# OWNER'S MANUAL


## EVO one

### Immersive Sound Preamp/Processors

STORM|AUDIO

VERSION 1.0

firmware 1.0r0 and onward

## Important Safety Instructions

The book with exclamation mark symbol is intended to alert user that it is recommended to read this owner manual before installing and powering up the product.

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.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

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.

The wave symbol next to the voltage information (100V-240V 50/60Hz) is intended to alert the user that the unit should be powered by an alternating current (AC) source, so called mains power outlet, of the electrical installation.

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 ventilation. Install in a clean, dust-free space. Maintain minimum 1RU clearance on both sides of the device to ensure proper cooling and optimal working conditions.
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. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. 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.
14. Do not open. No user serviceable parts inside. Refer servicing to qualified service personnel.
15. To completely disconnect this equipment from the AC mains, disconnect the power supply cord plug from the AC receptacle.
16. The mains plug of the power supply cord shall remain readily operable.
17. Do not expose this equipment to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the equipment.
18. For safety and electrical shock reasons, it is recommended to use this device in a non-tropical environment with temperature not exceeding 45°C and altitude not exceeding 2000m.

## Regulations

### FCC and IC compliance notice

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

### CE declaration

Immersive Audio Technologies hereby declares that this equipment is in compliance with the EMC 2014/30/UE Directive, LVD 2014/35/UE Directive, ErP 2009/125/CE Directive and RoHS 2011/65/CE Directive.

CE

### WEEE Notice

The Directive on Waste Electrical and Electronic Equipment (WEEE, DEEE 2012/19/UE) resulted in a major change in the treatment of electrical equipment at end-of-life.

The purpose of this Directive is, as a first priority, the prevention of WEEE, and in addition, to promote the reuse, recycling and other forms of recovery of such wastes so as to reduce disposal.

The WEEE logo on the product or on its box indicating collection for electrical and electronic equipment consists of the crossed-out wheeled bin, as shown here.

This product must not be disposed of or dumped with your other household waste. You are liable to dispose of all your electronic or electrical waste equipment by relocating over to the specified collection point for recycling of such hazardous waste. Isolated collection and proper recovery of your electronic and electrical waste equipment at the time of disposal will allow us to help conserving natural resources. Moreover, proper recycling of the electronic and electrical waste equipment will ensure safety of human health and environment. For more information about electronic and electrical waste equipment disposal, recovery, and collection points, please contact your local city center, household waste disposal service, shop from where you purchased the equipment, or manufacturer of the equipment.

### RoHS Compliance

This product is in compliance with Directive 2011/65/EU of the European Parliament on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

## StormAudio Limited Warranty

### Liability

The legal guarantees of conformity under no circumstances cover any damage arising from accidents, misuse or an assembly error, negligence or considerable modification of the appearance or functioning of the product. Immersive Audio Technologies reserves its right to refuse any return for a damaged product on account of misuse.

### Terms of warranty

All StormAudio products are covered by warranty drawn up by the official StormAudio distributor in your country. Your distributor can provide all details concerning the conditions of warranty. Warranty cover extends at least to that granted by the legal warranty in force in the country where the original purchase invoice was issued. Warranty is valid only in the country the product was originally sold. StormAudio reserves the right to refuse the free application of the warranty if a copy of the invoice stating purchase date, model and serial number is not presented.

To prevent any damage or loss/deletion of data stored on the device, you must have saved them prior to returning your device to the services responsible hereunder, using the Backup Configuration feature available in the “System Settings” on page 11.

Transport cost to mainland France or other official technical center is at the expense of the customer. The device is transported at the risk of the customer. We strongly recommend to store the original packaging for any transportation and to make sure to add means to protect the front panel if you are unable to use the orginal lens protective film, such as with a coton cloth or any soft material.  In the event of any damage observed upon its return, all the reservations must be made by the recipient with the carriers.

## Technical Support

### Check resources on our website

In case you need support, please consult our website https://www.stormaudio.com/technical-support to check our Download, FAQ, Tutorial and Webinar sections. You will find manuals, explanatory videos and more resources that could help you. You can also check our interactive Knowledge Base Center: https://www.stormaudio.com/knowledge-base.

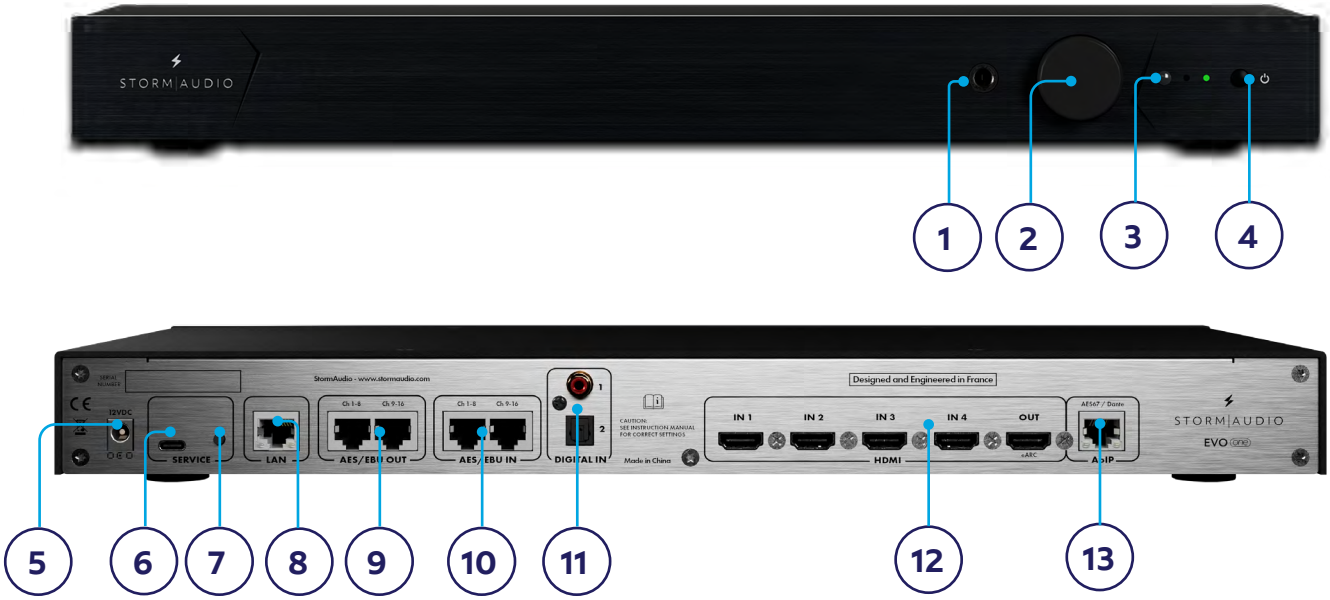
### Ask you reseller

If you require technical support on your StormAudio products, or if you have any product related questions, please first contact your reseller.

### Open a ticket on our Help Desk

If your reseller or the resources cannot help you, please open a ticket on our Help desk: https://www.stormaudio.com/help-desk. Provide as many information as possible about your product, your setup, the devices used as well as steps to reproduce the problem. Ideally when possible, download the Configuration and Logs files from the System page and add them to the ticket.

## Table of Contents




## Front panel

### 1. Headphones Jack

Headphones can be connected on the front panel using traditional stereo 6.3mm jack interface.

### 2. Volume

The default state for the knob is to control volume in the selected theater, but it can also be assigned for Headphones volume control.

### 3. IR Receiver

An InfraRed receiver is located next to the power button for IR remote control usage.

### 4. Power Button

Use this button to toggle the EVO *One* between ON and STANDBY.

## Rear panel

### 5. Power Inlet

The EVO *One* is powered via an external AC adaptor. Connect its DC output connector to the EVO *One* power inlet (12V DC).

### 6. USB

One USB-C port is provided for service (5V/1A max).

### 7. Reset button

The EVO *One* doesn't have a front panel display. Using the RESET button will change the Network back to DHCP mode and restore the factory defined password. Press the button for 3s until the unit restart.

### 8. Network

The EVO *One* must be connected to a network for setup and it is recommended for operation. Spe00 Mbps. Use CAT5e or better cable.

### 9. Digital AES/EBU Outputs

Up to 16ch outputs in AES/EBU format over 2x RJ45 connector are made available. See “Settings” on page 33.

### 10. Digital AES/EBU Inputs

Up to 16ch of AES/EBU audio streams can be provided through 2x RJ45 connectors. See

"Settings" on page 33.

## 11. Digital Inputs

One Coaxial and one TOSLINK Optical digital inputs are provided for connection of legacy digital sources.

## 12. HDMI

4x HDMI inputs and 1x HDMI output are available, with full support of HDCP 2.3 / HDMI 2.1 requirements up to 48 Gbps speed.

Support of eARC and ARC audio return channel from compatible TVs.

Support of Dynamic HDR modes with HDR10, HDR10+, HLG and Dolby Vision® compatibility.

Finally OSD for on screen information feedback is available on both outputs. See "HDMI" on page 33.

*Note: do not use USB embedded 5V to supply optical fiber cables.*

## 13. Digital AoIP Inputs / Outputs

Up to 16ch outputs and 16ch inputs are available through Audio over IP protocols. Through "Settings" on page 33, the EVO *One* can be set to either AES67 Input/Output, Native Dante Input or Native Dante Output, up to 16ch.

## General

### Welcome

Thank you for your purchase of a StormAudio EVO *One* product. It has been designed to provide state of the art audio performance with immersive surround formats and legacy surround formats alike. Innovative hardware and software make it possible to customize theaters of up to 8, 12 and 16 channels depending on the selected model through license activation.

### Included In The Box

- Quick Installer Guide with Safety information
- Power adaptor with exchangeable plug to match your locality
- Rack mount ears (T10 Torx screwdriver to mount)
- Rubber feet (x4)

### Features

StormAudio EVO *One* includes the following features:

- 4x Input / 1x Output HDMI switch, 1x TOSLINK and 1x RCA S/PDIF digital input
- Up to 8, 12 or 16 configurable digital inputs (AES/EBU and AES67 or Dante)
- Up to 8, 12 or 16 software configurable outputs (AES/EBU and AES67 or Dante)
- Mandatory network connectivity for control, firmware updates and Roon streaming.
- IR control (front sensor)
- Available control system driver modules for 3rd party automation systems (Download Center at http://www.stormaudio.com)

### Shipping Box and Packing Material

Please keep the original shipping box and all packing material. In the unlikely event you have a problem and must return it for service, you must use the proper packing material as the unit is not insurable by carriers otherwise. Replacement packing materials is available from StormAudio.

## Installation

Prepare your installation site by following the steps below: consult page "Rear panel" on page 6 for rear panel diagram indicating location of key connections.

1. Prepare all your devices (sources, projectors, amplifiers...) and keep them all powered down while interconnecting them to the EVO *One* to avoid electrical discharges and damages, especially for HDMI interfaces.
2. Network should be running a DHCP server to enable the EVO *One* to obtain an IP address.

### Ventilation

The EVO *One* generates heat that must be dissipated to ensure proper and reliable function. It can be safely placed inside furniture or an equipment rack. However, it should not be tightly enclosed. Some airflow is required on the sides so air can circulate especially when the product is under heavy load. Keep at least 1" space on each side, with good air flow within the rack. Products may be stacked safely without interspace.

### Connecting to Network

Using a CAT5e or better cable, connect the Evo *One* to your local area network. See "First Run" on page 9 to identify IP address.

### Connect Source Components

Legacy digital sources can be connected to the digital inputs Optical and Coaxial. HDMI sources can be connected as well.

### Connect to Display

Connect your displays using the HDMI output.

### Connect Audio Outputs

Connect your AES/EBU (RJ45) outputs to your speakers/amplifiers and the AoIP output to a Gigabit switch that we recommend capable of managing IGMP, QoS and RTP.

### Connecting to A/C Power

Plug the DC output end into the product, then plug the AC adaptor into an approved receptacle. Unit will enter its Standby mode.

## First Run

Upon first run, you must configure the product according to your specifications using the web based user interface. There is no on-screen display nor provision of a front panel to configure the unit.

### Power On

Following Installation, the EVO *One* is placed in Standby Mode. The power LED shows steady red.

Press the front panel POWER button. The product will launch the startup sequence. During the Initialization process (about 30s) the LED will blink green until the unit is ready with a steady green LED. Initialization process can be shorten at the cost of more standby power consumption. See "Settings" on page 33 to adjust this.

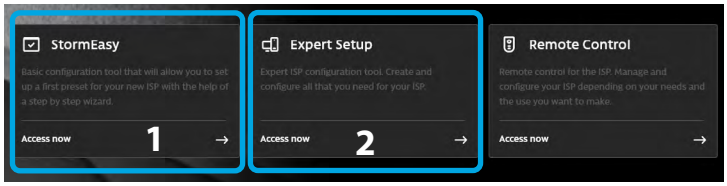
### Access Home Page via Hostname

Open your Web Browser in a laptop and enter **stormaudio.local** in the URL area. Select your device in the Discovery page.


This will give access to the Home Page that is described in the next section "Home Page and configuration modes" on page 9.

*Note: alternatively, IP scanner tools can be used to identify EVO One IP address on the network. Look for the hostnames ISP-host or stormaudio and take note of the corresponding IP address. Then follow same above points.*

### Home Page and configuration modes




1. For standard installations, select StormEasy.
   - StormEasy is a first-run step-by-step guided product configuration that will help define all needed parameters of the product in a logical and easy way.
   - As a "from scratch" configuration tool, it will deactivate existing inputs and propose to reset the previous speakers configuration. If you already have a configuration defined, we recommend you to use the Expert setup.
   - StormEasy will allow for the complete configuration, including launching the Dirac calibration. Note that while StormEasy can run on any browser and device, Dirac will require the use of the Laptop application.
   - Use installer as password when prompted.
2. For advanced installations, select Expert Setup and follow this owner manual instructions to configure the product so to meet your installation requirements. Use **installer** as password when prompted.

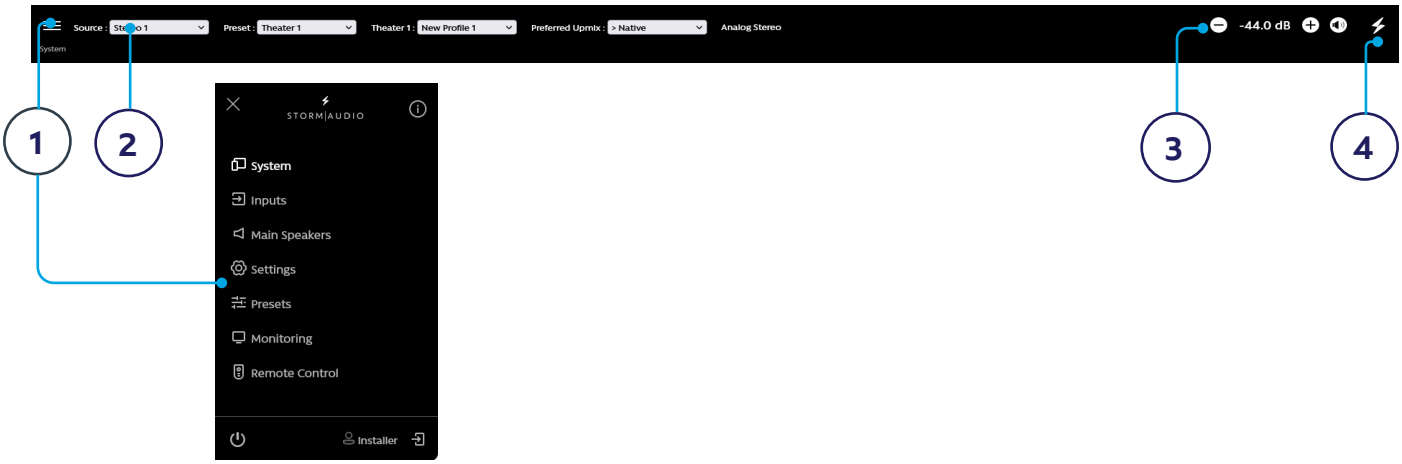
*Note: Only one instance of control via web UI can be opened at a time. If a window is already accessing the EVO One web UI, a message will ask you to close one. Browsers supported: Edge (Windows), Safari (macOS), FireFox and Chrome (Windows, macOS et Ubuntu). Others might show issues.*

3. In case the unit is not in DHCP mode, and you need to restore DHCP mode, use the RESET button in the back panel (see "Rear panel" on page 6).

### Default Passwords

The default password for full access to the setup menu is **installer**. Enter the password and press connection to enter the setup menu.

*Note: In case you have forgotten the Expert User or Installer password, it is possible to reset them to the default values by following step 5 above.*




## Web UI Header

### 1. Configuration menu access

- **System:** Indicates information about the product such as firmware version, any installed licenses, network parameters. System configuration backups and firmware updates are also done here.
- **Inputs:** Configure input names, map physical inputs to source components, and make input dependent settings.
- **Main Speakers:** Configure primary theater, child theaters, audio/video and audio only zones. This is where you map analog outputs to physical channels.
- **Settings:** Configure triggers behavior, HDMI, IR, and other system wide parameters.
- **Presets:** Build presets that easily recall combinations of Theaters, downmix zones, EQ profiles, triggers and surround upmix behavior. Presets offer customers the easiest way to place their system into modes for different types of listening including Dirac Live profiles.
- **Monitoring:** This StormMonitoring page gives real time and logged statistics on the health and performance of the EVO *One* which can be accessed via the local network or via remote network access which makes system diagnostic endeavors less speculative and much more concrete.
- **Remote Control:** A copy of the page available to anyone logging into the web UI regardless of their credentials level. The only difference between this page and the one available without logging in is that the Persistent Remote Control Bar remains at the top.
- **Power:** Switch the unit from standby to on status from here. Green indicates that the unit is powered on. White indicates standby. You can select Restart to simply reboot the ISP.
- **Logout:** Pressing Log Out will return you to the web UI home page. To access the installer menu or expert user menu, you must log in with the appropriate password again. Otherwise, you only have access to the remote control.
- **Help:** On the top right, selecting the "i" will activate the comprehensive built in help function. When activated, every function on the web UI features a which can be hovered over with a mouse to reveal a description of that specific function. Some functions have a which indicates important information. These warning indicators are present regardless of whether Help is engaged or not. Note that the Settings page works differently: there is no sign visible, simply hover over the field you need information on and wait for a second to have it shown.

### 2. Persistent Remote Control Bar

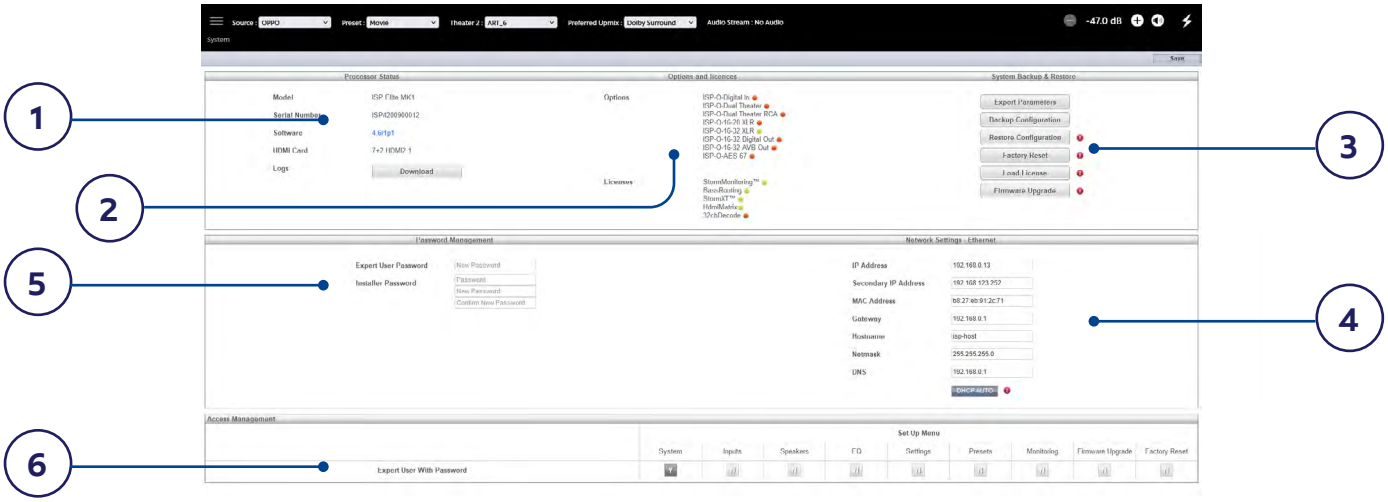
This area provides access to change some settings without having to access the remote control page. Change Source, Preset, Theater, Profiles within each theater, and Surround modes.

### 3. Volume Control

Volume control is provided without having to access the Remote Control page. The + / - buttons adjust volume in 1dB increments. Mute cuts all sound.

### 4. Home Page access

Selecting the StormAudio lightning icon will return you back to the Home page of the Web User Interface.




## System Settings

### 1. Product Status

This area indicates the model number, serial number, firmware revision and HDMI card version. You can also download logs which can be sent to StormAudio support team for diagnostic purposes.

### 2. Options and Licenses

This area indicates which of the Optional Modules and Software Features are currently installed (shown in Green).

### 3. System Backup & Restore

- **Export Parameters:** Generates a spreadsheet indicating the mapping of the output channels.
- **Backup Configuration:** Generates a backup file of the entire current configuration of the EVO *One* making restoring settings easy after replacing a unit or recovering from a system reset event. As a dealer, you are advised to perform this step after completing setup and archive the settings on behalf of your customer.
- **Restore Configuration:** Permits uploading of the file generated by the step above. This overwrites all current settings with the data contained within the backup file, including the Dirac filters. Note that it is not recommended to import a configuration file from an EVO *One* model to another one as they might exhibit differences that would not permit the full configuration to work properly (different channel count, options installed....).
- **Factory Reset:** Resets the product to default configuration but retains current firmware version.
- **Firmware Upgrade:** Use this tool to update the firmware of the product. New firmware is made available from time to time and can be found on the Client Portal at http://www.stormaudio.com. Firmware upgrades are never required and should be considered optional unless advised otherwise by StormAudio support staff.
- **PA Firmware Upgrade:** Use this tool to update the firmware of the PA (Power Amplifiers) that are accessible in the network. This will open the PA update user interface. Follow similar process as for EVO *One* to access the firmware package.

### 4. Network Settings

Displays current settings. By default, this is populated by the network DHCP server. DHCP Auto button is dark grey. To use a static IP address, click DHCP Auto to disable (turns light grey) and populate IP Address, Gateway, Netmask, and DNS fields manually. If an ISP/ISR has been set to static IP mode and will no longer connect to the network, see "First Run" on page 9 for instructions on resetting the network settings to default DHCP mode.

### 5. Password Management

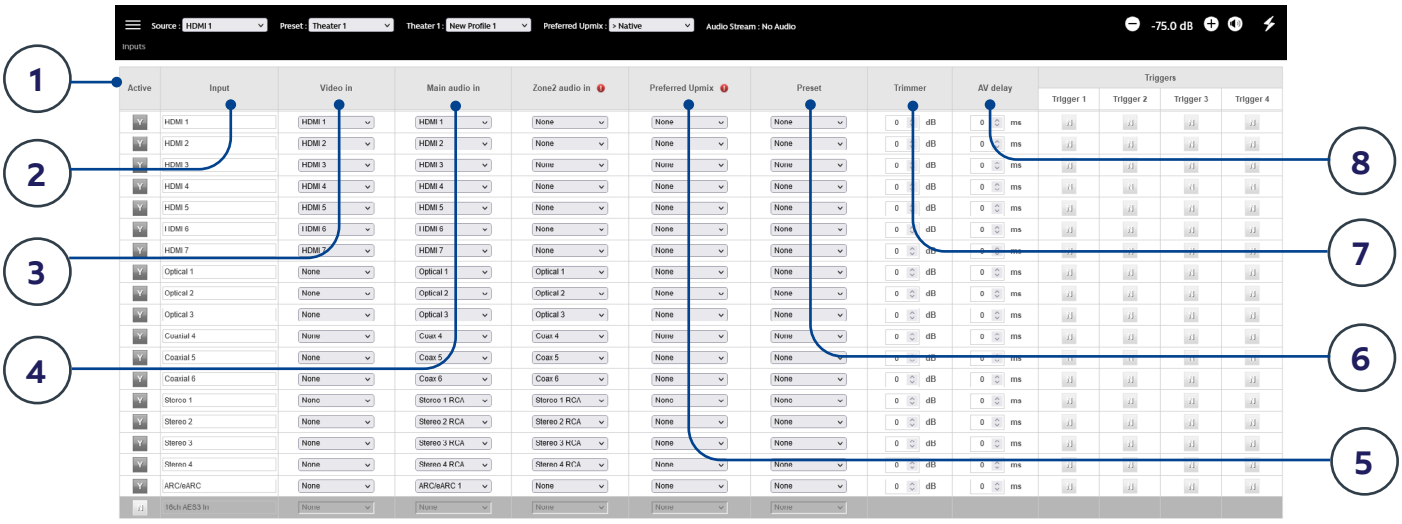
The product has 3 levels of access. Remote Control requires no password and give no access to settings. Installer has access to all settings.

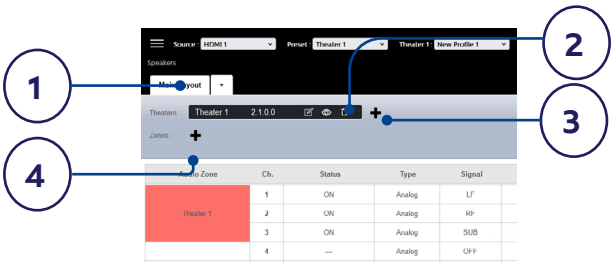
The default password is:

**Installer:** installer

If you are a dealer or custom installer, you are advised to change the password and document them.

If you have forgotten your password and have locked yourself out of the EVO *One*, you can reset it back to default by use of the RESET button in the back panel (see “Rear panel” on page 6).


Source : HDMI 1
Preset : Theater 1
Theater 1 : New Profile 1
Preferred Upmix : > Native
Audio Stream : No Audio
-75.0 dB
Inputs
Active
Input
Video in
Main audio in
Zone2 audio in
Preferred Upmix
Preset
Trimmer
AV delay
Triggers
Trigger 1
Trigger 2
Trigger 3
Trigger 4
1
2
3
4
5
6
7
8




To assign analog outputs to particular channels, you must build a theater. A theater may occupy as few as 2 channels or as many as 8, 12 or 16 depending on the EVO *One* version.

## 1. Layouts

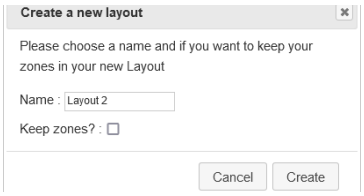
If it is planned to have different usage of a speaker in an installation, the Layout function should be used. It is possible to create up to 6 different Layouts, providing total flexibility in how speakers are used on each of them. A layout is a new set of speaker assignments, up to 8, 12 or 16ch per layout. By default, a Main layout is created that will allow you to define a first set of speakers assignments.

Creating a new Layout resets the output mapping in this Layout. Thus, you may need to remap the outputs to ensure a speaker gets the appropriate signal defined in the Theater.

Example of Layout usage:

- creation of subset of a Theater, for example, defining a 9.1.6 constellation in the Main Layout and define 5.1.2 in a different Layout using replicated speakers instead of discrete feeds
- multi-purpose room that can be used in "projection mode" in one direction and "TV mode" in another direction

Create a new Layout using "**+**" in the Layout tab area.



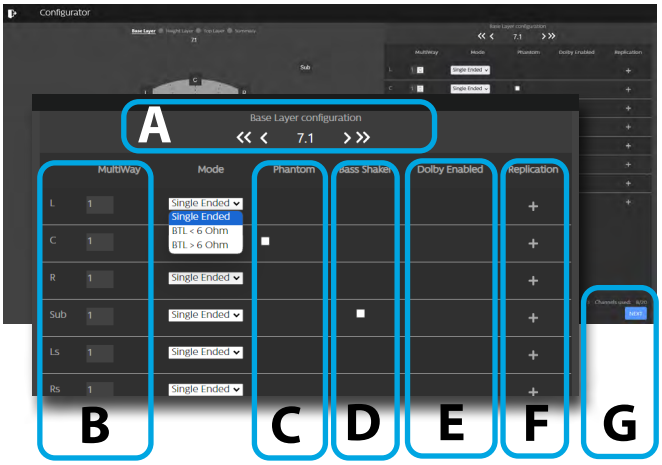

You can rename the Layout and then select create. This will open the new Layout to configure. Note that a Layout can be deleted, except the Main Layout that is the default one.

## 2. Delete Theater

By default, the EVO *One* ships with a 2.1 channel theater configured. To build your own, delete this theater and create a new one. Select the Trashcan and validate the removal when prompted.

## 3. Create and Configure the Theater

Select **+** to create a new Theater. You will reach the Speakers configurator where you will be able to define each layer of the speaker installation: base, height and top layers.




A. Using the left and right arrows, choose the speaker combination you expect for the layer amongst predefined options available for your EVO *One*.

B. For each speaker, you can define whether it is a full bandwidth or a multiway one. This can also be used for subwoofers when several subs are expected to be seen as one by Dirac, playing the same signal with same or different adjustments. In case there is no subwoofer in the system, please select "0" in the multi-way subwoofer field. Multi-way filters details will be defined in "Multi-way Speaker/ Subwoofer Setup" on page 20.

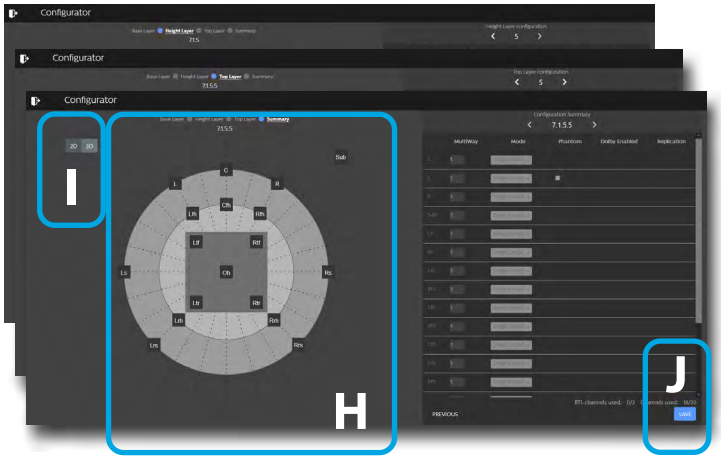
C. The Center channel can be turned to Phantom mode, the signal being played in Left and Right channels, removing the need to have a physical center channel in the installation.

D. When using bass shaker devices, check the corresponding subwoofer box. It will then be disregarded during Dirac calibration process, but become available as an LFE transducer afterwards.

E. Top channels can be defined as Dolby Atmos Enabled for the case up-firing speakers are used. In such case, select the base speaker location which can be either the "Front", "Side" or "Back" speakers position, depending on the base layer definition. Keep «None» for normal down-firing in ceilings speakers.

F. For each speaker, you can define whether replication is required. Use this feature for multiple rows of surround speakers declaration or any speaker you wish to replicate. For multiple subwoofers, use the multi-way function in B above.

G. Press Next to reach the next layer and follow again steps A to E until all three layers are defined.




H. At the end, a summary of the Speakers Configuration is shown. A four digits description is given following this order:, "Base Layer . LFE . Height Layer . Top Layer".

I. It is possible to get a 3D view of the Theater, toggling between 2D and 3D.

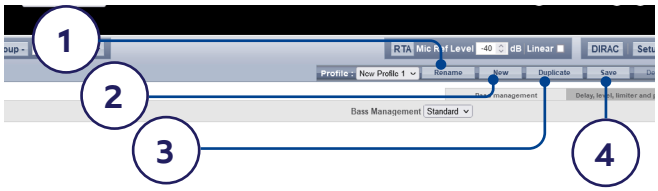
J. Save to exit and reach the Speakers edition page loaded with the default audio profile “New profile 1”.

## Audio Profiles

For each Theater and Sub-Theater, there is a default Audio Profile created. You can save multiple Audio Profiles for different listening preferences with specific speakers settings (such as different EQ profiles based on content type).

For a Theater, Audio Profiles can be recalled as part of Presets (see “Presets” on page 32). A profile includes: Speaker definition (multi-way, levels, delays), bass management, manual EQ, and Dirac filter design if applied.

For Audio Zones, Profiles are directly selectable via the remote controls or TCP/IP commands.




### 1. Rename

You can rename a profile using Latin-1 table characters. No special character allowed.

### 2. New

Click New to build a new fresh profile.

### 3. Duplicate

Build a variation of a saved profile. For instance, you cannot edit Dirac reference profiles directly although it can be useful to tune levels of replicated speakers. In such case, create a duplicate of the reference profile and edit it to adjust the needed parameters.

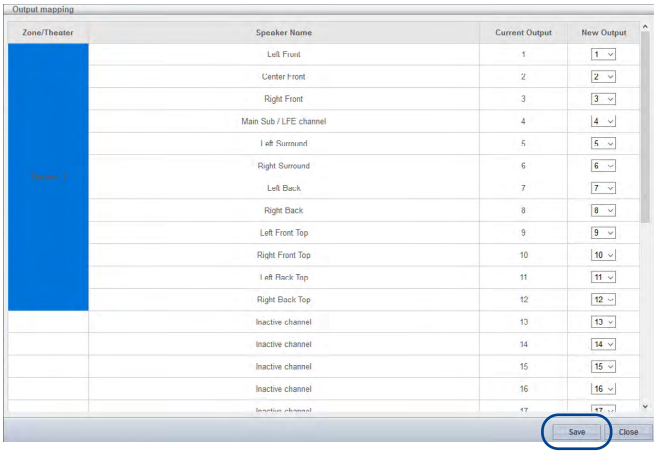
### 4. Save

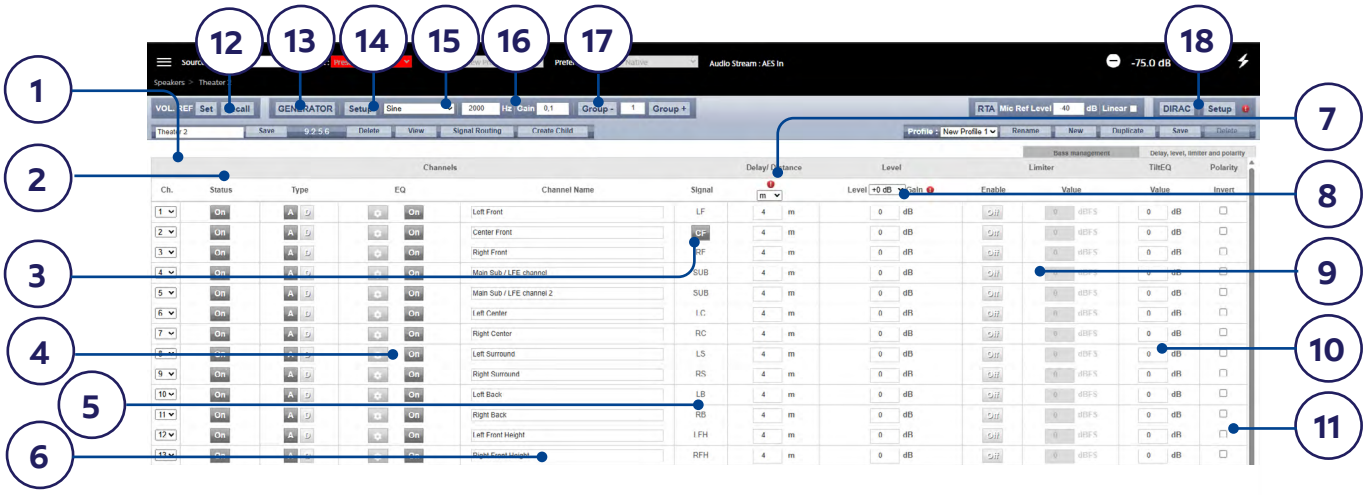
After any changes to a profile are made or creation of a new one, you must SAVE your changes.

## Output Mapping

Should you wish to map a physical analog output channel to a loudspeaker other than the default assignment, you may do so from the Main Speakers page. Each Layout has its own Output Mapping. It is therefore possible to define different usage of a given connected speaker. Click Output Mapping.

Using the New Output column on the right of the pop-up menu, select a new output channel assignment. If you choose a currently occupied new output channel, that channel will be automatically reassigned (swapped). Save to exit and go back to Main Speakers summary page.






## Individual Channel Adjustments

Once your theater is defined, each channel can be individually adjusted. For Theater, SubTheater can also be created, see “Child Theater / Sub Theater” on page 25.

### 1. Channel Mapping

Output assignment can be changed here.

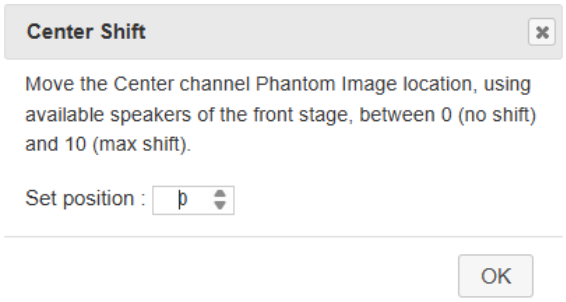
### 2. Channel Status

Each channel is enabled by default. To disable a channel, click the ON button. It will turn to OFF and audio will no longer be routed to that channel. Note that audio will not be re-routed to other channels. Channel status is set per Theater and is not stored as part of a profile.

### 3. Center Shift

In Home Cinema sound reproduction, the sound to picture coherence is an important appreciation factor. While we are able to tolerate shift between sound and picture perception location, there is a limit to the ventriloc effect. With the adoption of LED panels or even walls in more and more designs, the location of the center channel is often not ideal anymore, degrading this sound to picture coherence. To compensate for it, there are several designs recommendation, one of them being the inclusion of a replicated Center channel positionned above the screen while placing the other Center channel under the screen. Main issue with this proposal is that the upper center channel will only play Center signal and with no further adjustment ; the dialog will be perceived as coming from the mid position of these speakers, not for sure aligned with the Left and Right acoustical centers.

With the Center Shift feature, you can create for example a configuration with a Center Height channel that would be used to render both the Center Height signal and the Center signal. To perfectly align the Center signal phantom image position, an adjustment is available by selecting the CF button (3) that will open a window with an adjustment from 0 to 9.




In this specific use case, 0 keeps full signal to the Center channel, while 9 will shift the Center signal phantom image to the Center Height channel. But the system can actually adapt to other speakers configuration, making use of the most appropriate speakers in place to provide the best sound to picture coherence for the center signal phantom image. If no Center Height is placed, then we'll make use of CF, LF and RF speakers. If Front Height speakers are in place, then we'll use CF, LFH and RFH speakers to shift the Center signal phantom image.

### 4. Channel EQ

Each channel can have up to 20 filters cells configured selecting the wheel icon. Channel

EQ can be bypassed by selecting ON/OFF. See "Channel EQ" on page 21 for detailed EQ options. EQ settings are stored as part of profiles.

### 5. Signal

Indicates which signal is routed to this output. Should you desire to remap signal routing, you can do so with Output Mapping. See "Output Mapping" on page 16 for details.

### 6. Channel Name

Name can be customized with up to 24 characters from Latin-1 table. No special character allowed.

### 7. Delay per Channel

Choose whether to measure channel delays in meters (default), feet, or milliseconds. Each channel should have distance/delay set between that loudspeaker and the reference seating position. You can define this in meters (default), feet, or ms depending on your setting in point 6 above.

### 8. Level

Set the level of each channel in between -100dB and +12dB in 0.1dB increments. Best practice is to set other channels to a negative figure relative to the loudest channel to avoid clipping when possible. Global gain makeup can be applied to the theater when the relative level of the theater is too low (usually a result of a high degree of correction due to Dirac Live's mixed phase filters). Use global gain makeup judiciously to avoid clipping.

### 9. Limiter

To prevent distortion due to loudspeaker overdriving or amplifier clipping, you may wish to engage a limiter on a channel. When enabled, a compressor will attenuate audio above the threshold set by the Limiter Value for that channel back down to that value. For instance, if the limiter is enabled and set to -3dBfs, any audio that exceeds -3dBfs will be reproduced at -3dBfs. By their nature, limiters are not ideal acoustic solutions, but this feature can prevent subjectively worse sounding distortion, or in extreme cases, damage to loudspeakers or amplifiers. If you find that you are aggressively using the limiter function, you are encouraged to upgrade loudspeakers and/or amplification.

### 10. Tilt EQ

For speakers behind a motorized screen for example, you might need to change their "audio brightness" depending on the screen position up or down. TiltEQ allows the sound to be darker or brighter.

### 11. Polarity

Check the box for any channel in which you wish to invert signal polarity.

### 12. Volume Reference

For the Adaptive Loudness feature to work properly, it is recommended to set the reference volume to the level at which you made your calibration, usually between 75 to 85 dBc. When the volume control is adjusted at this Reference level, there is no loudness compensation. It will start gradually when the level is decreased to follow our ear sensitivity curve, thus emphasizing more the low frequencies the lower we go. Calibrating the room at 75 to 85 dBc SPL is critical as this is usually the level that is used by the sound engineer in his studio, thus ensuring your system has same reference. Set the reference master volume value by clicking on SET once you have dialed the correct sound pressure level using a SPL meter and the noise generator  Click RECALL to quickly return to that value. Note that by default, the reference level is set to -30 dB.

## Test Tone Generator

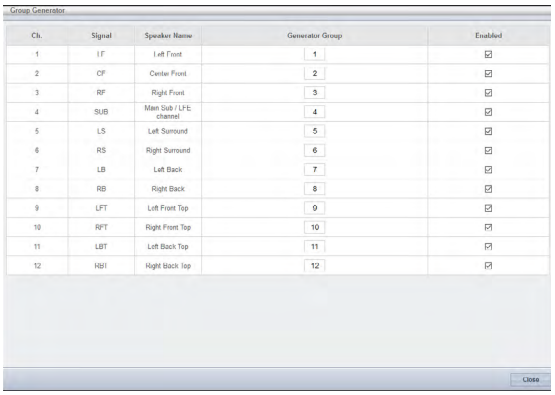
The EVO *One* includes a highly configurable test tone generator which can be used to help manually calibrate channels.

### 13. Generator

Click this button to turn on the tone generator. It will automatically start with Group 1 with green highlight on the active channels.

### 14. Setup

Unlike traditional generators, the EVO *One* plays tones per channel group. Click Setup to define the groups and the channels they contain. For example, if you have 2-way active loudspeakers, you may wish to group the high frequency and low frequency component of each into one group.




### 15. Noise Selection

Choose the type of noise or tone created by the generator.

- **Sine**: Generates a sine wave at the frequency specified.
- **Pink Noise**: Generates full bandwidth pink noise.
- **Pink Noise 400Hz-4kHz**: Generates pink noise band limited to one decade. This is particularly useful when setting relative levels between channels with dramatically different useful bandwidths. Remember SPL meters measure not only sound pressure but also bandwidth.
- **External**: it is possible to use an external noise generator connected to one of the ISP/ISR input. This is usually required when using an external tool providing its own stimuli (Room EQ Wizard is one of them, see "1. REW import" on page 22).

### 16. Gain

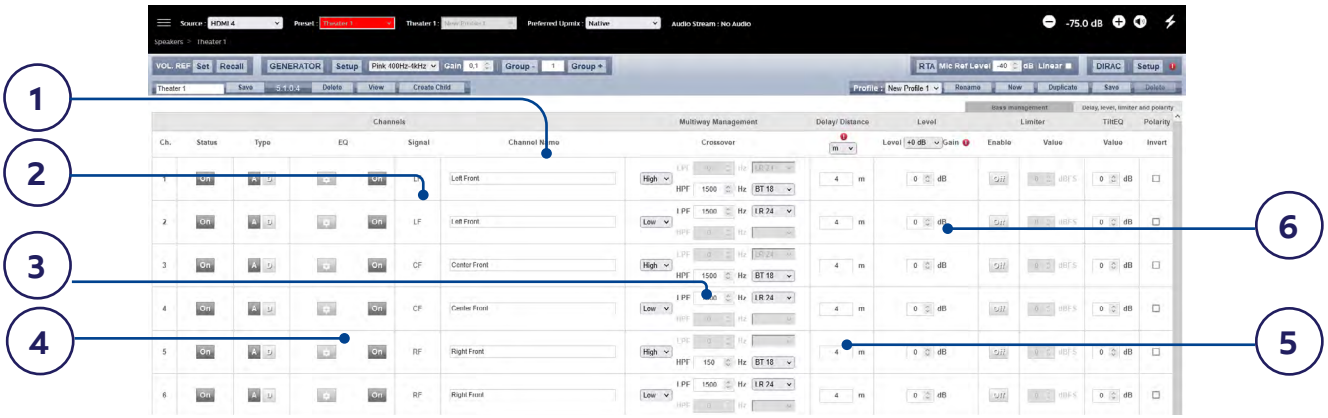
The gain figure can be set so that the noise generator operates at a level at or below that of a normal source playing at 0dBFS. Default is 0.1 (-20dBFS).

### 17. Group -/+

When the noise generator is active, use this function to play the noise through different groups defined in "13. Setup".

### 18. DIRAC

See "Dirac Live®" on page 27 for use of Dirac Live® Calibration Tool.




## Multi-way Speaker/Subwoofer Setup

During the initial Theater Definition setup, you have the option of defining any speaker/subwoofer as multi-way. Doing so will assign 2 to 4 output channels (up to 8 for subwoofers) to each speaker/subwoofer instead of 1. In this configuration, more than 1 amplifier channel will be used per loudspeaker, and the EVO *One* will perform the crossover function for each loudspeaker.

All settings detailed in section "Individual Channel Adjustments" on page 17 also apply and will not be covered again here. This section only describes the differences notable for multi-way loudspeaker/subwoofer configuration.

### 1. Channel Name

By default, the channel names are named by the signal they receive. For clarity, you may wish to rename these according to the signal they reproduce e.g. Left Front High, Left Front Mid, Left Front Low, Sub Left. Use Latin-1 character table with no special character.

### 2. Signal

Note that in this example (Left Front is a 2-way active loudspeaker), Each of the first 2 channels receives the same Left Front signal.

### 3. Multi-way Management

Use this section to filter the signal for each section.

- **Section**: Choose whether each channel reproduces Full Range, Low Pass Filtered, Middle (band pass), or High Pass Filtered audio. Two-way speakers will not have Middle option.
- **Crossover Frequency**: When the section is chosen as anything other than Full Range, set the crossover frequency for the Low and High Pass filters for each section.
- **Slope**: For each filter, select a slope. Options are Butterworth (12dB / oct, 24dB / oct, 36dB / oct and 48dB / oct), Linkwitz Riley (6dB / oct, 12dB / oct, 18dB / oct, 24dB / oct, 36dB / oct and 48dB / oct) and Bessel (12dB / oct, 24dB / oct, 36dB / oct and 48dB / oct).

### 4. Channel EQ

For each channel, you can adjust EQ by selecting the Wheel. EQ can be bypassed to compare with and without equalization selecting On or Off.

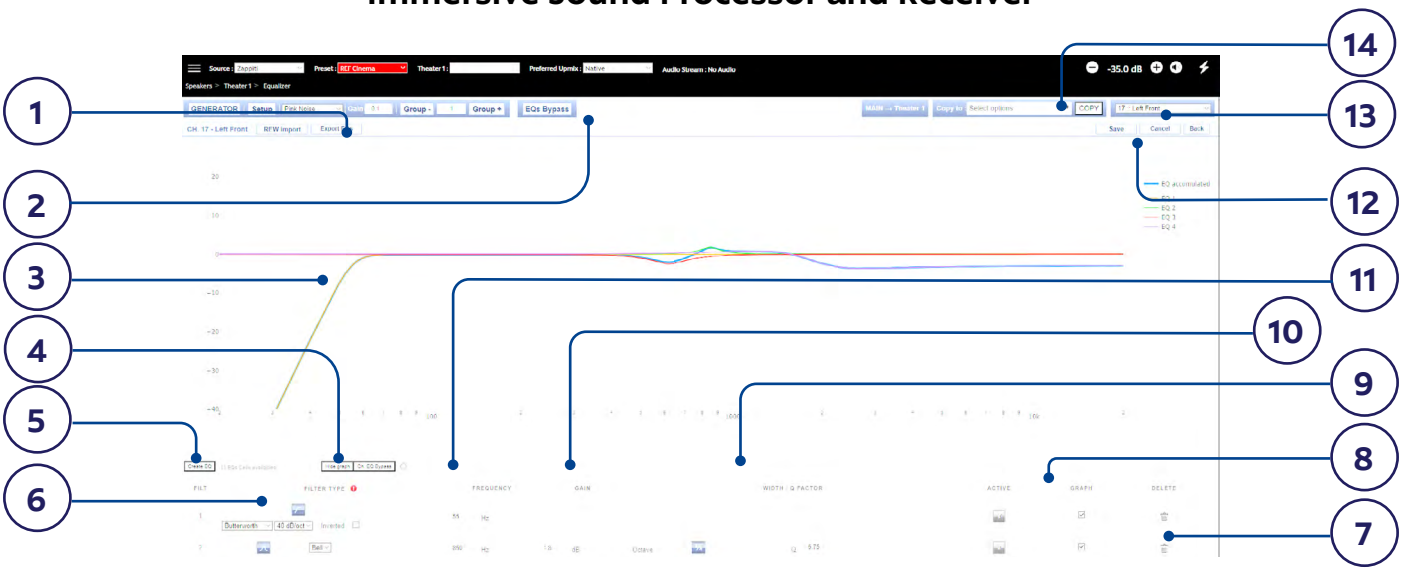
### 5. Delay

Set the delay of each section. For active multi-way loudspeakers, it may be helpful to do this in milliseconds and measure time-of-arrival differences at the crossover point when using LR or BT6 filters to time align each section of a multi-way loudspeaker.

### 6. Level

Active multi-way loudspeakers almost certainly have different sensitivities per module. Set the relative level of each here. When possible, use 0 as the maximum figure and attenuate other channels to match the loudest channel. You can also set global makeup gain for the entire theater as described in "8. Level" on page 18.

*Note that after making any changes, you must press the SAVE button near the top right of the screen or you will loose your changes.*




## Channel EQ

Each channel can have up to 20 filters cells for equalization, including additional crossover capabilities.

### 1. EQ Export

The complete EQ settings can be exported into a file with .txt extension that can be reloaded in the EVO *One* using the REW import function (see "1. REW import" on page 22).

### 2. EQ Bypass

When developing a custom set of EQ per channel, it is sometimes helpful to bypass the entire group of EQ to check your progress against the starting point.

### 3. Graphical View

The EQs defined are visualised in a graphical window. Individual and combined EQ curves are shown, providing an instant understanding of EQ impact on the correction curve.

### 4. Show / Hide Graphical View

To free screen space to visualize the complete EQ list, it is possible to Hide the graphical view using the "Show graph" button.

### 5. Create EQ

To design EQ curves for any channel, you need to add EQ definition line using the Create EQ button.

### 6. Filter Shape

Each filter must begin with a variation of one of 6 types.

- **Low Pass**: Continuously declining output above a cutoff frequency at a defined rate.
- **High Pass**: Continuously declining output below a cutoff frequency at a defined rate.
- **Bell**: Band pass or cut filter with a defined center frequency, boost or cut amount, and Q.
- **Low Shelf**: Boost or cut frequencies below a cutoff frequency by a fixed amount and adjust the Q.
- **High Shelf**: Boost / cut frequencies above a cutoff frequency by a fixed amount and adjust the Q.
- **All Pass**: Up to 4th order filters creating phase shift at a given frequency without changing magnitude.

For LPF and HPF choose a type and slope amongst Butterworth (12dB / oct, 24dB / oct, 36dB / oct and 48dB / oct), Linkwitz Riley (6dB / oct, 12dB / oct, 18dB / oct, 24dB / oct, 36dB / oct and 48dB / oct) and Bessel (12dB / oct, 24dB / oct, 36dB / oct and 48dB / oct).

### 7. Delete

Unused EQ line can be removed using the Bin button.

### 8. Status

In the course of designing your filter, you may wish to measure or listen to progress compared to the absence of that filter. Click Active "No" to temporarily omit that filter from the aggregate curve. Click "Yes" to activate it back. You can also decide here whether it is shown in the visualization curve by checking the Graph item.

## 9. Quality Factor / Bandwidth

Bell and Shelf filters require that you specify a Q (from 0.05 to 32). High Q affects a narrow bandwidth, and low Q affects a wide bandwidth. You can enter this number directly in the text box or increment/decrement by the amount chosen in the header row using the +/- buttons to the right. Or, click a fractional or multiple octave button to automatically calculate Q.

## 10. Gain

Bell and shelving filters require that you set the amount of boost or cut. You can enter this number directly in the text box or increment/decrement by the amount chosen in the header row using the +/- buttons to the right.

## 11. Frequency

Each filter requires that a center or cutoff frequency be specified. You can enter this number directly in the text box or increment/decrement by the amount chosen in the header row using the +/- buttons to the right.

## 12. Save

Make sure you SAVE the EQ settings before changing from channel or leaving the page.

## 13. Channel Select

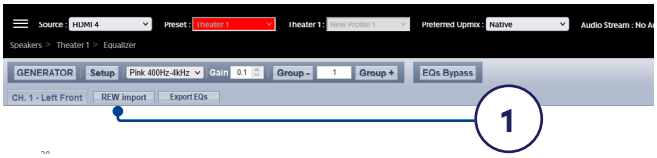
Select the desired channel to equalize here.

## 14. Copy to Channel

You may wish to duplicate your filter set to another channel without manually rebuilding it for each identical channel. Select one or more channel(s) to copy the current filters to and click COPY.

*Note that after making any changes, you must press the SAVE button near the top right of the screen or you will loose your changes.*

## Room EQ Wizard integration




## 1. REW import

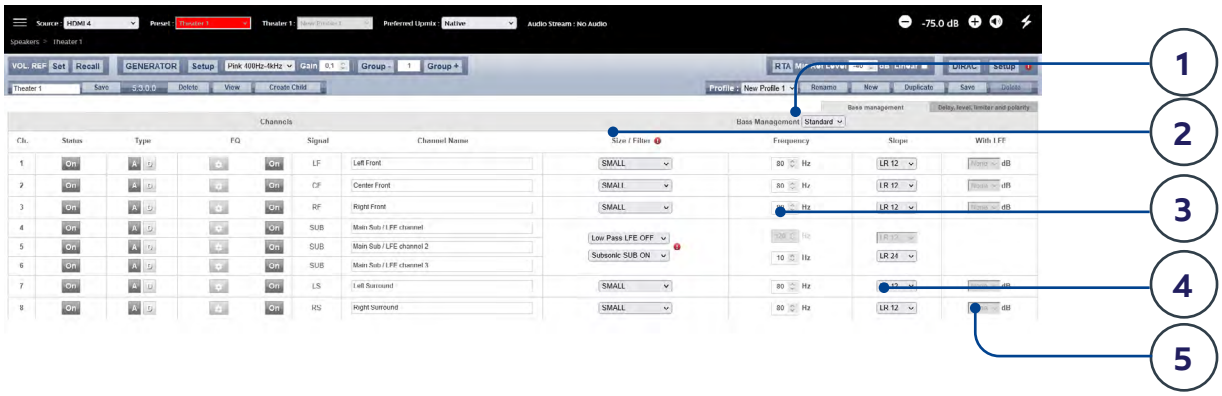
The EVO *One* offers the possibility to use external Room Correction tool such as the Room EQ Wizard (REW). REW offers very advanced measurements and filtering capabilities where you can define equalization and measure the effect in both time and frequency domain. This gives a total flexibility for EVO *One* users to go from a fully automated approach with Dirac Live to a fully manual approach that REW offers.

To allow for importing filters defined in the REW tool, you must make sure that you first set the REW tool for StormAudio ISP/ISR compatibility and select "Export filter settings as Texts" in the tool.

Once done, you can then do your EQ for each channel and export the equalization as a "*.txt" file.

In the EVO *One*, select "REW Import" and load the file corresponding to the selected channel. You will prompted for choosing between adding to or replacing existing EQs. Once selected, the EQ page will then be loaded with the REW defined filters.

*Note that you can define up to 12x Parametric EQ and 2x High Pass or Low Pass filters (up to 48dB slope) in the REW tool with the StormAudio compatibility mode.*




## Bass Management

Bass Management is one of the most important and critical part to adjust in the EVO *One* in order to achieve the best bass response of your system depending on the speakers and subwoofers used but also on their integration in the room.

There are various use cases and this will mainly depend on whether you want to manage this manually with the Standard mode or you go fully automated using the options Dirac Live Room Correction offer between Bass Control and Active Room Treatment. Bass Control will adjust your multiple subwoofers and speakers automatically but will not allow wide bandwidth speakers to reproduce the Bass. Active Room Treatment will consider all capable speakers to reproduce the Bass and provide a well controlled bass reproduction in any room.

### 1. Mode

The EVO *One* offers two modes:

- **Standard:** This mode is the basic mode, usually suitable for most of the use cases where the low frequencies are reproduced by subwoofers and with the need of a single crossover adjustment between each speaker and the subwoofers.
- **Dirac:** The Dirac mode is only accessible when applying the Dirac Live Room Correction process and selecting between Dirac Live®, Bass Control or Active Room Treatment modes. In this Dirac mode, the Bass Management or bass routing will be set in the Dirac tool with no possibility to override them in the EVO *One* UI (all adjustments will be grayed out). See "Dirac Live®" on page 27.

### 2. Size/filter

When in Standard mode, the system offers the possibility to define how the bass are exctracted from the speakers and redirected to the bass reproducers, whether they are subwoofers or speakers.

- **Small:** When a channel is set to Small, bass in this channel is redirected to the Bass reproducers. The channel is high pass filtered according to the HPF frequency and slope. Low frequencies are routed to the bass SUB channel according to LPF frequency and slope. Individual HPF and LPF definitions are only available in Expert mode. Small speakers cannot have SUB bass channel or LFE bass mixed in.
- **Large:** Channel is not band limited. When a channel is set to Large, no bass is redirected from this channel to the bass SUB channel. Use this setting when the loudspeaker has sufficient bandwidth and output capability to reproduce low frequencies. Channel can have SUB bass channel and/or LFE bass mixed in.
- **Large and Sub:** Channel is not band limited, but a copy of the bass for this channel is routed to the bass SUB channel as well. Set the frequency below which bass should be sent to the bass SUB channel and the slope at which the crossover occurs.

Subwoofer channels have specific settings. By definition, subwoofers have limited bandwidth and some are more limited than others.

- **Low Pass LFE:** When this is set to ON, the subwoofer channel has a low pass filter applied according to that channel's Frequency and Slope. This is designed to limit the channel's ability to reproduce the upper portion of the bass spectrum. This is usually done to prevent the subwoofer from contributing midrange distortion.
- **Subsonic SUB:** When this is set to ON, a high pass filter is applied to the channel which restricts the subwoofer's ability to reproduce very deep bass according to the frequency and slope defined for that channel. Many subwoofers, especially smaller models do not have the amplifier power or driver displacement required to accurately reproduce very deep bass. By actively filtering very deep bass away from the subwoofer, it is better able to reproduce bass within it's useful bandwidth.

### 3. Frequency

When the channel is set to Small, Large and Sub or Large with Sub, the crossover Frequency defines the point below which bass in this channel is routed to the bass SUB channel in standard mode. In Expert mode HPF to the speaker and LPF to the bass SUB channel can be adjusted individually. Note that the frequency is the -3dB point along the slope defined in the next column and is not an absolute cutoff point.

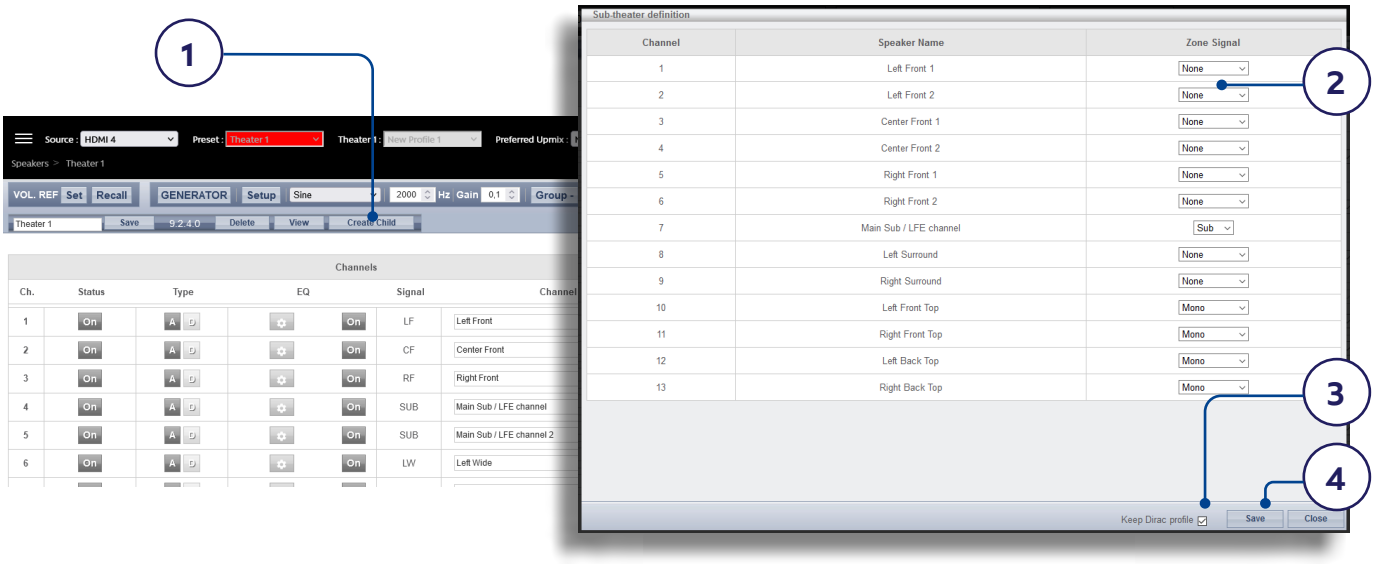
### 4. Slope

The rate at which bass is 'crossed over' into the subwoofer when the channel is set to Small or Large and Sub. Linkwitz-Riley, Bessel and Butterworth type filters are available with 12dB to 48dB / octave slope ($8^{th}$ order).

### 5. With LFE

When a channel is set to Large, Large and Sub or Large with Sub, this channel can optionally reproduce LFE bass which would normally be the sole responsibility of the subwoofer channels. When set to None, no LFE will be mixed into this channel. When set to a figure between 0dB and -20dB, LFE bass attenuated by that figure will be mixed into this channel. This feature is useful when the main channels have sufficient bandwidth AND dynamic range to support the subwoofers in creating an appropriate amount of bass sound pressure in the room.

*Note that after making any changes, you must press the SAVE button near the top right of the screen or you will loose your changes.*




## Child Theater / Sub Theater

You may optionally create alternate speaker definitions in your theater with some restrictions. For example, if you wish to have music playing before the movie plays before everyone is seated and quiet, you might only want that music playing from the overhead speakers so as not to interfere with conversation. In this case, you can define a child theater so that stereo left/right audio is played only through the top speakers (as in the example illustrated above).

Child theaters behave just like main theaters in that they can be selected as outputs, programmed into presets and can have multiple profiles, including with specific Dirac filters.

Note that although multiple Child theaters can be designed per main theater, signal assignment is common to all.

### 1. Create Child

From the Main Speakers page, Edit your theater. Click Create Child. A window will appear with a list of loudspeaker names and their channel ID.

### 2. Zone Signal

For each loudspeaker, select the signal to be played. You may choose between Stereo Left, Stereo Right, Mono, or None. Subwoofer channels can play Subwoofer signal or None.

### 3. Keep Dirac Profile

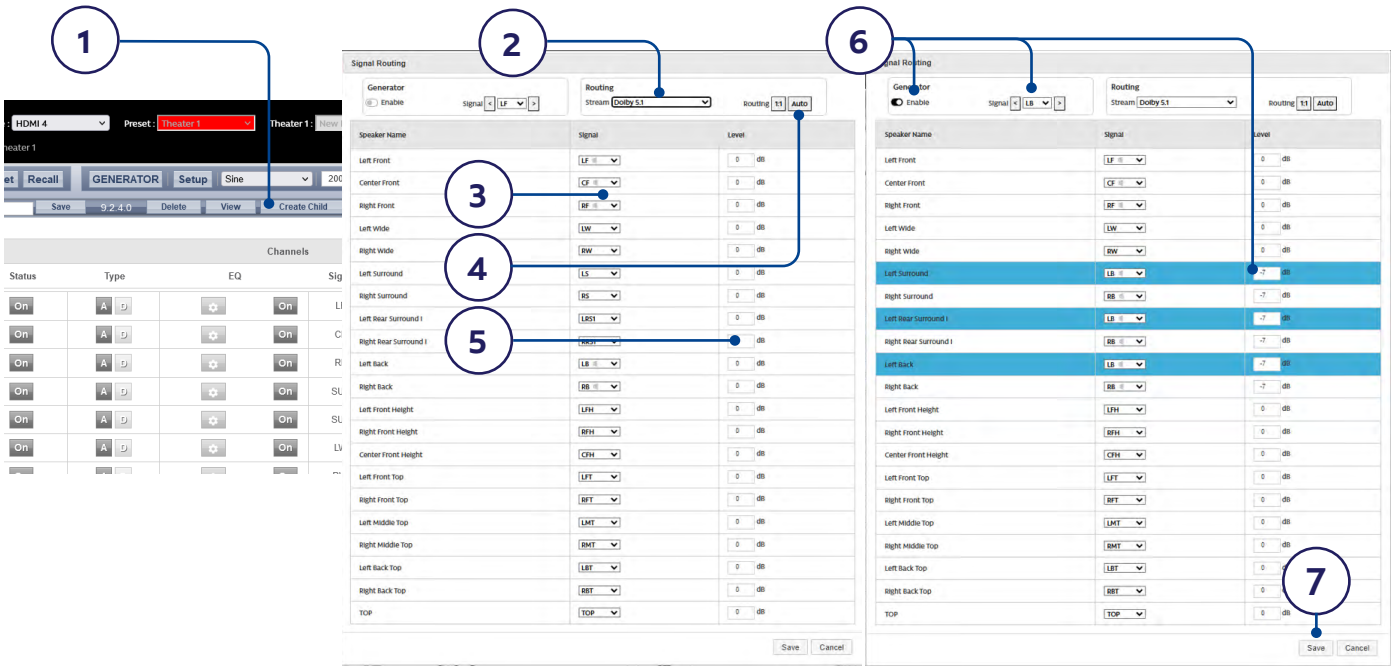
If you have created a Dirac profile for the parent theater, you have the option to retain that calibration for the child theater. Note that it might be recommended to run a new Dirac calibration in case the listening area of the Child Theater is different from the Theater mode. To do so, follow the same process as defined in the next page.

### 4. Save/Close

Save when done, or Close to cancel.

### 5. Bass Management / Delay Level Phase

Child theaters have comparably limited options compared to full theaters. If a child theater includes a subwoofer channel, the full range channels are forced to small. In this case, you can adjust the crossover frequency, slope and subwoofer subsonic filter. If no subwoofer channel is enabled for the child theater, the main channels are forced to large.




## Flexible Signal Routing

Depending on the Codec played and the Theater Layout, the default signal route may not use the speakers optimaly. Some speakers can remain silent, although they could be used to play the same signal as other speakers in the room, such as for example in a typical case where you play a 5.1 content in a 9.1 or bigger layout: the LS/RS signals could be routed to more surround channels available in the layout. To do so, one must select the route and adjust the signal level in order to maintain overall signal level balance.

### 1. Signal Routing

From the Main Speakers page, Edit your theater. Click on Signal Routing. A window will appear with the list of the speakers installed and the default routing.

### 2. Select the stream context

Analysis of the various codecs helps define common stream contexts, being the possible signal routing in a given speakers map. For each context, the default signal routing is shown by a small "speaker" logo in the signal table.

### 3. Edit the signal route

For each speaker and selected context, it is possible to change the signal route. Select the signal you want to play amongst the available signals.

### 4. Predefined routing

At first installation, the routing is following the default immersive decoding route. This default route can be recalled at anytime for each stream context using the 1:1 button. It is also possible to use the Auto routing. Selecting the Auto route button, the system will define automatically the best route (and signal level) for the selected context, based on each codec recommendation and CEDIA RP22 guidelines.

### 5. Signal level adjustment

When routing a signal into multiple speakers, we are increasing the overall signal SPL in the room, requiring the signal level to be adjusted.

### 6. Noise generator

Using the noise generator, a SPL meter and scanning each signal feed, one can adjust the signal level. Sound will come from all speakers fed with the same signal, and the adjustment will apply in all of them equally.

### 7. Save and exit

When the adjustment is completed, press SAVE to exit the Signal Routing window.

## Dirac Live®

Dirac Live is a highly advanced calibration tool which uses sophisticated mixed-phase filters to compensate for loudspeaker and room deficiencies in order to provide optimal acoustic performance of your theater.

The Dirac Live® tool (3.x and onward) is free of charge and available on Dirac Website after registering (https://live.dirac.com/register/) and the calibration kit is usually purchased by the installer through their dealer. Stormaudio ISP/ISR comes by default with the activation of both Bass Control and Active Room Treatment add on modules which add to the standard Dirac Live room correction suite the ability to also include the bass management with any number of subwoofers and speakers used in the installation. This is enabled automatically in the tool once the EVO *One* connection is confirmed.

All Theaters, zones, and child theaters can be calibrated with Dirac Live.® Presuming you have a calibration kit, prepare your EVO *One* for calibration by following the steps below. **Warning:** do not use the remote controls to adjust volume during the process.

### 1. Define Speakers

For each theater or zone you will calibrate using Dirac Live® (except Headphones and Downmix), ensure that you have correctly defined each speaker's Size/Filter, multi-way parameters or manual equalization (refer to "Channel EQ" on page 21).

In case you decide to calibrate the subwoofers manually, you also have to define the Bass Management parameters such as Frequency and Slope (see "Individual Channel Adjustments" on page 17) as this won't be possible to do so after the Dirac calibration process unless you duplicate the Profile.

In case you want to use the Bass Control or the Active Room Treatment (ART) module of the Dirac Live tool that will be described in the next pages, you can skip the bass management adjustments and move to the next step. We recommend to use ART.

### 2. Download and install Dirac Live® 3.6.x Calibration Tool Software

You can download a Mac or PC version of the software at https://www.dirac.com/live/downloads/ or on the StormAudio Client Portal (www.stormaudio.com). Depending on your EVO *One* acquisition date, the ART licence shall be bought from Dirac.

Install the software on the laptop you will use to calibrate the EVO *One*. Use the Dirac account credentials to log in the tool.

### 3. Prepare Calibration Hardware

StormAudio recommends using the UMIK-1 USB microphone that is part of the Microphone Mini Kit available in StormAudio's catalog, other hardware may be compatible with the Dirac Live® Calibration Tool. This guide will only cover UMIK-1 use case.

Connect the UMIK-1 to your laptop. Note the serial number on the microphone and navigate to https://www.minidsp.com/products/acoustic-measurement/umik-1. Enter the serial number to obtain your unique calibration files.

### 4. Choose Theater or Zone to Calibrate

On the Main Speakers page, EDIT the theater or zone you wish to calibrate.

### 5. Select Base Profile

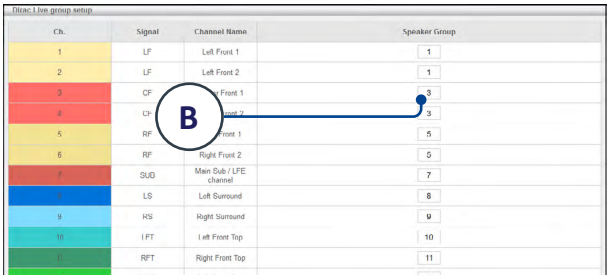
Select the profile which will serve as the basis for your Dirac Live® calibration from the dropdown menu.

### 6. Setup Dirac Groups

Multi-way speakers and Subwoofers are automatically grouped so Dirac sees them as one speaker and doesn't change the interchannel adjustments. They should share the same index when accessing the Dirac Group Setup (A).


When multiple subwoofers have been

configured using the replication, grouping them will forbid the calibration with Bass Control or Active Room Treatment. Shall you wish to adjust manually your subwoofer and present them as one group to Dirac and still allow Bass Control or Active Room Treatment, you must use the multi-way subwoofer function at the configuration level, else only Room Correction will work.




Channels that should play together during calibration should share a group number (B).

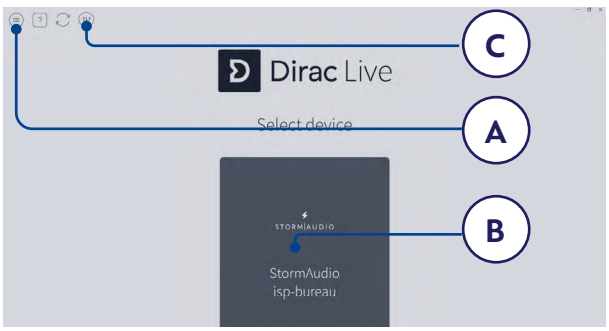
## 7. Initiate Calibration

Press DIRAC (A) to initiate the calibration.


A popup describing the process will be shown in the web UI. Verify that you are calibrating the correct theater or zone based on the correct profile. If not, cancel and return to step 4. Once verified, click Start New Calibration.

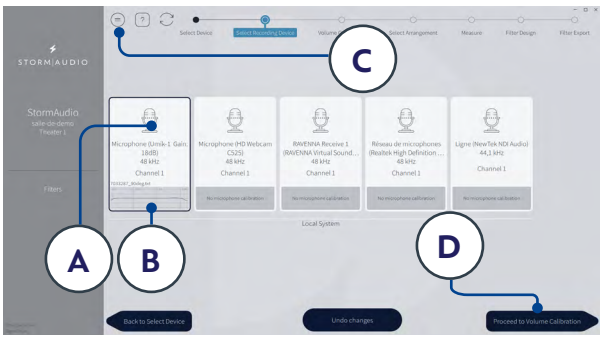
## 8. Return to / Open Dirac Live® Calibration Tool Software

Open the Dirac Live® software on your laptop and enter your Dirac Account credentials (A). It will scan the network and automatically find the EVO *One* ready for calibration (B). If it does not, manually enter the IP address of the EVO *One* (C). Select the device to calibrate (B).

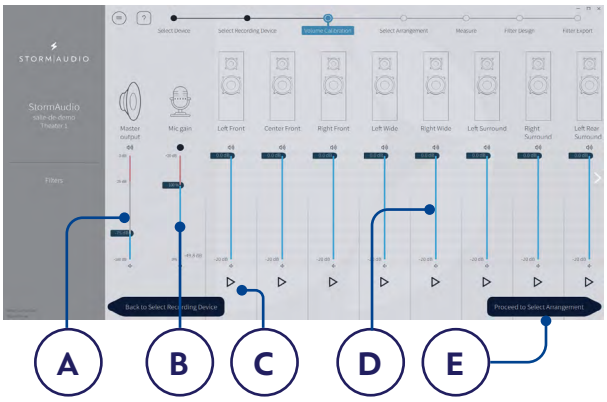



## 9. Configure Microphone

Choose the Recording Device UMIK-1 (A). Load the microphone calibration file (B) downloaded in step "3. Prepare Calibration Hardware" on page 31. Use "...90degree.txt" when placing the microphone in an upward facing direction. It is wise to save the project (C) along each step of the calibration in order to make recovery from interruptions easier. Also, measurements can be reused in order to regenerate a new filter design following adjustments to the target curve. Click Proceed to Volume adjustments (D).




## 10. Set Levels



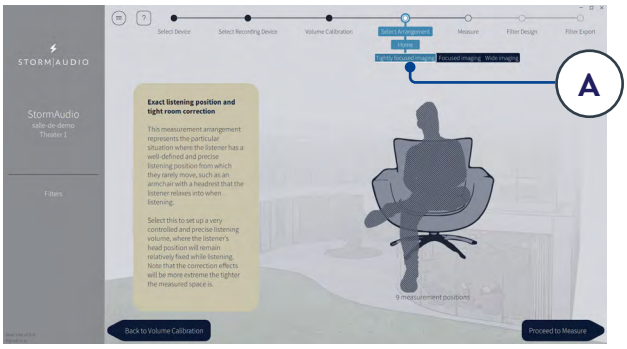

Now that the microphone is connected, ensure that the room is quiet. Adjust the Mic gain to 100% (B). Set the output volume (A) to a low level (-40dB for example). Start the test noise by pressing the PLAY button (C) on the first channel and adjust the Master volume to reach the middle area in the channel's meter. For each channel, activate the test noise and correct the channel volume using the corresponding slider (D) so that the meter reaches the middle area. All channels are automatically listed and subwoofers are automatically identified. Note that you should visualize here the Speakers Groups

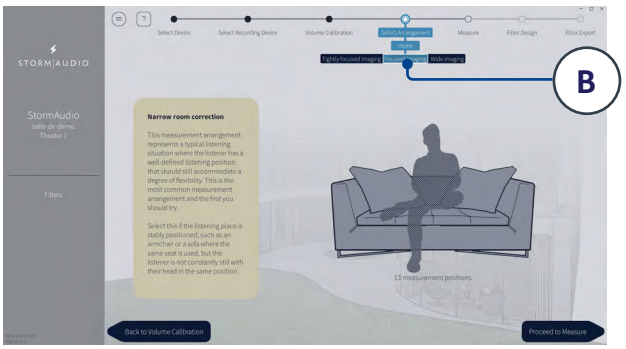
defined in step 6. Click Proceed to Select Arrangement (E).

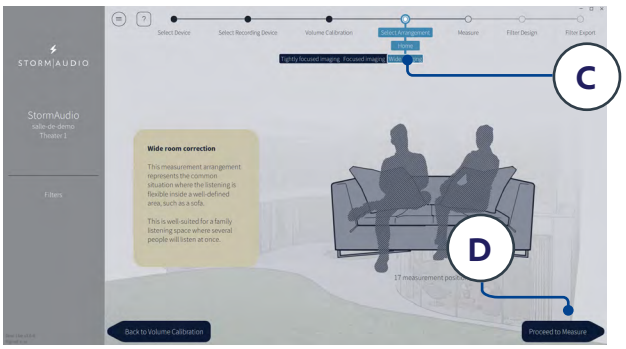
## 11. Measure Acoustic Response of Sweet Spot

Place the microphone in the exact sweet spot of the room at ear level to begin. It must be in the left-to-right center of the room since it will be used for loudspeaker distance and level calculations.

Select the arrangement you wish to define between tightly focused imaging (A), Focused imaging (B) and Wide Imaging (C) as illustrated below and described in the tool.




Start the measurement by pressing Proceed to Measure button (D). Keep the room silent during the process, the measurement waveform graphic is updated in real time.

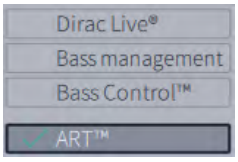
## 12. Measure Acoustic Response of Remaining Positions

Once the first measurement is taken, that position will be checked indicating successful capture. Move the microphone to the next position. Repeat measurements for all listening positions (A). With each measurement, the waveform graphic will update.


Click Proceed to filter design (B) when done with all 9, 16 or more measurements.

## 13. Filter Design

Dirac Live® 3.6.x offers the standard Dirac Live® Room Correction, Bass Management, Bass Control and ART modules.




- **Dirac Live:** This mode provides the regular Dirac Live® design with per speaker target curve and standard Dirac Live® filters calculation (so called Dirac Live® Room Correction)
- **Bass Management:** This mode provides regular bass management filters with standard Dirac Live® filters design and calculation including each sub-woofer gain being scaled by 1/(numbers of sub woofers) to match the target curve.
- **Bass Control:** Selecting this mode, the filter design will harmonise the sub-woofers and non-sub-woofers speakers in the lower frequencies using tailor made phase filters, delay and gains.
- **ART:** Selecting ART will enable the Active Room Treatment proposing to use all speakers and subwoofers to actively compensate for room issues under 150 Hz.

In the next parts, we will focus on the Active Room Treatment mode. With ART, we'll introduce the notion of Main and Support


speakers. Any speaker can be a support of another Main speaker. For detailed explanation on ART, please consult website and tutorial videos to get more insights.

## 14. Support speakers definition

For each Speaker group, you can define which group will support it in the (A) area.

- By default the selected group will have its speakers supporting each other. This can be disabled by clicking on the Support range of the group.
- Other groups can be added by clicking on the (A) area below the Main group. A default estimated support frequency range will be proposed, limited to 50 Hz for the Speakers and 20 Hz for the subwoofer. Adjust this range (B) according to the Speakers and Subwoofers specifications sheet for the low frequency, to avoid overload at unsupported low frequencies. For the Main speakers, the low frequency of the range defines the bass management crossover for this group. You can also adjust the max support frequency (max is 150 Hz).
- Subwoofers will usually offer the widest Support frequency range. Depending on the Sub location and type, it might be preferred to limit their high frequency cut so to not be able to hear and locate them. ART acts down to 20 Hz. It is possible to extend the Speaker/Subwoofer response to the infra bass by clicking the (C) box and adjust range to 20 Hz. System will go down to 10 Hz.
- Selecting a Group activates filters, as many as dots shown in (D) with a max possible number that will depend upon the unit and the speaker configuration defined. With this limit, not all Groups can be Support. Some arbitration might be required.

## 15. Target Curve

In Dirac Live® ART, just as in other Dirac Live® modes, the color and balance of the sound is set through a target curve. In ART mode the target curve is set per Speaker group considering the input signal:

- You can adjust the correction window by moving the curtain (E) for the high frequencies. Low frequencies are defined by the overall extension that all Support groups can offer (20 Hz here).
- The input target curve shows the coloration for the complex summation of the Main speaker high-range above 150 Hz and a mix of the Main speaker (in its working range), the subwoofers and all Support speakers within their capability range below 150 Hz.
- The target curve defaults to a flat correction that can be adjusted. Changing (F), it will be possible to either use the auto-target feature with the (G) adjustments for low and high frequencies or by defining adjustable points. You can add points by right-clicking on the target curve and select "Add control point to". You can also download StormAudio proposed target curves in our Download Center.
- Dragging the curve upward above the 0dB level on the Y-axis boost the affected frequencies. Correspondingly, dragging the curve downward under the 0dB level attenuates them.

It is possible to save or load target curve through the menu (H). Good target curve design is beyond the scope of this document, but there are some key points to remember.

- Do not attempt to boost bass of a loudspeaker

below its low frequency limit as this will only lead to high distortion and likely damage

- High quality speakers usually benefit from limiting the correction window to low frequencies.
- Ideal curves usually have a slightly downward slope. A loudspeaker may have a flat amplitude response on axis, but will rarely be flat off axis.

There are different possible viewing options available (I). Save the Target Curve through the Menu (H) for use in another channel or for other future use. Repeat for all speakers groups and then press Calculate (J) so the ART filters got calculated.

*Note that calculation can take up to 15mn.*

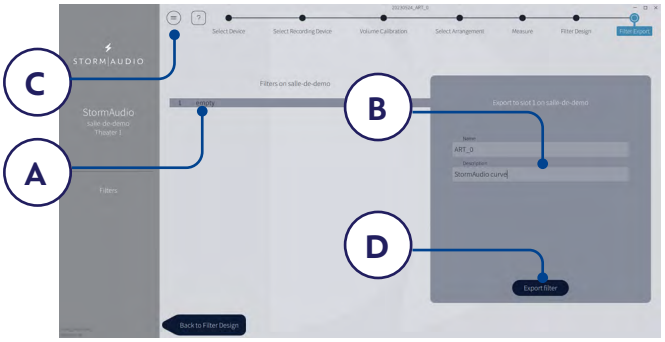
## 16. Corrected response

After the ART filters calculation is done, select the "Corrected" check-box in the plot options (A) to show the estimated input magnitude response for the selected channel. The corrected curve should conform to the target curve, as illustrated below.


If satisfied by the result, press "Process to filter export" (B).

## 17. Export Filters to EVO *One*

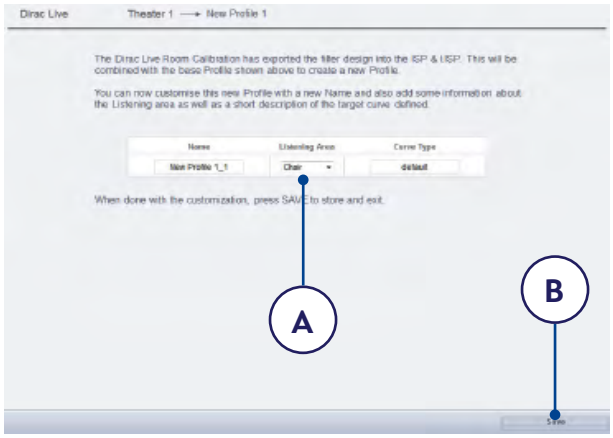
In this last step, filters created in previous steps are exported to the EVO *One* and combined into the new profile selected "5. Select Base Profile" on page 27.




Select the "empty" slot 1 (A), give a name and a description to your new Dirac profile (B). Save your project for future use (C) before selecting Export filter (D) and return to the EVO *One* Web UI.

## 18. Return to EVO *One* web UI

A popup has been updated to confirm that you wish to combine the Dirac Live




corrections with the base profile. The Name and Description Target curve can be changed using Latin-1 table characters. We also recommend to select the correct listening area that you used to make the Dirac Live® measurements (A). Click save (B) to continue. For corrections made to a zone, options are not available. Simply click save.

*Note that each time you go through the Dirac Live® process, the former filter design gets replaced. Each time the calibration is run, a new profile is created with the new Dirac Live correction.*

## 19. Return to Speakers Page

Now that you are back at the page where individual speakers can be edited, you will notice the new Dirac reference profile you named in the previous step is selected. New columns created indicate the calculated Dirac Delay and Dirac Level. No changes can be made to this reference profile. Should you wish to make changes, duplicate the profile, make desired changes to the duplicate, save changes to the profile and the theater. See "Audio Profiles" on page 16.


## Presets

Presets provide the installer with a way to group specific settings together into a scene which can be easily recalled by the end user from a remote control interface. By using presets, the installer can make use of the EVO *One* - a highly complex and capable theater controller - extremely simple and enjoyable to operate. For each new audio profile configured, a Preset gets automatically created. Each preset includes the following settings:

### 1. Active

When Y, the preset shows up in the list of selectable presets on the remote control. When N, the preset information is retained, but not available to select from the remote control.

### 2. Preset Name

Name the preset according to the usage case. For instance, if the entire family gathers together to watch movies, Movie Night. Max of 12 characters from Latin-1 table, no special character allowed.

### 3. Theater

The preset must include which theater to play. The list includes Theaters and Child Theaters. It does not include zones.

### 4. Profile

Each theater can have multiple audio profiles to choose from. Select the profile which will be loaded by default when the preset is chosen.

### 5. Dirac Room / Dirac Curve

If the audio profile was created with Dirac Live®, the listening area and curve description you entered in "18. Return to EVO *One* web UI" on page 31 will be indicated.

### 6. Audio Zone

You may choose to route audio to 0 or more zones as well. When zones are checked, they are accessible and controllable from the remote control when this preset is selected.

### 7. Upmix

Though the upmixing behavior is accessible from the remote control at all times, you may set the default upmix for the preset here.

### 8. Low Latency

In some use cases, it might be required that the audio latency gets reduced to its minimum, such as for Karaoke or live music sessions. In such case, it is possible to select the Low Latency mode that will help reduce the latency to below 15ms. Downside to this reduced latency is the deactivation of part of the post processing such as Dirac filtering. If the Theater was calibrated using Dirac, it might therefore be recommended to at least create a new blank audio profile and adjust the bass management and potentially some manual PEQs to meet expected sonical performance and create the related Preset.

*Note: only RCA analog inputs or HDMI (forced to LPCM digital via EDID) can be used in the Low Latency mode. Selecting a source with Coaxial/Optical audio input will disable the Low Latency mode as we cannot know whether it is LPCM or RAW stream. Also, no decoding nor upmixing is possible.*

### 9. Delete / Create

Delete any unused presets by clicking Delete in the correct row. Create a new preset by clicking Create.

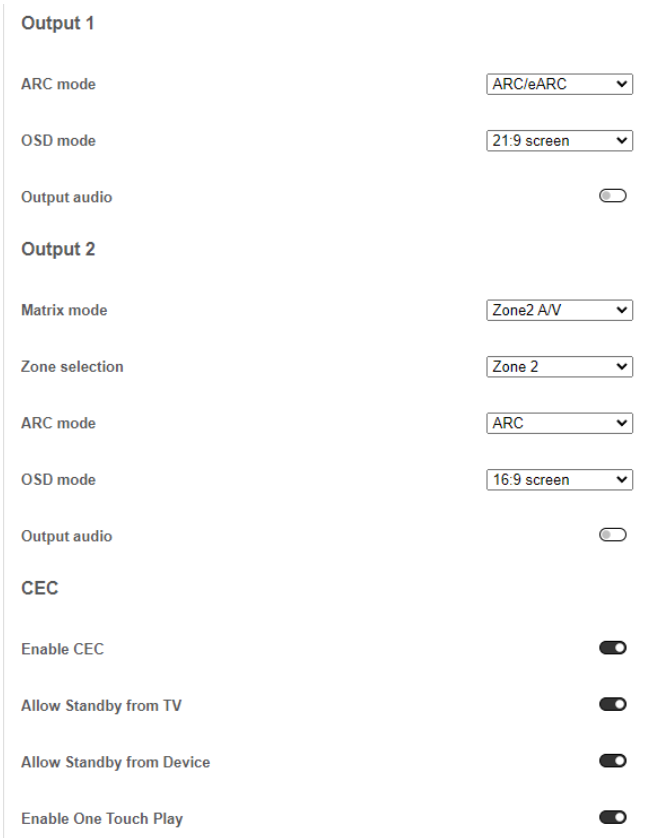
## Settings

The EVO *One* includes a variety of system-wide settings that are set in this menu that govern behavior of the unit. Ensure these are set as required for easy operation of the EVO *One* and any attached devices. These are only accessible to those with Installer level access or Expert User if assigned by the Installer.


### HDMI

There is one HDMI Output port in EVO *One*.

Below adjustments are available to adjust this port to match your audio video system requirements.



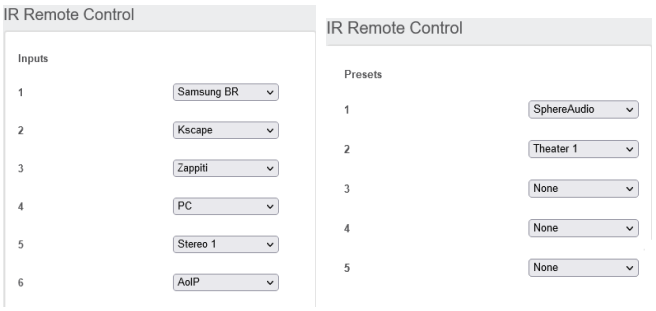

- **ARC Mode:** it is possible to get the audio from a TV connected to HDMI Out 1 through the HDMI cable. Select which mode you want to allow your TV set to provide through the link between ARC alone (Audio Return Channel) or ARC/eARC (enhance ARC). eARC allows for HiBitRate audio transmission, carrying Dolby Atmos and DTS:X stream.
- **On Screen Display (OSD)**: it is possible to enable the On Screen Display function of the ISP/ISR to show status information in the screens with two positions to fit the best way 16:9 or 21:9 screens ratio.
- **HDMI output audio**: it is possible to provide the two channels downmixed version of the Main Theater audio stream to the screen(s) connected to the EVO *One* output(s).

**CEC :**

- **Enable CEC:** involves activation of Fast Boot mode (see System Setup) and will provide Volume control function.
- **Allow standby from TV:** will add the EVO *One* power On / Off control through TV commands
- **Allow standby from Device:** will add the EVO *One* power On / Off control through Device commands.
- **Enable One Touch Play:** will allow auto switch to the correct EVO *One* input when TV / Device gets activated.

### IR Function Assignment & Commands

Expand Inputs and/or Presets to assign up to 6 inputs and 5 presets to discrete buttons on an IR remote control. Note that many "universal" remotes also have the ability to cycle through all available inputs or presets so even if you have more than 6 or 5 respectively setup, they can still be accessed via IR.




The EVO *One* offers a front panel remote sensor.

Two remote system codes are available: 16 (default) and 19. When two products share the same 16 system code, use the 19 for the EVO *One*. Note that in this case, the EVO *One* won't react to the StormAudio remote control.

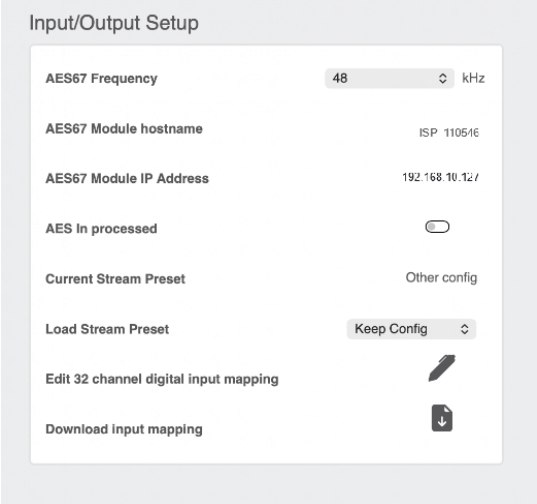
| Group | Command name | System | Command |
|---|---|---|---|
| POWER | LIGHT | - | - |
| | POWER ON | 16 | 29 |
| | POWER OFF | 16 | 30 |
| | PWR ON/OFF | 16 | 12 |
| CONTROL | DISPLAY | 16 | 71 |
| | INFO | 16 | 15 |
| | UP | 16 | 80 |
| | LEFT | 16 | 85 |
| | HOME | 16 | 82 |
| | RIGHT | 16 | 86 |
| | DOWN | 16 | 81 |
| | EXIT | 16 | 83 |
| | ADJUST | 16 | 20 |
| INPUTS | INPUT 1 | 16 | 1 |
| | INPUT 2 | 16 | 2 |
| | INPUT 3 | 16 | 3 |
| | INPUT 4 | 16 | 4 |
| | INPUT 5 | 16 | 5 |
| | INPUT 6 | 16 | 6 |
| | INPUT BACK | 16 | 33 |
| | INPUT NEXT | 16 | 32 |
| VOLUME | VOL UP | 16 | 16 |
| | VOL DOWN | 16 | 17 |
| | MUTE | 16 | 13 |
| PRESET | PRESET 1 | 16 | 67 |
| | PRESET 2 | 16 | 68 |
| | PRESET 3 | 16 | 69 |
| | PRESET 4 | 16 | 70 |
| | PRESET 5 | 16 | 72 |
| | PRESET + | 16 | 47 |
| | PRESET - | 16 | 48 |
| PREFERRED UPMIX | NATIVE | 16 | 94 |
| | STEREO | 16 | 95 |
| | DOLBY SURROUND | 16 | 91 |
| | DTS NEURAL:X | 16 | 92 |
| | AURO-MATIC | 16 | 93 |
| | STORMXT | 16 | 96 |

The EVO *One* IR code table has been added to Harmony Logitech database. It is therefore possible to create Activities involving the EVO *One* as the audio reproduction device. Check for **StormAudio** and **ISP Elite,** brand and device names respectively in the MyHarmony app. See MyHarmony website for more information.

When using IR to control the EVO *One*, we recommend activating the Fast Boot mode in "System Setup" on page 35 to ensure there is no loss of IR commands while the EVO *One* powers up, especially when using Logitech Harmony and the IR sequences it may generate.

## Input/Output Setup

With the 16ch AES/EBU and AoIP Digital Inputs, multiple parameters need to be set, as shown below.

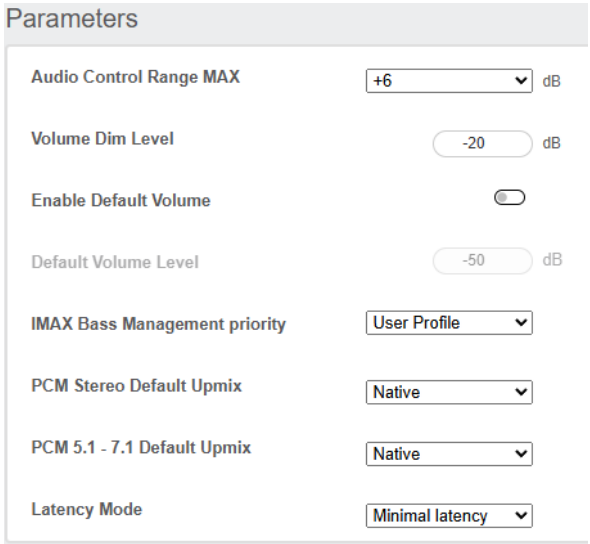



- **AES67 Frequency:** With the Digital AoIP module, it is necessary to indicate what the network Sampling Rate is to allow for a stream to be defined. Choose between 48 kHz or 96 kHz.
- **AES In processed:** Defines whether the upmixing capability is enabled (<8ch input) or bypassed, so Processed/Upmixed with your Preferred Upmix or only post-processed up to 16ch respectively. In case of Processed enabled, the channel mapping is fixed: L, R, LFE, C, Ls, Rs, Lb, Rb. In case of bypass mode, see "digital input mapping" section below. Note that Lb/Rb are equivalent to Lrs/Rrs of DCI specifications.
- **AES67 Module hostname:** This is the name given to the module at the factory. It is adjustable in the AoIP module specific WebUI. Consult our Knowledge Base and the dedicated AoIP module documentation for more information.
- **AES67 Module IP address:** The AoIP module comes by default in DHCP. When connected to the network, you'll find here the IP address that was automactically assigned, necessary for you to identify the module and define streams. Note that clicking on the IP address will open the AoIP

module WebUI in another browser tab.

- **Current Stream Preset:** This field indicates which Stream Preset is currently selected. In case the Stream was defined within the AoIP configuration user interface, "Other config" will be shown. Else it will show Stream Set A, B, C or D, depending on the Preset loaded in the step below.
- **Load Stream Preset:** To allow for an easy configuration between the ISP and the Impulsion 8 amplifiers, 4 different predefined configurations are available. Selecting a Preset (A, B, C and D) creates a set of 4 Streams of 8 channels each that will be loaded to the AoIP interface, Preset A being the default one. Once a Preset is selected in the ISP, one must make sure the same Preset is selected in the Impulsion 8.
- **Digital input mapping:** The channel mapping between the audio server and the EVO *One* defined theater might not match. Selecting EDIT will provide access to a mapping matrix allowing you to remap the signals accordingly.
- **Download input mapping:** you can download the input mapping as a spreadsheet.

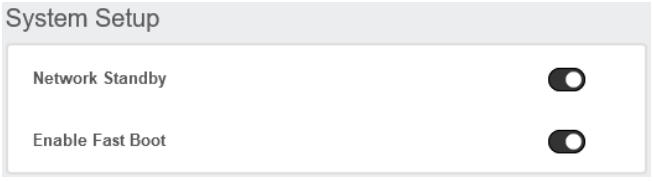
## Parameters




- **Audio Control Range MAX**: Set the maximum allowable level. +6dB (default), +3dB, 0dB.
- **Volume Dim Level**: To quickly attenuate the Master volume (but not mute it), a user can click Volume Dim. Set the level of attenuation here. Default is -20dB
- **Default Volume Level**: To ensure the ISP/ISR always starts up with a known Master volume level, it is possible to define a default volume level to which the unit should refer to at power up. You must select "On" to enable this feature. When "Off", the volume will be loaded with the Last volume level. Note that the Default level is common to all Theaters and Zones defined in the system.
- **IMAX Bass Management priority**: The "IMAX default" mode follows the IMAX® Cinema recommendations with a Bass Management adjusted with a fixed 70 Hz crossover to any speakers, with no bass redirection to the subwoofers that will only reproduce the LFE signal. This mode is therefore only recommended if your system can accept such adjustments. If Dirac Live with Bass Control was used to calibrate the room, the Bass Control portion will be disabled and only the speakers filtering will remain in use. If the Bass Management was manually configured either in Standard or Expert mode, it will be overriden by these settings whenever IMAX® content is played. If you wish to keep the Dirac Live Bass Control correction or your own Bass Management setup, please select "User profile" so your Bass Management remains unchanged.
- **PCM Stereo Default Upmix**: When the Native Upmix is selected for a given preset Preferred Upmix setting, the detection of a Sterem PCM stream will activate the upmix defined here.
- **PCM 5.1 7.1 Default Upmix**: When the Native Upmix is selected for a given preset Preferred Upmix setting, the detection of a 5.1 or 7.1 PCM stream will activate the upmix defined here.
- **Latency mode**: The decoding is a process that create latency to the system. This latency can vary from codec to codec. Most of the time, it is preferrable to have a constant latency whichever codec is played to ensure correct lipsync. But in some cases, such as with gaming, it might preferrable to minimize this latency. In the latter use case, select Minimal Latency.

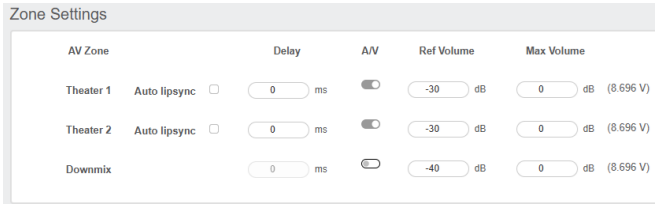
## System Setup

To control the ISP/ISR using the iPad StormRemote App or Control Systems via TCP/IP, the Network should remain active at all times.

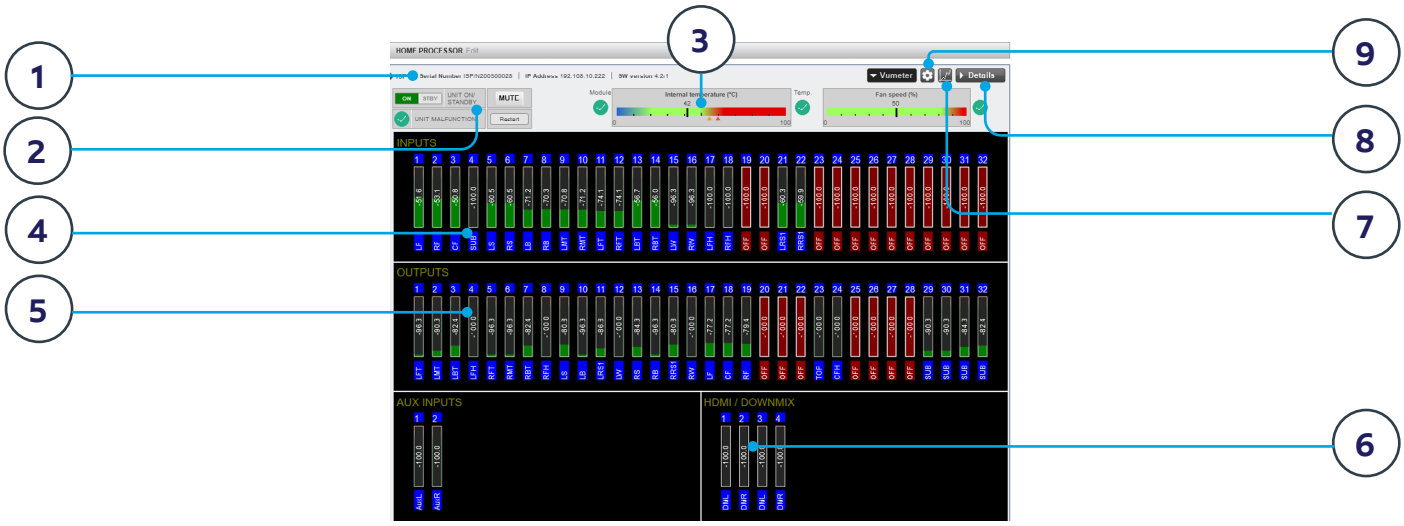



- **Network standby**: Enable the Network Standby (On) to allow for control via IP when in Standby. Note that the standby consumption will be higher.
- **Enable fast boot:** this mode will substantially decrease power on time of the ISP/ISR at the expense of greater standby power consumption.

## Theater Settings




- **AV Zone Delay adjustment:** Each Theater or Audio Zone when A/V is turned on can have audio delay adjusted within a range of 250ms. This adjustment can be made either manually using the delay adjustment in ms steps or automatically using the HDMI Auto Lipsync feature. When Auto Lipsync is ticked, the delay adjustment is overidden by a value of the delay deduced from the signal chain through the HDMI communication link. It has to be noted that Auto Lispync can only work if all devices in a HDMI chain is supporting this feature. Please contact the device maker for compatibilty verification.
- **Ref volume:** When using the Adaptive Loudness feature, a reference level is required. This level is by default adjusted at -30dB volume level. For the Adaptive Loudness to work properly, one must adjust the reference level at the closest sound pressure level that was used during the mixing of the soundtrack. Usually, this level will vary from 72 to 85 dB SPL, 78 dB being a good average level corresponding to a typical mix for a residential use. You can adjust the level here or using the SPL meter in the Speaker page. Refer to "12. Volume Reference" on page 18 for more informations.
- **Max volume:** When there is a need to limit the global output level of the system, it is possible to use the Max Volume parameter. By default, it is set to the maximum volume control allowed (0 dB) but can be adjusted to any level required.




## Monitoring

Accessing the Monitoring page powered by StormMonitoring, you will get detailed information about the operation of the EVO *One*.

### 1. Product Information

Model, serial number, IP address and firmware version information are listed.

### 2. Basic Status

Indicator and control over On/Standby, Mute, and system restart as well as malfunction indicator.

### 3. Temperature / Fan Speed

Two indicators show the current temperature (black line) and rear fan speed. Orange markers indicate current settings for system warning and critical high temperature.

To view items 4-6, click the VUMeter button to expand the page.

### 4. Decoder

Visualize the realtime level of audio channels being received by the decoder. For example, if 2 channel PCM is being received, you will see activity on LF and RF.

### 5. Outputs

Visualize real time audio output of each output channel on the rear panel. For instance, if 5.1 audio is being received and the current upmix is Native, you will see activity on LF, CF, RF, SUB, LS and RS channels. Useful for verifying if audio should be present on an output.

### 6. HDMI/DOWNMIX

Visualize audio output on the HDMI outputs and XLR downmix outputs.

### 7. Logging

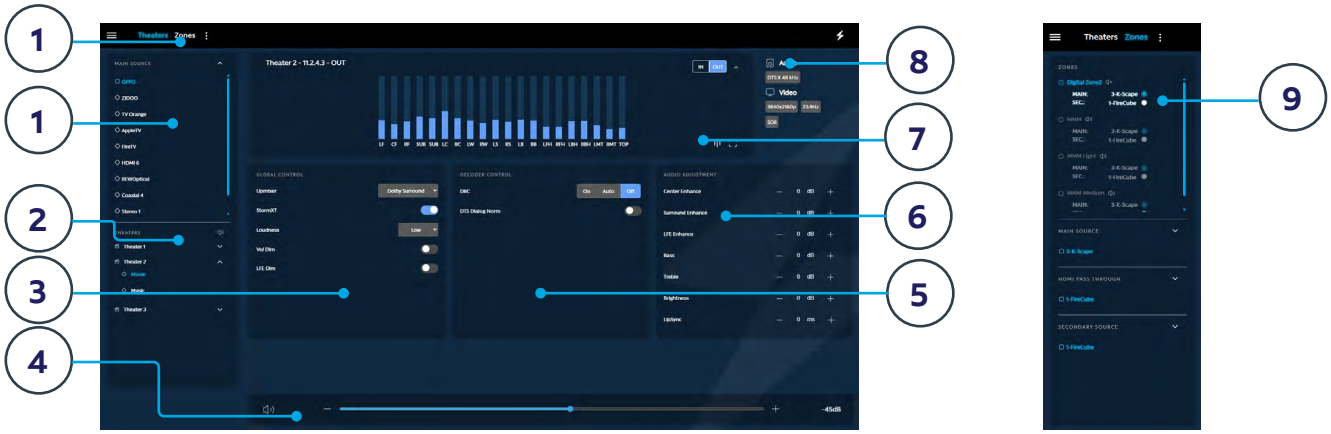
Logging is a useful feature to help identify strange behavior with potential problems caused by heat. Click the graph button to show a line chart of either temperature or fan speed over time. Use the options in the popup to choose timeframe, zoom or move around the plot or export the image.

### 8. Details

Click to expand a window showing detailed information about audio and video coming into the player including format, resolution, color space, copy protection and more. Important information about the video transmission is also detailed. Compare this information against the compatibilities of connected hardware to diagnose errors in picture or sound. Further, it shows real time health of various power supplies in the unit which power specific modules. This can be a useful tool to diagnose features that are malfunctioning.

### 9. Thresholds settings

It is possible to define your own alert threshold for the temperature of the unit. Click on the Gear icon and adjust these thresholds. Default is 55°C and 60°C. When the temperatures are reached, messages will be shown in the various interfaces.




## Web UI Remote Control

Using the recommended web browser on your laptop, one can access the remote control. The web UI remote control is best used with a computer web browser but can also be accessed from smart phones or tablet, although it is recommended to use our dedicated applications running on both iOS and Android (see "StormRemote App" on page 40).

### 1. Input selection

Any inputs enabled on the Inputs setup page will appear here titled according to your setup. See "Input Settings" on page 13. The currently selected input will be highlighted in blue. Tap any input to select it.

### 2. Preset selection

Select the desired Preset in the list. Presets are listed according to the Theater they belong to. See "Presets" on page 32.

### 3. Global Control adjustment

This section contains easy access to select features.

- **Upmixer:** Select the Preferred Upmix to activate amongst Native, Stereo Downmix, Dolby Surround, DTS Neural:X or Auro-3D. Native plays audio back in the recorded format and/or channel count according to the source material. Stereo Downmix will downmix surround material to 2 channel played through front left and right (and sub if loudspeakers are configured as Small or Large and Sub) loudspeakers only. Dolby Surround, DTS Neural:X and Auro-3D will force any legacy surround audio into one of these 3 formats. Immersive source audio will be rendered natively and this selection will be grayed out.
- **Loudness**: Content is usually created at a reference level, such as 80 to 85 dBSPL. Ear sensitivity varies quite much: the lower the level, the less sensitive to lower frequencies we are. To maintain the same balance as defined by the sound engineer in his studio at any level, a compensation is then required: an Adaptive Loudness. Three modes are offered: Full (as intended by the author), Medium and Low. While changing the volume, compensation will be dynamically applied. See "12. Volume Reference" on page 18 or "Theater Settings" on page 36 to adjust the Reference Level of your system, usually the level you calibrated your system at.
- **Vol Dim:** Immediately attenuates volume by the amount specified in "Parameters" on page 35.
- **LFE Dim:** In some cases, movies encoded with Dolby may have bass that appears to be too loud. Use LFE Dim to attenuate the LFE channel by -10dB.

### 4. Main Volume and Mute

Adjust the volume in the currently selected theater by pressing the +/- buttons. One press is a 1dB increment. Selecting the Speaker icon will toggle Audio Mute On and Off.

### 5. Decoder Control

- **DRC:** Dynamic range control for Dolby and DTS streams. "On" will reduce the range of volume levels on the soundtrack by compressing the loudest sounds. "Auto" will engage DRC when directed to by the soundtrack.
- **Dolby Mode:** With Dolby content, the decoder can follow predefined modes. "Movie" mode will emphasize dialog and surround, "Music" widen the

soundstage and provide some equalization while Night will activate some compression to limit the dynamic range. "Off" is the default neutral mode.

- **IMAX Mode:** In "Auto", whenever a content is flagged IMAX® Enhanced, the decoder will automatically render the stream properly with all required post-processing. Turning it "OFF" will always disregard IMAX® Enhanced specific content.
- **DTS Dialog Norm:** With some DTS soundtrack, a dialog normalization level might have been defined to allow for proper channels level alignments. Select "On" to automatically apply this when detected. When "Off" this feature will be bypassed.
- **Center Spread:** Linked to Dolby Surround preferred upmix selection. When "Off", dialogs are mostly reproduced by the Center channel. When "On", dialogs will also be reproduced by the L/R speakers. Usually, "On" is appropriate for Music content upmix, while "Off" is more adequate for Movies or TV playback.
- **Auro Preset:** With Auro-3D or Auro-Matic upmix engaged, this setting simulates the size and acoustic reflections of the room with Small, Medium, Large and Speech options. "Medium" is the default mode and is adapted to most home cinema room.
- **Auro Strength:** Help adjust the effect of the Auro Preset. Usually you would select between 9 to 12 for Movie and 4 to 7 for Music playback.

## 6. Audio Adjustments

Even though you may have meticulously calibrated the theater in Main Speakers settings, some material may sound best with slight adjustments. Adjustments here are temporary and reset to 0 with each change of Preset.

- **Center Enhance**: Adjust the level of the center channel between -6 and +6dB in 1dB increments.
- **Surround Enhance**: Adjust the level of the surround channels between -6 and +6dB in 1dB increments.
- **LFE Enhance**: Adjust the level of the LFE signal between -6 and +6dB in 1dB increments.
- **Bass**: Tone control to adjust the bass level in the entire theater using both the subwoofer and main channels between -6 and +6dB in 1dB increments.
- **Treble**: Tone control to adjust the treble level in the entire theater between -6 and +6dB in 1dB increments.
- **Brightness**: Tilt the tonal balance of the presentation towards darker timbre (negative figures) or brighter timber (positive figures).
- **Lipsync**: Temporarily adjust lip sync delay to accommodate some sources. Note that this is also reset every time a new input is selected, so if you find yourself regularly setting this to the same figure, adjust the delay either per source ("8. AV Delay" on page 14) or for the entire theater ("Theater Settings" on page 36).

## 7. VuMeter

You can visualize the Input, Output VuMeters or both at the same time when using the full screen mode. Two view modes are available: Normal or Centered around the "Center" channel.

## 8. Audio and Video stream

Indicates real time information about the incoming audio and video streams of the selected source.

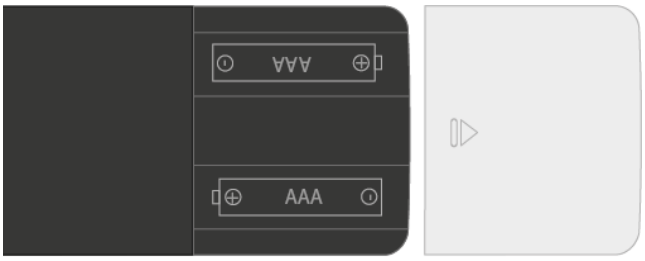
## 9. Main Source

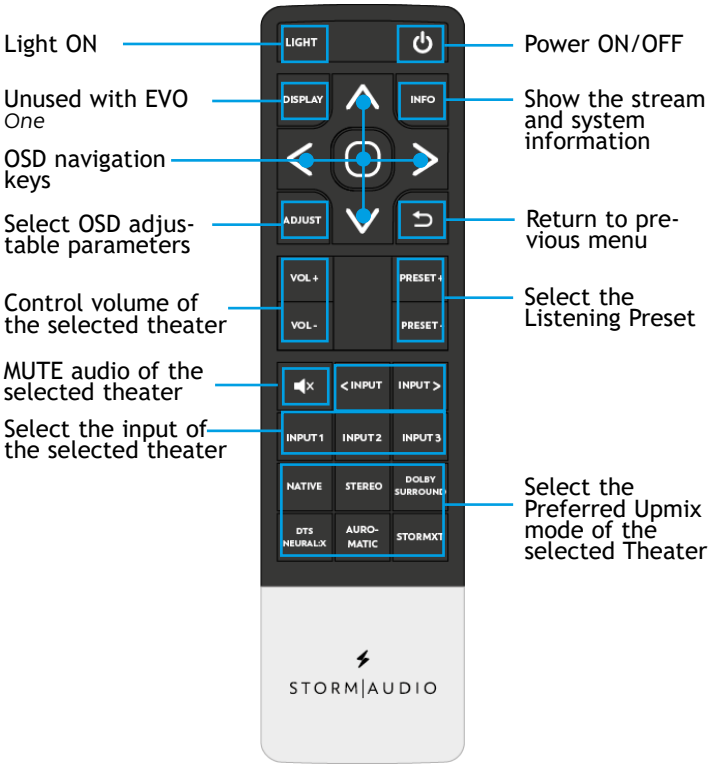
The Main source is the one selected and played in the Theater area.

## Independent Remote Control

The IR control unit operates effectively within a distance of 23 feet (7 meters) and an angle of 30° from the processor. Using the control near fluorescent lights may shorten this range, as will any dust or dirt that accumulates on the front of the remote control or the remote-sensor area of the processor. Also, avoid blocking the line of sight between processor and remote.

Install the two supplied AAA batteries in the remote as shown. Be certain to follow the (+) and (–) polarity indicators that are on the top of the battery compartment.




## Disposal Of Used Batteries


These symbols shown on the product, the packaging or in the manual or separate information sheet mean that the product itself, as well as the batteries included or built into the product, should never be thrown away with general household waste. Take them to applicable collection points, where proper treatment, recycling and recovery takes place, in accordance with national or local legislation, or European Directives 2002/96/EC and 2006/66/EC.

Correct handling of the product and batteries to be disposed helps save resources and prevents possible negative effects on the environment or human health.

The batteries included with your equipment may be alkaline or carbon zinc/manganese. All types should be disposed of according to the above instructions.

To remove the batteries from your remote control, reverse the procedure described in previous page for inserting batteries.

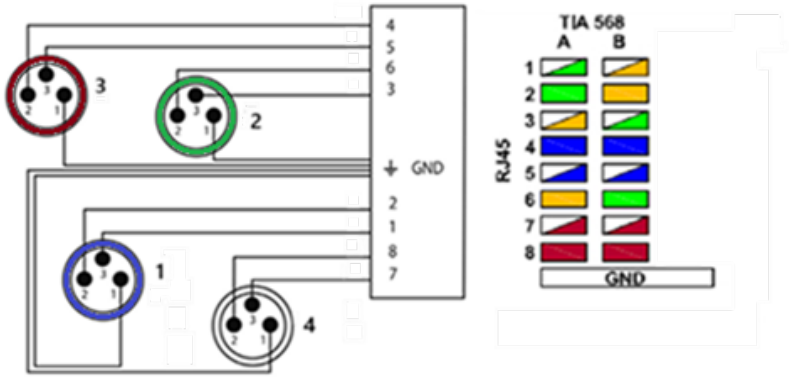
## StormRemote App

Apple iPad and Android users can download the StormRemote app from the Stores and control their ISP as in the web UI remote control.

## Wiring Recommendations

### 1. AES/EBU RJ45 connector pin out

The Multichannel Digital Inputs and Outputs options use RJ45 cables to carry the AES/EBU signals according to AES/EBU Type 1E, not grounded wiring. The pinout of the RJ45 connectors on the ISP is described herewith with the corresponding XLR connector wiring and color code used in StormAudio breakout cable availabe for order.




### 2. USB ports

There is one USB-C ports available used for service & upgrade when no network access is available. It can be used to provide 5V power supply in the limit of 1A maximum total consumption.

## Acknowledgements

## Specifications - EVO ONE

### Audio

| | |
|---|---|
| Audio Formats | up to 16ch (9.1.6), 192 kHz<br>Dolby Atmos, DTS:X Pro,<br>IMAX® Enhanced, Auro3D,<br>MPEG-H, all Legacy codecs<br>StormXT |
| Audio Inputs | 16ch (AES/EBU)<br>16ch AES67 or 16ch Dante native<br>1x Coaxial (SPDIF)<br>1x Optical (Toslink) |
| Streaming | ROON Ready |
| Post-Processed Outputs | up to 16ch, 48 kHz |
| Audio outputs | 16ch digital AES/EBU<br>16ch AES67 or Dante native |
| Bass Management | Multiple subwoofers<br>Per channel crossover<br>Standard |
| Multi-way speaker XO | Up to 4-Way speakers<br>6, 12, 18, 24, 36, 48 dB/Octave, Linkwitz-Riley and Butterworth |
| Equalization per Channel | up to 20 band PEQ<br>REW plugin |
| Calibration | Dirac Live suite |

### HDMI

| | |
|---|---|
| Inputs / Outputs | 4 / 1 |
| Input Specs | 4 ea. HDCP2.3 / HDMI2.1 |
| Output Specs | 1 ea. HDCP2.3 / HDMI2.1<br>ARC/eARC<br>On screen Display |
| Max Resolution | Up to 4K120 4:2:2 10 bit / 8K60 RGB/4:4:4/4:2:2 in DSC 1.2 mode<br>48 Gpbs all ports |
| HDR | HDR10, Dynamic HDR, HDR10+, Dolby Vision & HLG |
| Deep Color Support | 12bpc |
| CEC | One Touch Play (ISR -> TV), System Standby, System Audio Control and Audio Return Channel Control. |

### Control

| | |
|---|---|
| Control Modules | Crestron and Crestron Home<br>Control4<br>RTI<br>Savant<br>NICE<br>URC |
| IR | Front panel sensor<br>Remote control handset |
| Applications | WebUI: Setup & remote control<br>iOS App: remote control<br>Android App : remote control |
| Network | 100 Mbps Ethernet |

### Power Supply

| | |
|---|---|
| Type | Universal Adaptor |
| Range | 100 to 240V, AC signal |
| Max consumption | 30W |

### Weight and Dimensions

(net product)

| | |
|---|---|
| L x W x H (cm / inches)<br>rack ears mounted | 48.20 x 18.00 x 4.37<br>18.9 x 7.09 x 1.57 |
| Weight | 2.40 KG \| 4.4 LBS |

### Options

| | |
|---|---|
| UMIK-1 Microphone | USB microphone.<br>Allows for Monitoring and Calibration |
| 12ch license | Adds 4 channels to the default 8ch version |
| 16ch license | Adds 4 channels to the 12ch version |

STORM|AUDIO

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