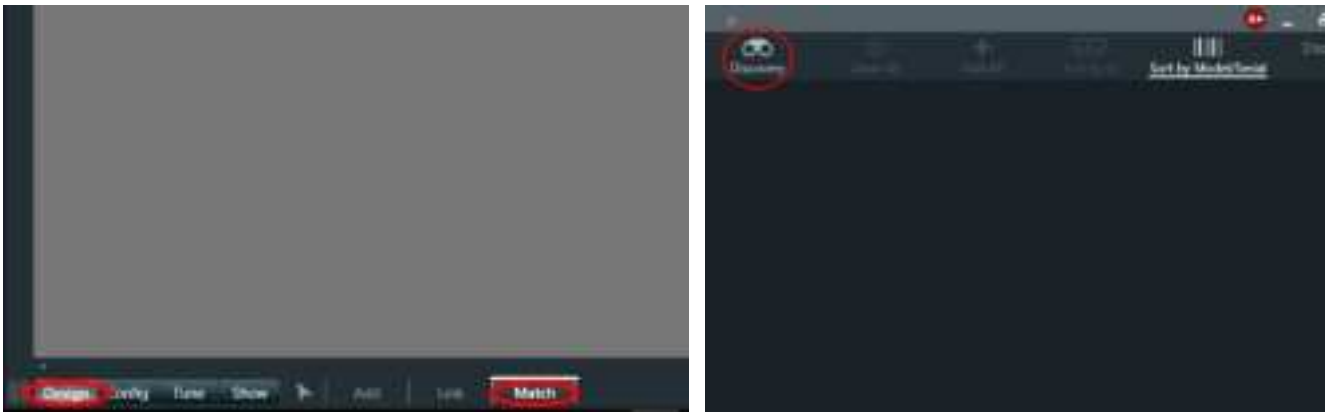


Figure 5.4: Armonia Plus tab selection

5. Click on the red Synchronisation button in the top right corner of the window. Turn Synchronisation on. You will now be able to add the device to the workspace and access the DSP.

Figure 5.5: Synchronisation and DSP access

5.7 Changing network setting

Once added to the workspace, double click on the Venu 210i V2 to access the processing options. The Network Settings section is available by clicking on the button under the Scheme window. Here you can view the current ethernet status and change address settings.

Figure 5.6: Scheme window

In order to set a static IP, click on Change Address Settings, choose Static as Addressing Mode and enter the chosen IP address. Be aware that changing these settings could break communication with the Venu 210i V2. Confirm the changes by clicking on Apply Settings. The new static IP will be applied immediately.

Figure 5.7: Network settings

5.7.1 Network troubleshooting

The Venu 210i V2 cannot be discovered by Armonía Plus when it is set with a different subnet than the network card to which it's connected. In this case, after you have clicked on Discovery, Armonía Plus will report that a connected device has an incompatible IP address.

Hovering the mouse pointer above the alert message displayed at the bottom of the Match window will show the current device IP address. In order to discover the Venu 210i V2 you will need to adjust the settings of the PC network card to be compatible with those of the product being connected to:

Figure 5.8: IP address warning

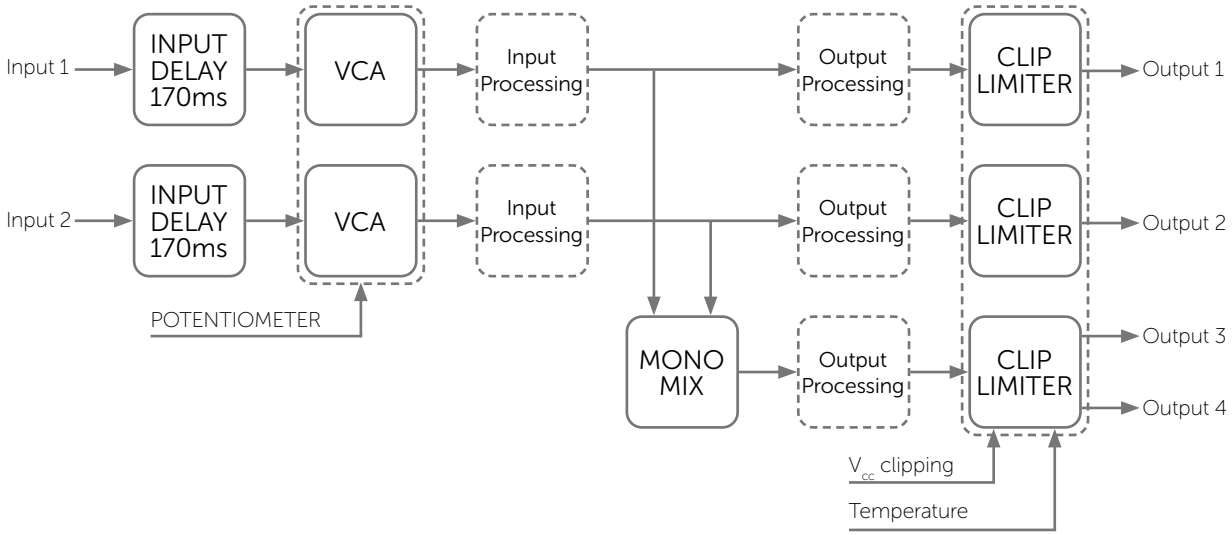
Go to Network Connection following this path: Control Panel \ Network and Internet \ Network Connections

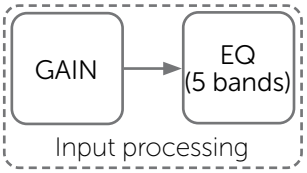
Right click on the network card you are using and click on Properties. In the Networking tab, find the item Internet Protocol Version 4 (TCP/IPv4), select it and click on Properties. This will allow you to set a static IP address for the PC in the same range as the Venu 210i V2.

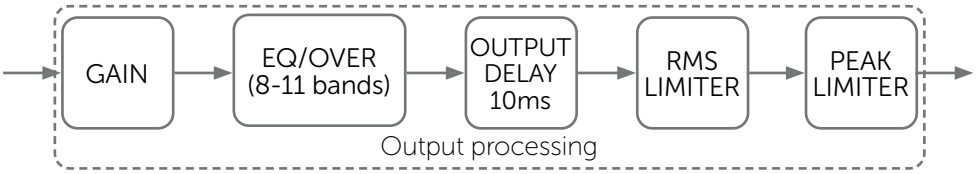
Figure 5.9: Internet Protocol Version 4 (TCP/IPv$) properties

In Armonía Plus, re-enable the network card with the new IP settings in the Communication Manager and follow the connection steps in Section 5.6. Once added to the workspace, you can change its IP configuration as outlined in Section 5.7, then re-establish the PC network card with the previous settings.

5.8 Processing architecture







5.9 Internal signal path polarity

In order to increase the power's supply energy storage efficiency, signals coming from channel pairs 1-2 are polarity reversed, one with respect to the other within the pair, when entering the amplifier. This ensures a symmetrical use of the voltage rails: if, for example, both channels' 1 and 2 input signals are going through a peak at the same time, channel 1's energy will come from the positive voltage rails while channel 2, whose polarity is reversed with respect to channel 1, will be fed energy from the negative voltage rails. In this manner, the power supply will work symmetrically, with one channel catered by the positive rails and the other by the symmetrical negative rails. Channel 2's signal will be polarity reversed once more to ensure that both channels output with the same polarity as their corresponding input signals.

For this reason it is very important not to invert the polarity of either channels before feeding them to the module. A double polarity inversion (the first by the user inserting the input signal and the other by the amplifier's internal circuitry) results in no inversion at all. If this were the case, both channels would be weighing on only one side (positive or negative) of the power supply's voltage rails. This would result in an inefficient use of the power supply's energy.

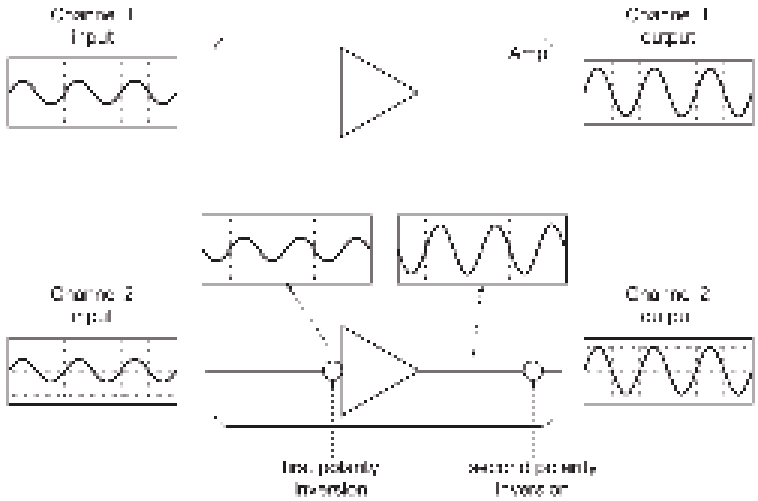


Figure 5.10: Internal signal path polarity with example input signal.
Both channels 1 and 2 are fed with the same sine signal.

6 Mounting

Part required:
Heavy Duty Top Hat - Black - IT2041
Heavy Duty Top Hat - White - IT2042

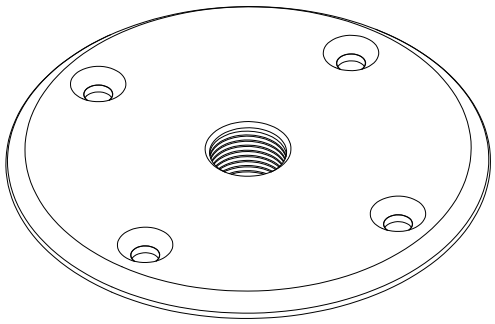


Figure 6.1: Heavy duty top hat

Step 1:
Remove all four M6 bolts and remove the cover plate.

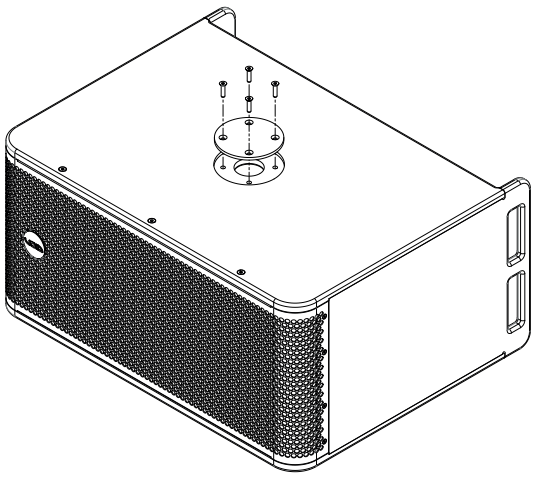


Figure 6.2: Cover plate removal

Step 2:
Insert the Heavy Duty Top Hat and replace all four M6 bolts.

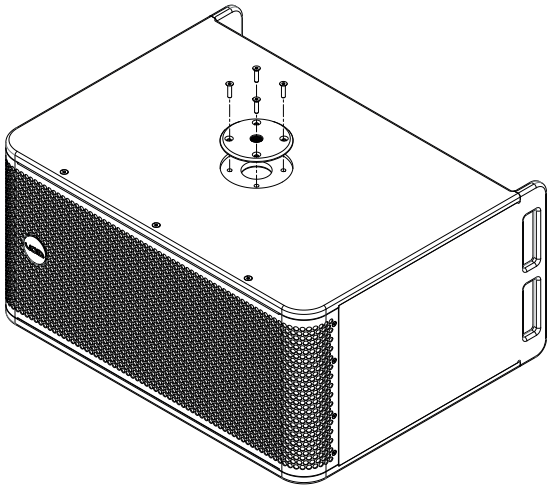


Figure 6.3: Top hat placement

7 Service

Void Venu 210i V2 loudspeakers should only be serviced by a fully-trained technician.

No user serviceable parts inside. Refer servicing to your dealer.

7.1 Return authorisation

Before returning your faulty product for repair, please remember to get an R.A.N. (Return Authorisation Number) from the Void dealer who supplied the system to you. Your dealer will handle the necessary paperwork and repair. Failure to go through this return authorisation procedure could delay the repair of your product.

Note that your dealer will need to see a copy of your sales receipt as proof of purchase so please have this to hand when applying for return authorisation.

7.2 Shipping and packing considerations

- When sending a Void Venu 210i V2 loudspeaker to an authorised service centre, please write a detailed description of the fault and list any other equipment used in conjunction with the faulty product.
- Accessories will not be required. Do not send the instruction manual, cables or any other hardware unless your dealer asks you to.
- Pack your unit in the original factory packaging if possible. Include a note of the fault description with the product. Do not send it separately.
- Ensure safe transportation of your unit to the authorised service centre.

8 Appendix

Architectural Specifications

The loudspeaker shall be active comprised of two high power 10" (254 mm) direct radiating, reflex loaded low frequency (LF) transducers.

The enclosure shall be rectangular constructed from 15 mm multi-laminated birch plywood with a wraparound grille and a rotating badge; it shall have a removable cover plate for fixing an optional M20 top hat and it shall be finished in a textured warnex with external dimensions of (H) 334 mm x (W) 676 mm x (D) 530 mm (13.2" x 26.6" x 20.9") and weigh 33 kg (72.8 lbs).

Performance specifications of a typical production unit shall be as follows: frequency response of 40 Hz – 150 Hz ($\pm$3 dB from rated sensitivity); pressure sensitivity of 97 dB at one Watt 100 at one metre; rated nominal impedance of 4 Ω.

The system shall be powered by its own internal 1500 W dedicated power amplification module with DSP management with two 750 W at 4 Ω full range outputs.

The low frequency transducer shall be constructed on a cast aluminium frame with a treated paper cone, 101.6 mm (4") voice coil, wound with copper wire on a high-quality voice coil former for high power handling and long-term reliability.

The loudspeaker system shall be a Void Acoustics Venu 210i V2.

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