CORVA

Active Speaker Cabinets with DSP

Item ref: CORVA-12A (178.912UK)
Item ref: CORVA-15A (178.915UK)

User Manual

Version 1.0

⚠	Caution: Please read this manual carefully before operating Damage caused by misuse is not covered by the warranty

Introduction

Thank you for choosing a CORVA active speaker cabinet as part of your sound system.
This product is designed to provide high power output for a wide range of sound reinforcement applications.
Please read this manual to achieve optimum performance from your speaker cabinet and avoid damage through misuse.

Package Contents

- CORVA-series active speaker cabinet
- Mains lead (Powercon®)

This product contains no user-serviceable parts, so make no attempt to try to fix or modify this item yourself as this will invalidate the warranty. We recommend you keep the original package and proof of purchase for any possible replacement or return issues.

Warning

To prevent the risk of fire or electric shock, do not expose any of the components to rain or moisture.
Avoid impact to any of the components.
No user serviceable parts inside - refer servicing to qualified service personnel.

Safety

- Please observe the following warning conventions

CAUTION: RISK OF ELECTRIC SHOCK
DO NOT OPEN

This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit

This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

- Ensure that the correct mains lead is used with adequate current rating and mains voltage is as stated on the unit
- Avoid ingress of water or particles into any part of the housing. If liquids are spilled on the cabinet, stop using immediately, allow the unit to dry out and have checked by qualified personnel before further use

⚠ **Warning: this unit must be earthed**

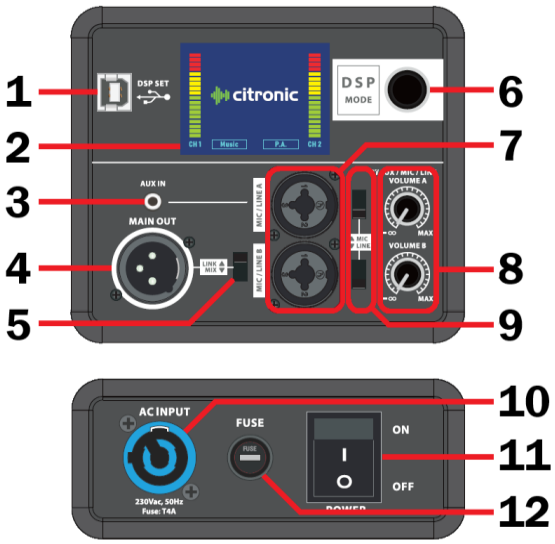
Placement

- Keep the electronic parts out of direct sunlight and away from heat sources.
- Position the cabinet on a stable surface or stand that is adequate to support the weight of the product.
- Allow adequate space for cooling and access to controls and connections at the rear of the cabinet.
- Keep the cabinet away from damp or dusty environments.

Cleaning

- Use a soft dry or slightly damp cloth to clean surfaces of the cabinet
- A soft brush can be used to clear debris from controls and connections without damaging them
- To avoid damage, do not use solvents to clean any parts of the cabinet.

Rear panel layout



1. DSP USB port
2. Menu display
3. 3.5mm stereo (summed mono) AUX input
4. MIX OUT line output XLR
5. LINK (Input B) / MIX selector switch
6. DSP / MODE control rotary selector
7. INPUT A + B XLR/Jack sockets
8. INPUT A + B VOLUME controls
9. INPUT A + B MIC or LINE level switches
10. Powercon® twist-lock Mains power inlet
11. POWER on/off switch
12. Mains input fuse holder

Setting up

Position your CORVA active speaker cabinet(s) on a stable surface capable of supporting the load and vibrations from the cabinet or ideally on a strong 35mmØ pole mount or speaker stand with an adequate safe working load to support the cabinet. Also, each CORVA cabinet has M8 flying points for suspending from a ceiling or truss if required. It is recommended to use 3 or more fixing points for suspension.

Aim the cabinet towards the audience or listeners and not in direct line of sight with any microphones that are connected to the sound system to avoid feedback (howling or squealing caused by the mic "hearing" itself)

If a mixing console is being used, connect the output of the mixer to INPUT A or B of the CORVA cabinet (7) using XLR or 6.3mm jack connectors, with the MIC/LINE switch set to "LINE". If the system is in stereo, then usually one CORVA cabinet will serve the right-side output and another for the left-side output.
Each INPUT A and B has its own VOLUME control (8). When used with a mixer, the volume of the CORVA cabinet LINE input VOLUME (8) is normally turned up high and the output is controlled at the mixer.

For INPUT A, there is also a 3.5mm LINE level input (3) for connecting a smart phone, PC or portable music player directly to the CORVA speaker, along with a built-in Bluetooth receiver that can be enabled in the settings menu. The 3.5mm socket is stereo, with both left & right audio summed to mono. Ideally, only one of the options (XLR/jack, 3.5mm or Bluetooth) should be used for INPUT A.

A microphone may also be connected directly to either A or B input if the MIC/LINE switch (9) is in the "MIC" position. Be careful not to select "MIC" level when used with a line level input to avoid damage to the speaker.

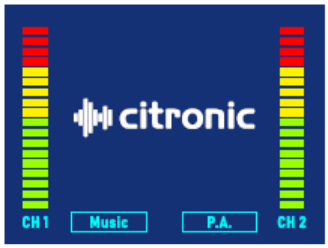
If the inputs to the CORVA speaker cabinet are to be linked onto a further active cabinet or amplifier, the mix of all MIC/LINE/Bluetooth inputs can be fed from the MIX OUT line output XLR to further equipment (4) if the LINK/MIX selector (5) is set to "MIX". If it is set to "LINK", only the INPUT B signal will be output from here.

If a PC is to be used to program the internal DSP section of the CORVA cabinet, this must be connected to the USB PORT (1) using a USB-A to USB-B lead.

When all necessary connections are made, finally connect the supplied twist-lock power cable (or equivalent) from the mains power supply to the power inlet (10) on the CORVA speaker cabinet.

Operation

With both input volume controls turned fully down, switch on the power (11) to the CORVA speaker cabinet.



The LCD display (2) will light up and show a welcome screen, followed by the home screen with level displays for CH1 and CH2 (relative to INPUT A and INPUT B) with the Mode and Position statuses shown at the bottom of the display (set in the menu as described below).

Pressing the DSP/MODE rotary selector (6) will open up the menu, rotating the selector will step through the options. Within each sub menu, selecting BACK will return to the main menu.

Pressing the selector on the first option to select **SETUP** will open the sub menu for setup options.

The first of the setup options is for **LED**, which contains the BRIGHT 1-10 setting for the display brightness, which is adjusted by rotating the selector and pressing to confirm (the LOGO LED option is not used).

The second option within the SETUP menu is for **BLUETOOTH**.

Selecting the Bluetooth option by pressing the rotary selector opens the sub menu.

The top setting is to press the selector to toggle BLUETOOTH between ON or OFF.

The Bluetooth ID is shown below this, which is the speaker model number. This is for information and is not editable.

Open the Bluetooth menu on your smartphone and search to pair and connect with this ID. When paired, a letter "C" will be shown above the Bluetooth symbol.

The next setting is for CONTROL PAIRING, when the selector is pressed on this option, it will release the current connection and return to pairing mode, and the letter "C" will flash above the Bluetooth symbol.

The last setting is for TWS PAIRING, which enables the paired speaker to become the master in a True Wireless Stereo pair. When enabled, a letter "S" will flash below the Bluetooth symbol to show that TWS pairing is initiated.

When another speaker of the same model cabinet has the same TWS enabled within Bluetooth range, they will connect as a stereo pair and any Bluetooth audio streamed to the master speaker will be played in stereo across the 2 speakers. (so 2 x CORVA-12A or 2 x CORVA-15A can be a fully wireless stereo pair)

When connected as a TWS pair, the "S" will remain static in the display.

The third option within the SETUP menu is **DELAY**, allowing the output to be delayed by a preset amount up to 100 milliseconds.

Pressing the selector on this setting and rotating to a specified DELAY value, then pressing again will apply this delay to the output compared with the input.

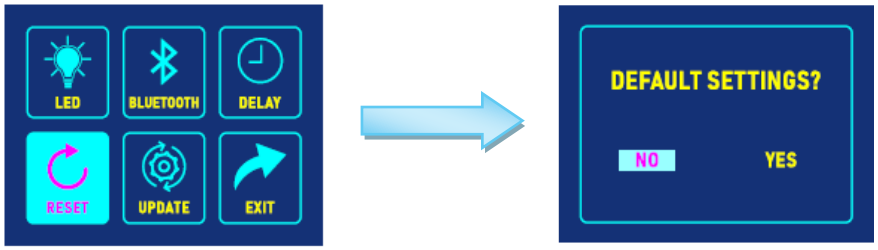
This is useful align the sound waves coming from speakers at different distances from the listener (sometimes speakers are set up as "delay stacks").

The lower setting is for UNIT, which can be toggled between centimetres (cm) and milliseconds (ms).

(setting the delay in centimetres avoids having to calculate the actual sound delay differential between 2 points)

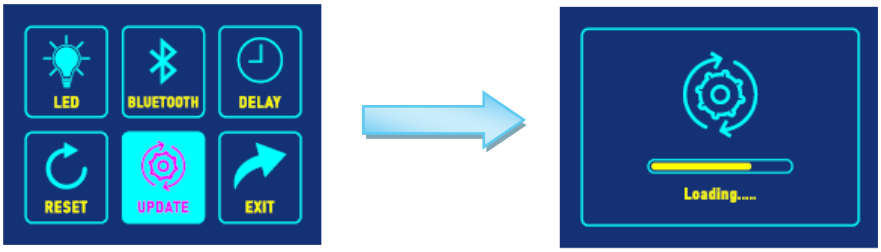
Pressing the rotary selector on the BACK option will return to the main menu.

The fourth option within the SETUP menu is **RESET**.



Pressing the selector on this option will allow the user to set all settings back to the default by highlighting NO or YES and pressing the selector to confirm.

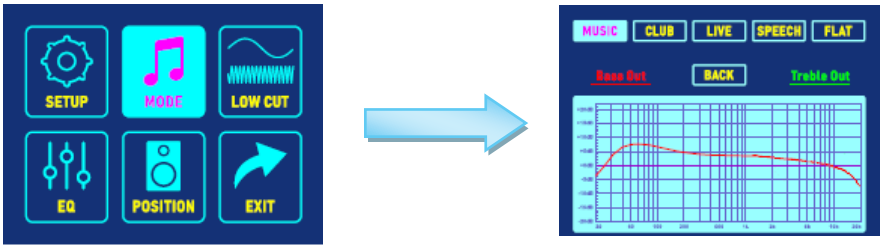
The last option in the SETUP menu is for **UPDATE**, which is used in conjunction with the USB interface for firmware updates.



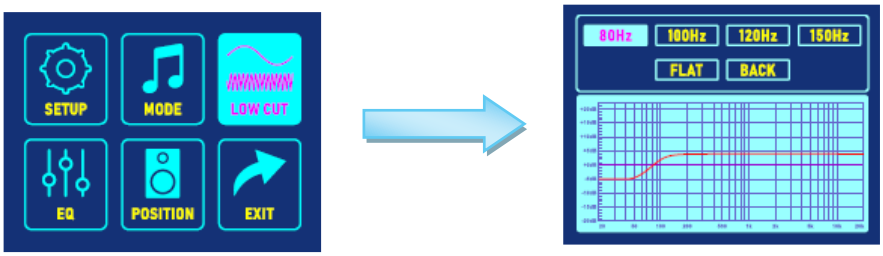
This is described further in the CORVA software guide.

Pressing the rotary selector on the **EXIT** option of the SETUP menu will return to the main menu, which has 4 further sub menus for adjusting the output of the CORVA speaker.

Selecting **MODE** opens the sub menu to select one of 5 EQ profiles for use in different applications.
Each profile also shows a graphical image of the frequency response.

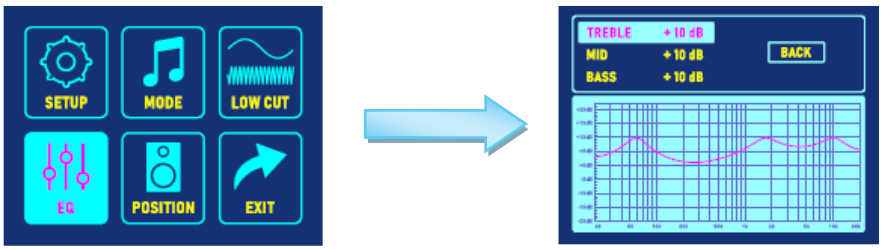


The next sub menu is for **LOW CUT**, which has options to remove the lowest frequencies from the speaker.
There are options for different cutoff frequencies or FLAT for no low cut.
Cutting the lowest frequencies can help efficiency for voice applications or when the speaker is used with a subwoofer.



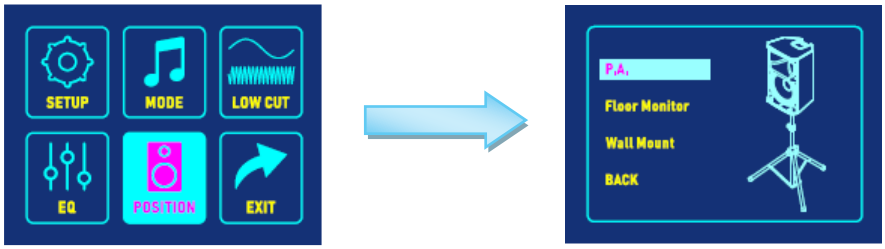
The next sub menu is for **EQ**, offering three bands of tone adjustment.

Rotating the selector to highlight either TREBLE, MIDDLE or BASS, then pressing the selector enables the rotary to boost or cut that band (a graphic at the bottom shows the frequency response)



Press BACK to return to the main menu.

The last sub menu is for **POSITION**, which selects the optimum response for the CORVA speaker when used in specific orientations. Select from P.A., Floor Monitor, or Wall Mount depending on the application.



Press BACK to return to the main menu.

The last option on the main menu is **EXIT**, which returns the display to the home screen.

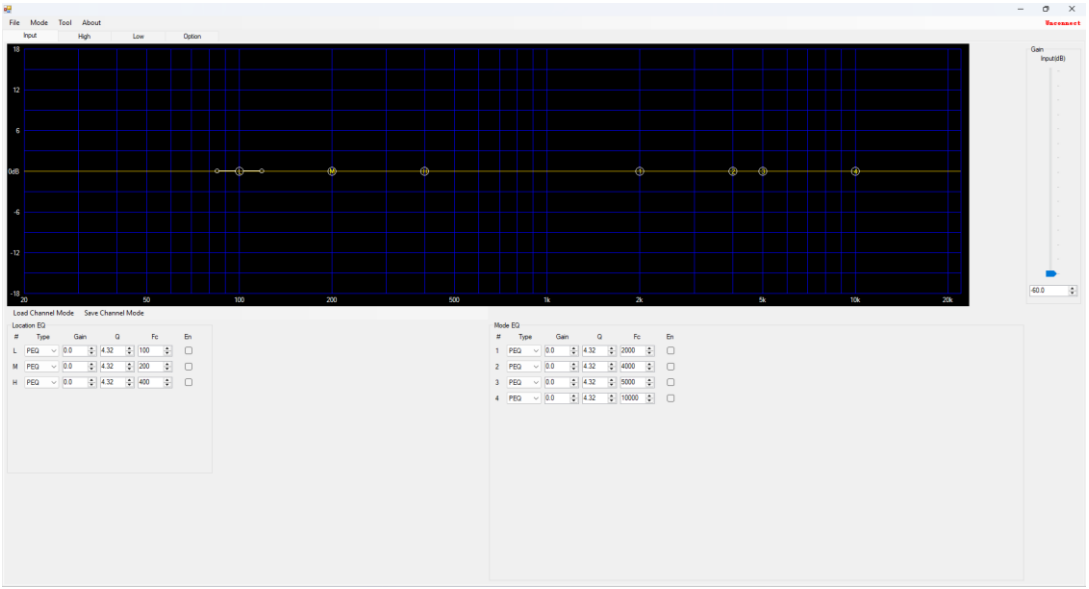
Programming via USB

For more targeted and in-depth programming, the CORVA active cabinets may be edited on a PC via a USB connection, as described below. This offers in-depth access to the tone and dynamics profiles of the internal DSP modes, which can then be saved or recalled as files for customized response.

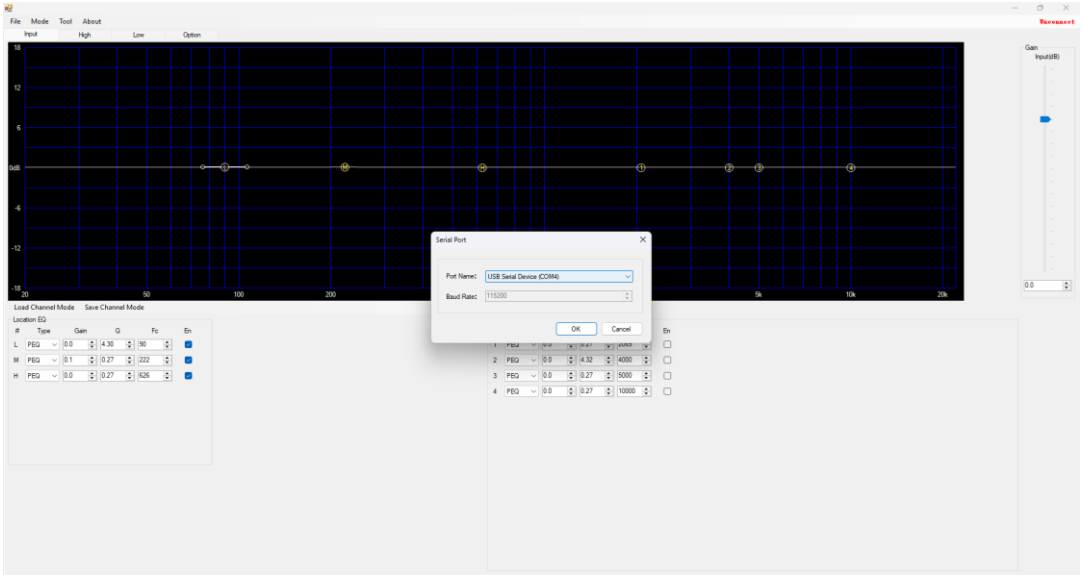
Before connecting the CORVA active speaker to a laptop, please download the "CORVA_DSP" application from the AVSL website…. Please ensure the laptop is running Windows 10 or above.

Connect the USB port of the speaker to the laptop via a USB A to B lead and switch the power on to the CORVA speaker cabinet.

Once connected, run the CORVA_DSP software application on the laptop and the program will open in a window with a graphic representation of the audio spectrum along with editable settings.



Double click on the red Unconnect label at the top right side of the window and a pop up will appear showing the detected serial port and baud rate. Click "OK" and the label on the top right side will show Connected.
(if this fails, check alternative serial port options in the drop down menu and/or re-start the PC or software)

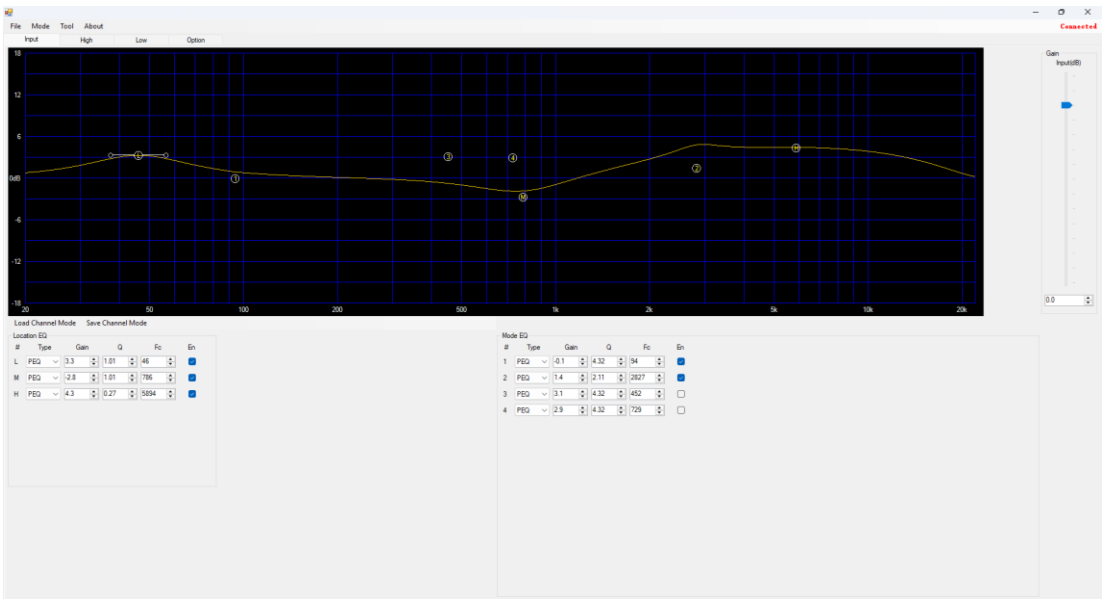


The top left side has options for File, Mode, Tool, and About.

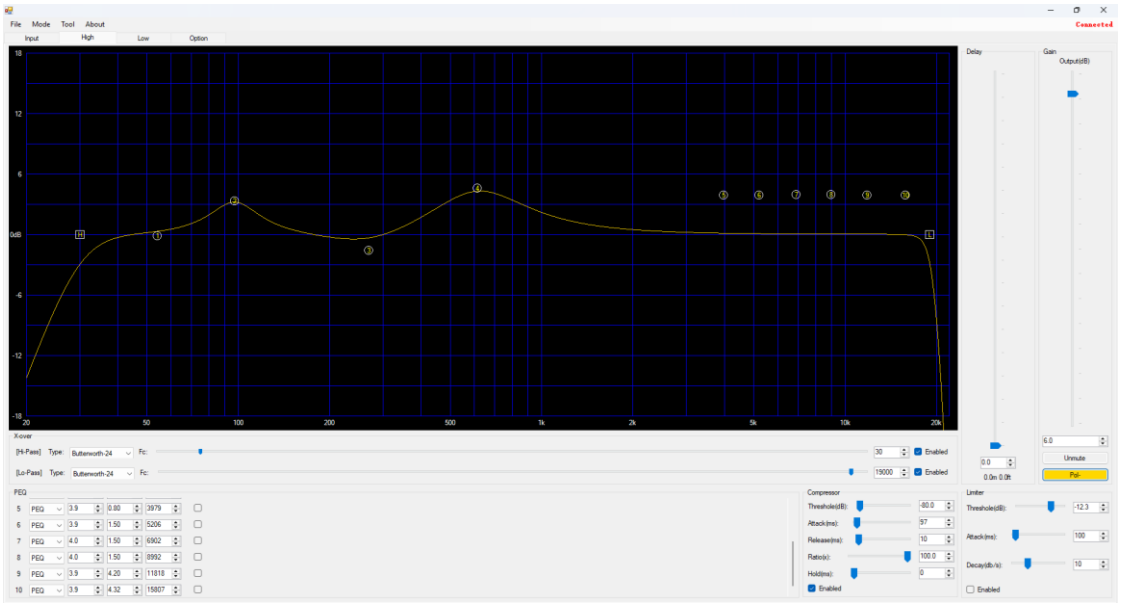
File: This has options to Import or Export the edited settings as a file on the PC.
Mode: Allows the user to Save to or Load from the individual DSP Modes stored in the CORVA speaker. There is also a facility to Download all settings from the PC software into the speaker.
Tool: This is for future development and is not yet functional
About: This has some proprietary information about the CORVA speaker.

Beneath these 4 options are 4 tabs that open pages for Input, High, Low, and Option.
The Input page shows the frequency curve with editable points for Location EQ and Mode EQ.
Each EQ in the CORVA speaker is Parametric (PEQ) with settings for Gain, Width (Q) and Frequency (Fc).
To use any of the Location or Mode EQ elements, it is necessary to check the "En" enable box.

Each point may be dragged directly on the graph or edited numerically in the relevant value fields.
An overall Gain slider is provided to balance any overall boost or cut in the EQ settings.



The following two tabs relate to the **High** (tweeter) and **Low** (woofer) drivers in the Corva speaker.
For each driver, there is a page that shows the frequency curve with directly editable filter points.



Each driver has **Hi-Pass** and **Lo-Pass** shelving crossover filter sliders directly beneath the frequency graphic.
Check the **Enabled** box to activate either crossover, and choose a type from the drop-down list on the left.
As with other filters, these can be edited numerically or by dragging the **H** and **L** points on the graph.
For woofers the frequency range will most likely be low and for tweeters, the focus will be on high values.

There are also up to 10 parametric EQs (**PEQ**) per driver (this is separate from the Location and Mode EQs)
In addition to this, each driver has a **Compressor** section for dynamics and a **Limiter** for max level control.

An Output **Gain** slider on the right side enables overall output control for the relative driver.

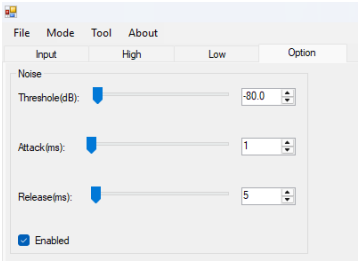
A **Mute/Unmute** switch is also available to enable listening to the either the woofer or tweeter in isolation.

A **Delay** setting of up to 16 milliseconds can be applied to either driver for time alignment between speakers.
The distance from the focal point of the listener is shown in addition to the time in milliseconds (ms)

A Polarity (**Pol+ / Pol-**) switch is selectable for phase alignment (note the tweeter may be Pol- by default)

Note: it is advised to use the Mute function before editing the Delay to avoid loud pops through the speaker.

After the **High** and **Low** tabs for the driver settings, the last tab is for **Option**.
This has settings for a Noise Gate, which mutes the input to the amplifier when there is no signal to reduce background noise during periods of silence.
There are 3 virtual sliders for Threshold, Attack and Release.



To activate the noise gate, you must check the Enabled box.

Threshold is the input level in deciBels (dB) that the gate will be triggered.
Attack is how many milliseconds (ms) for the noise gate to close when triggered.
Release is how many milliseconds for the gate to re-open when the threshold is exceeded by the input signal.

When the CORVA speaker is not being used for long periods, disconnect from the mains supply

Specifications

Model	CORVA-12A	CORVA-15A
Power supply	230Vac, 50Hz (Powercon®)	
Amplifier construction	Class-D with DSP control	
Main driver	300mmØ (12”)	380mmØ (15”)
HF driver	75mm (3”) Titanium compression driver	
Power: rms	700W	900W
Power: max.	1400W	1800W
Sensitivity @ 1W/1m	99dB	100dB
Max. SPL	130dB	132dB
Frequency response	50Hz – 20kHz	45Hz – 20kHz
Inputs	2 x XLR/jack mic/line (inc. 1 x 3.5mm Aux)	
Audio source	Bluetooth receiver	
Line output	XLR	
Flying Points	12 x M8	
Dimensions	640 x 380 x 370mm	715 x 440 x 410mm
Weight	29.5kg	33.0kg

Disposal: The “Crossed Wheelie Bin” symbol on the product means that the product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life. The goods must be disposed of according to your local council guidelines.

Hereby, AVSL Group Ltd. declares that the radio equipment type 178.912UK and 178.915UK is in compliance with Directive 2014/53/EU

The full text of the EU deCORVAtion of conformity for 178.912UK is available at the following internet address:http://www.avsl.com/assets/exportdoc/1/7/178912UK%20CE.pdf

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