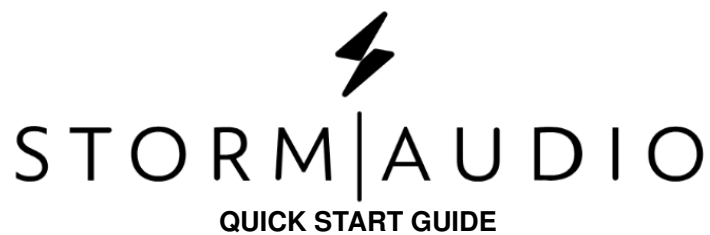




STORMAUDIO ISP CORE 16 Immersive Sound Preamp Processor User Guide

[Home](#) » [STORMAUDIO](#) » STORMAUDIO ISP CORE 16 Immersive Sound Preamp Processor User Guide 



ISP CORE 16
Immersive Sound Preamp/Processor
VERSION 2.0
Last updated: April 2023

Contents

1 IMPORTANT SAFETY INSTRUCTIONS

2 WARRANTY

3 TECHNICAL SUPPORT

4 SPECIFICATIONS

5 BEFORE STARTING

6 PANELS OVERVIEW

7 REGULATIONS

8 WIRING RECOMMENDATIONS

9 ACKNOWLEDGEMENTS

10 Documents / Resources

10.1 References

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 any ventilation openings. Install in accordance with the manufacturer’s instructions.
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. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus.
When a cart is used use caution when moving the cart/ apparatus combination to avoid injury from tipover.



13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Do not open. No user serviceable parts inside. Refer servicing to qualified service personnel.
16. To completely disconnect this equipment from the AC mains, disconnect the power supply cord plug from the AC receptacle.
17. The mains plug of the power supply cord shall remain readily operable.
18. 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.
19. 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.
20. Do not expose batteries to excessive heat such as sunshine, fire or the like.

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 page.

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. 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 to check our Download, Tutorial and Webinar sections. You will find manuals, explanatory videos and more resources that could help you: <https://www.stormaudio.com/technical-support>

You can also check our interactive Knowledge Base Center: <https://www.stormaudio.com/knowledge-base>

Ask your 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 cannot solve your issue or if you don't find the info you need in our various support contents, please

open a ticket on our Help desk: <https://www.stormaudio.com/help-desk>

Provide as much information as possible about your product, your setup, the devices used as well as steps to reproduce the problem. Ideally, if possible, download the Configuration and Logs files from the System page and add them to the ticket.

SPECIFICATIONS

Audio

Audio	
Audio Formats	16ch (9.1.6/11.1.4), 192 kHz Dolby Atmos, DTS:X Pro, IMAX Enhanced, Auro-3D All Legacy codecs StormXT*
Audio Inputs	4x RCA analog (7.1 or 2.0) 3x Coaxial SPDIF 3x Optical Toslink
Streaming	ROON Ready
Post-Processed Outputs	16ch, 48 kHz
Audio outputs	16ch analog (XLR) 1x Optical Toslink for Zone2 (Downmix)
Bass Management	Multiple subwoofers Per channel crossover Standard and Expert*
Multi-way speaker XO	6, 12, 18, 24, 36, 48 dB/Oc- tave, Linkwitz-Riley and Butterworth
Equalization per Channel	up to 20 band PEQ REW plugin
Calibration	Dirac Live suite
HDMI	
Inputs / Outputs	7 / 2, matrix*
Input Specs	7 ea. HDCP2.2 / HDMI2.0
Output Specs	2 ea. HDCP2.2 / HDMI2.0 ARC/eARC on HDMI Out1 On Screen Display
Max Resolution	UHD, 4K 60fps 4:4:4 8bpc 18 Gpbs all ports
HDR	HDR10, HLG & Dolby Vision
Deep Color Support	12bpc

CEC	One Touch Play (ISP -> TV), System Standby, System Audio Control and Audio Return Channel Control.
Control	
Control Modules Available	Crestron & Crestron Home Control4 RTI Savant ELAN
IR	Front panel sensor Rear panel I/O, jack 3.5mm
DC Trigger	x4, jack 3.5mm, 12V DC Software assignable to inputs, presets, on/standby or manual operation
Applications	WebUI: Setup & remote control iOS App: remote control Android App : remote control
Network	100 Mbps Ethernet
Power Supply	
Type	Universal
Range	100 to 240V
Weight and Dimensions	
L x W x H (cm / inches) With rack ears, no foot No rack ears, with feet	40.22 x 48.05 x 13.27 15.75 x 18.89 x 5.12 40.22 x 44.2 x 14.95 15.75 x 17.32 x 5.51
Weight	8.3 KG 17.6 LBS
Options	
UMIK-1 Microphone	USB microphone. Allows for Monitoring, Calibration and RTA function.

Our policy of continual product improvement means that Storm Audio reserves the right to modify the technical specifications of its products without notice. Product may vary from images.

BEFORE STARTING

Welcome

Thank you for choosing a StormAudio Immersive Sound Preamp/Processor. This guide provides stepby-step instructions for quickly setting up your ISP to meet a basic Theater configuration.

We continuously strive to improve our products. Some features might have thus been added or improved recently.

Please check our website: <https://www.stormaudio.com> to get access to the latest firmware and documentation, and keep your ISP up to date by upgrading it to the latest available firmware package.

What's in the box

Immersive Sound Processor	
Quick Start Guide with the Safety Instructions	IR Remote Control handset and 2x AAA batteries
Rack Mount ears *	Power Cord

* tools required to mount/unmount the rack mount ears: Torx screwdriver (T20).

What you need

Display / Projector	XLR cables RCA cables Optical Toslink wire
HDMI Cables	Amplifier units
Speakers with cables	LAN router with Cat5/6 RJ45 cable *

* the ISP needs a DHCP server to be part of the Network and get an IP address allocated. Make sure to check your Internet Provider Box or LAN/Switch box for routerfunction.

Owner Manual access

This document covers a basic setup. For a complete and exhaustive configuration of your product, we recommend you to consult the full Owner Manual :

Scan me to view the Owner Manual



<https://www.stormaudio.com/en/ISP-ISR-owner-manual/>

Installation Flow

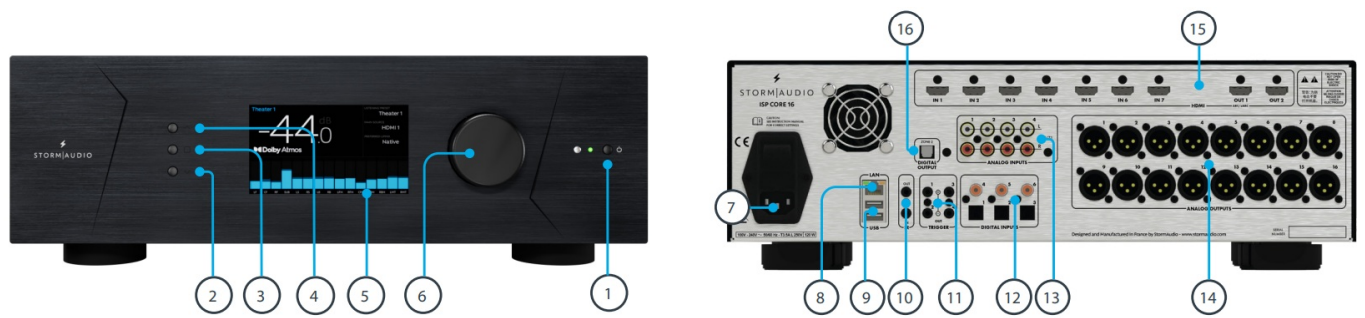
Prior to starting the configuration of your system, make sure to upgrade your ISP to the latest firmware version . Only a few steps are required to configure your ISP for a basic setup, as summarized below:

1. Panels overview
2. Inputs and Outputs connection
3. Web User Interface access

- Inputs definition
- Theater definition
- Output mapping
- Presets definition
- Remote control

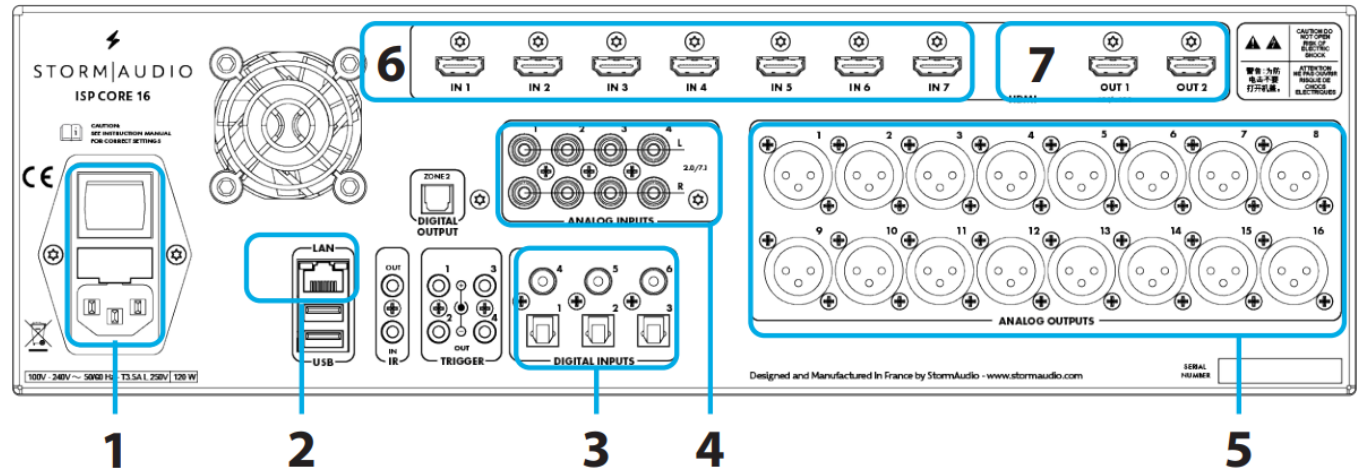
Explore the following pages of this Quick Guide to go through each step of the configuration of your ISP.

PANELS OVERVIEW



1. Standby button	9. USB ports
2. Down button	10. IR Input/Output
3. Home / Access button	11. Trigger outputs
4. Up button	12. Digital Inputs, Optical and Coaxial
5. Display	13. Unbalanced Analog Inputs
6. Volume/Left-Right Press: Mute/OK	14. Balanced Analog Input
7. AC Inlet	15. HDMI In & Out
8. Ethernet port	16. Zone2 Digital Optical Output

INPUTS AND OUTPUTS CONNECTION



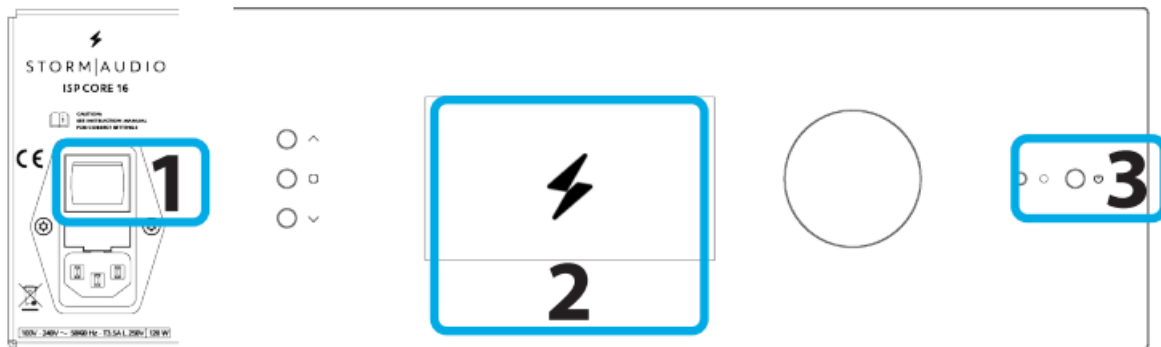
- Connect your AC cable to a grounded outlet.
- Connect your RJ45 LAN cable to your router.
- Connect your digital sources either via the Toslink

4. Optical or Coaxial interfaces.
5. Connect your analog stereo sources to the
6. Unbalanced RCA inputs (for 7.1/5.1 Ch source, refer to Owner Manual)
7. Connect the Balanced Outputs 1 to 16 to your amplifiers.
8. Connect your HDMI sources on any input from 1 to 7, all supporting HDMI2.0/HDCP2.2, 18 Gbps.
9. Connect your screen or projector on Outputs 1 and 2, both supporting HDMI2.0/HDCP2.2. Note that ARC/eARC is only supported in Output 1.

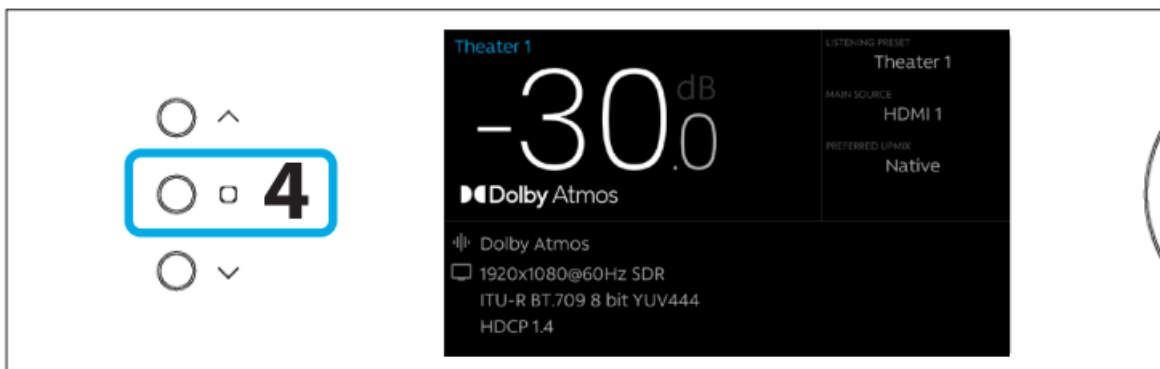
Note: check Owner Manual for other connections.

WEB USER INTERFACE ACCESS

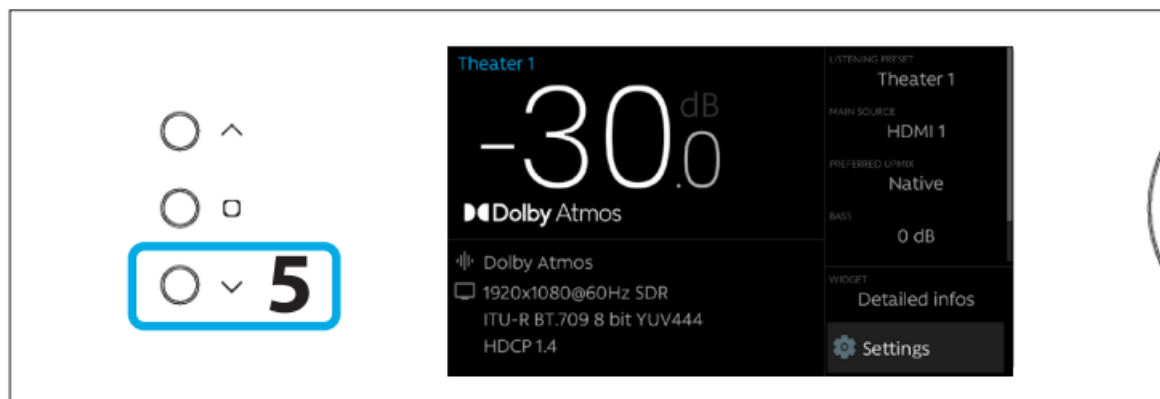
First time access



1. Turn the Main Switch to ON (I) in the back panel.
2. Display will show the StormAudio icon for few seconds and will enter Sleep Mode.
3. When in Sleep Mode, press the Power Button. Unit will start. Wait until the LED is stable green.
4. When the Home display screen is shown, press the Select button (rounded square) to access the Adjustment Menu.

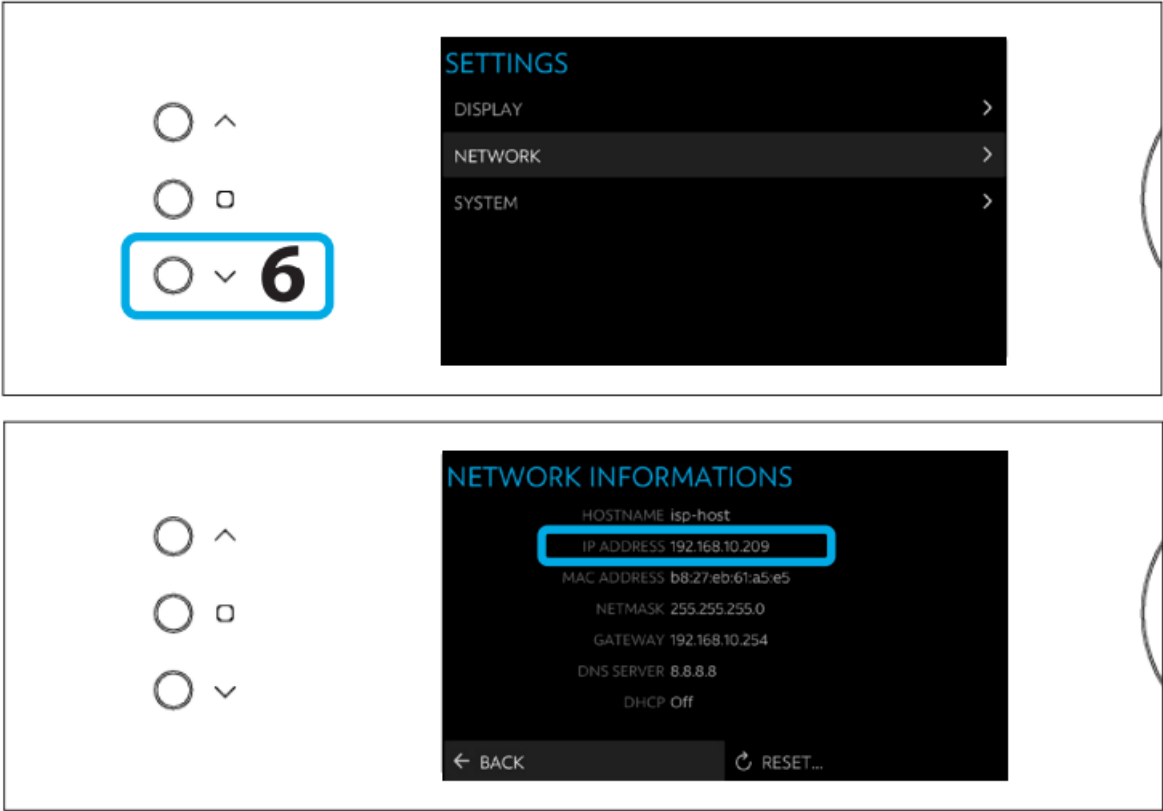


5. Using the Arrow button, access the Settings and press the Volume knob to Validate.

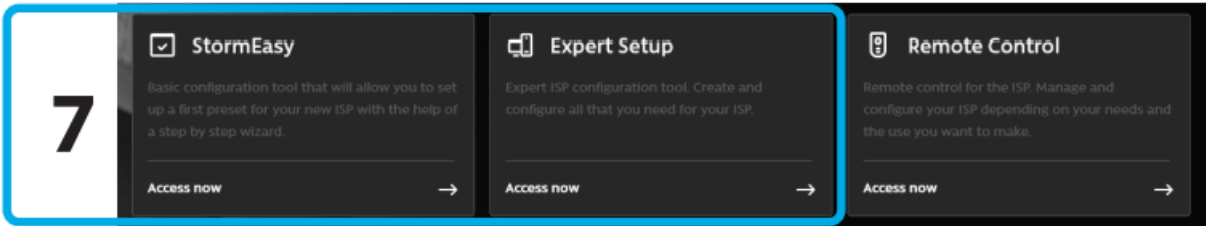


6. Select the Network item and press the Volume knob to validate. This will give access to the Network info where

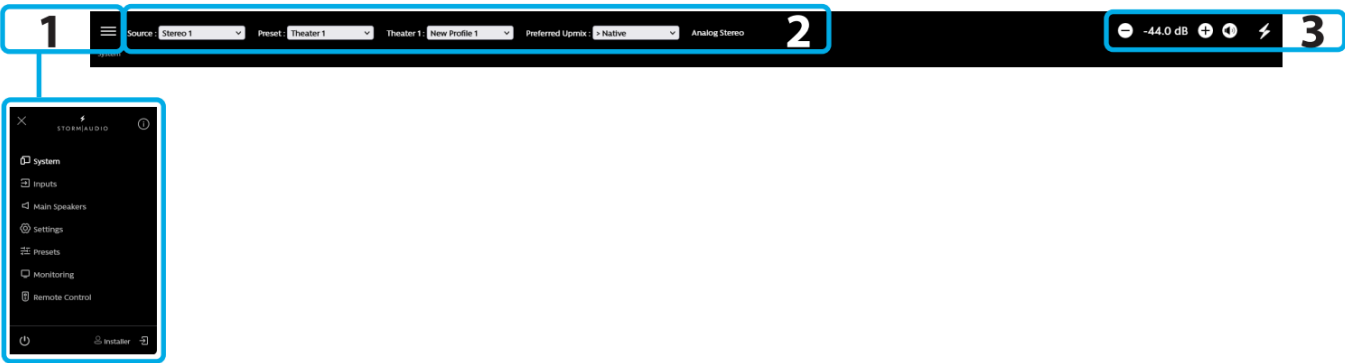
you can take note of the IP address and also reset the network parameters. Select Back to exit.



7. Open your Web Browser in a laptop and enter the IP address in the URL area. Select Expert setup to configure the product using this guide or StormEasy to follow the configuration wizard. In both cases use installer as password.



Web User Interface description

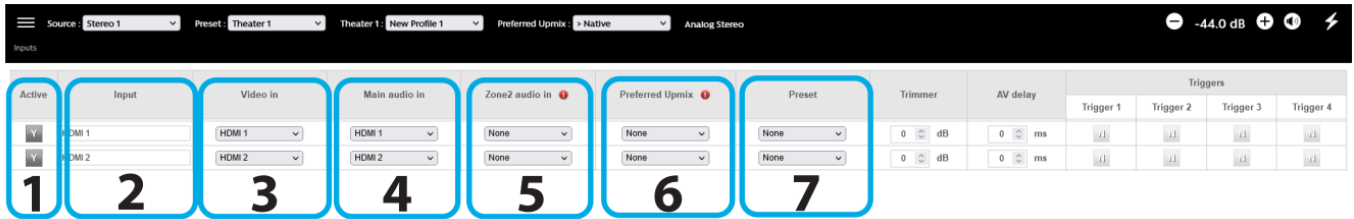


Following Expert Setup selection and password validation, you will reach the first page of the Web User Interface (WebUI) called System. On top of each page of the WebUI, there is a fixed bar for easy access to:

1. The Configuration tabs by selecting the Burger Menu where you can access: System, Inputs, Speakers, Settings, Presets, Monitoring and Remote control.

2. Key remote control commands of the unit, such as Source or Preset selection.
3. Volume control and MUTE.

INPUTS CONFIGURATION



1. Unused inputs should be turned to N (No) to not appear in the Remote Control.
2. Default names are given to the inputs. You can use it unchanged or edit it to your preference.
3. Select which HDMI video input must be activated when the input is selected.
4. Select where the audio should come from for the defined input.
5. Select where the audio should come from for the defined input when selected as Zone2 input in the Remote Control.
6. Choose to force a Preferred Upmix mode when selecting the Input.
7. Choose to force a Preset when selecting the Input.

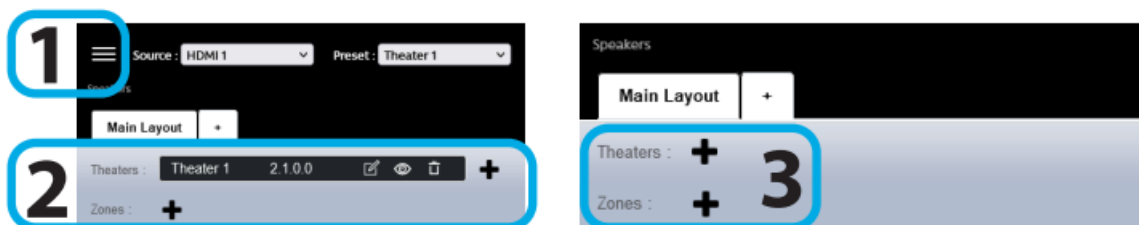
Note: check Owner Manual for more information about the other settings.

THEATER DEFINITION (1/2)

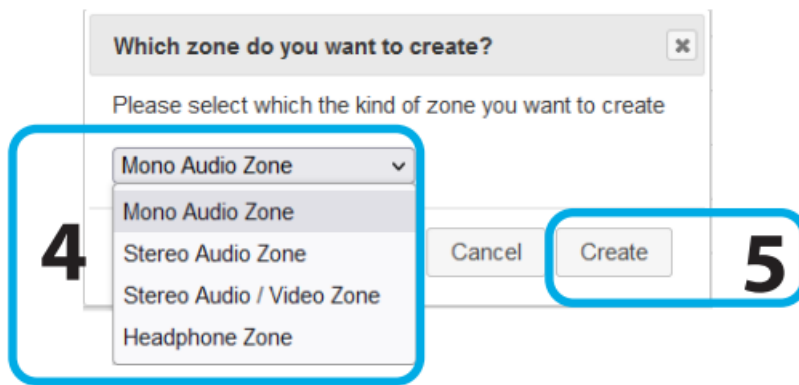
In this part, we will cover the configuration of the speakers in the installation. As systems might easily get complicated, the Quick Guide will only focus on a basic use case where full bandwidth passive speakers are used. We will not cover specific multi-ways speakers here, but we will consider multiple rows of surround speakers as well as multiple subwoofers.

If you need a different configuration to the one explained here, we invite you to refer to the Owner Manual providing details on all possible adjustments of the ISP.

Create your Theater and Audio Zones

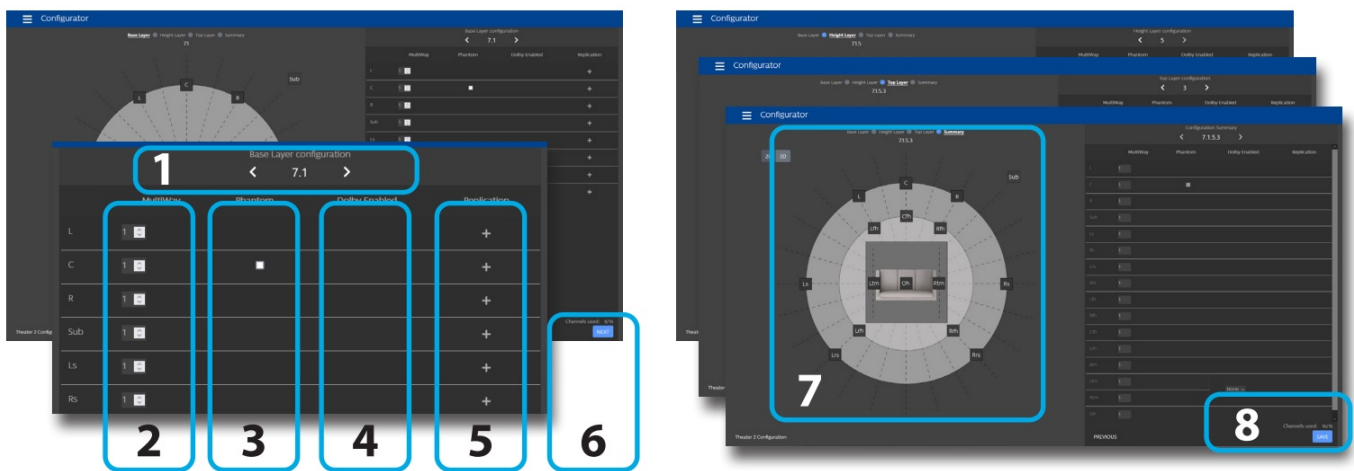


1. Firstly, select the Main Speakers page via the Burger Menu.
2. By default a 2.1 channels theater is defined. If it doesn't meet your need, use the trash can to delete the existing theater.
3. Select the + next to Theaters to create a new Theater and launch the Speakers configurator and go to Configure your theater part below. Or, select the + next to Zones to create an Audio Zone and proceed to step 4.



4. In the pop-up window, select the Audio Zone type you wish to create.
5. Then validate selecting Create. This will generate and edit the Audio Zone for adjustments. We will not cover the Audio Zone Edit mode in this guide, please refer to the Owner Manual.

Configure your Theater

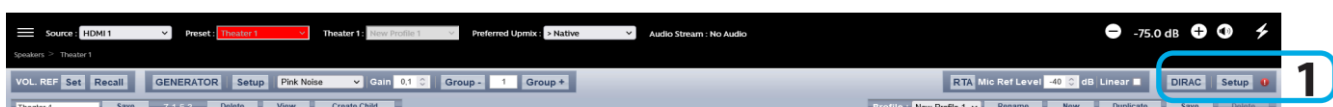


When in the Theater Configurator, you will be able to define each layer of the speaker installation: base, height and top layers.

1. Use the left and right arrows to choose your desired layout for the current layer.
2. For each speaker, you can define whether full bandwidth or multiway, with up to 4 ways definable.
3. The Center channel can be turned to Phantom mode, the signal being played in Left and Right channels.
4. Top speakers can be defined as Dolby Atmos Enabled if up-firing speakers are used. In such case, select the base speaker location. Keep «None» for normal down-firing speakers.
5. For each speaker, you can define whether replication is required. It is often used for multiple subwoofers use or multiple rows of surround speakers.
6. Press Next to reach the next layer and follow again steps 1 to 6 until all three layers are defined.
7. At the end, a summary of the Speakers Configuration is shown.
8. Click Save to exit and to go to Speakers editing page.

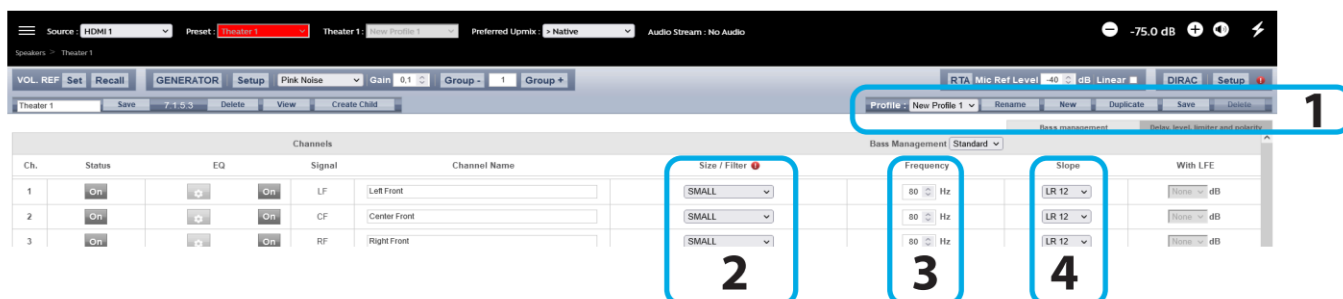
THEATER DEFINITION (2/2)

Dirac Live Calibration



- Once configured, the Theater is presented in Edit mode. Although an important feature of the ISP, we will not cover the Dirac Live Calibration process in this Quick Guide as it is not required to get a basic setup working. Please refer to the Owner Manual, should you need to run through the Automated Calibration process of your ISP using Dirac Live. Otherwise, please follow below steps to configure the ISP manually.

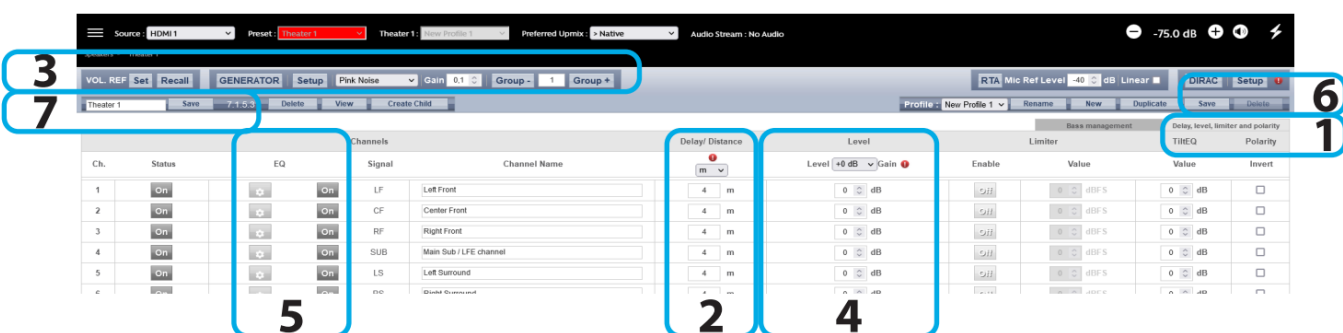
Adjust the Bass Management



In this Quick Guide we will only consider the Standard Bass Management setup:

- For each Theater, it is possible to define multiple audio profiles (all Theater settings). By default, a «New Profile 1» is created.
- Define the Size of each of your Speaker between Small, Large and «Large and Sub». Small will filter the low frequencies and direct them to the Subwoofer. Large will maintain full bandwidth, while «Large and Sub» will also direct the Bass to the subwoofer channel.
- When in Small, adjust the filter crossover frequency between speaker and subwoofer.
- When in Small, adjust the slope between 12dB, 24dB, 36dB and 48 dB/octave (Linkwitz-Riley, Bessel and Butterworth types).

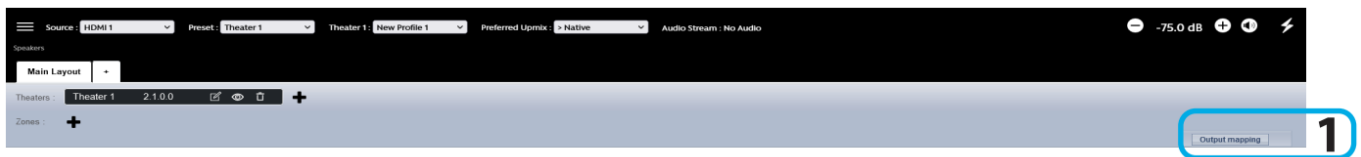
Adjust Levels and Delay



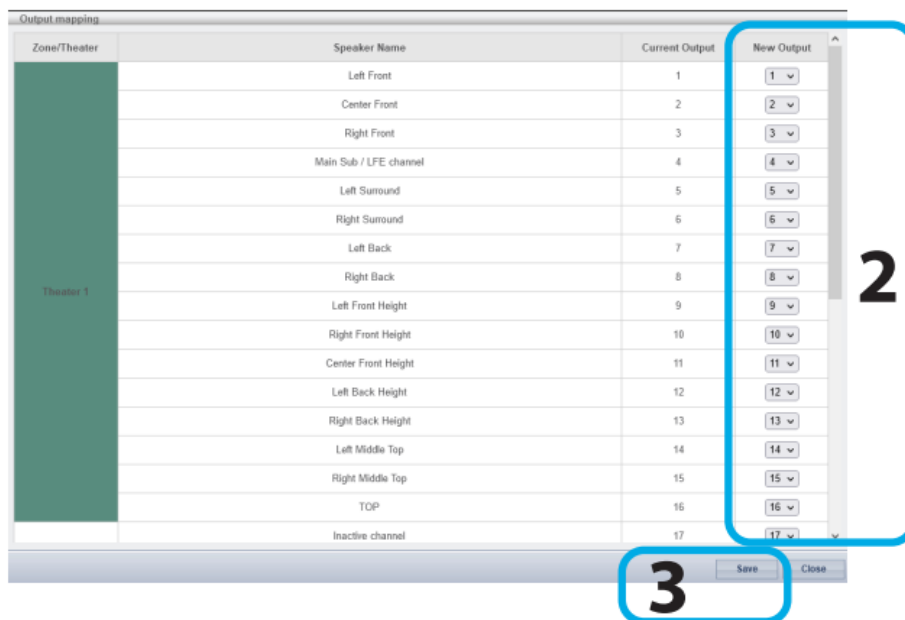
- Select the Delay and Level tab.
- Set the Distance/Delay of each of the installed speakers (meter is the default unit, you can select feet or ms). Before proceeding to level adjustment, ensure the Output Mapping matches your connections (see section 6).
- Select the Narrow Band pink noise signal and activate the Noise Generator, having first made sure the Master Volume is not at a too high level, such as < -30dB. Using the Group +/- button, navigate through each Speaker. Use the normal pink noise for the subwoofer adjustment.
- Adjust the Level for each Speaker using a SPL Meter. We recommend to adjust the Levels with 75 to 85dB(C) average sound pressure as reference.

5. There are up to 20 Parametric EQs available for each Speaker. Consult the Owner Manual for more details.
6. Once adjusted, you can Save your Audio Profile
7. Save the Theater to leave the Edit mode.

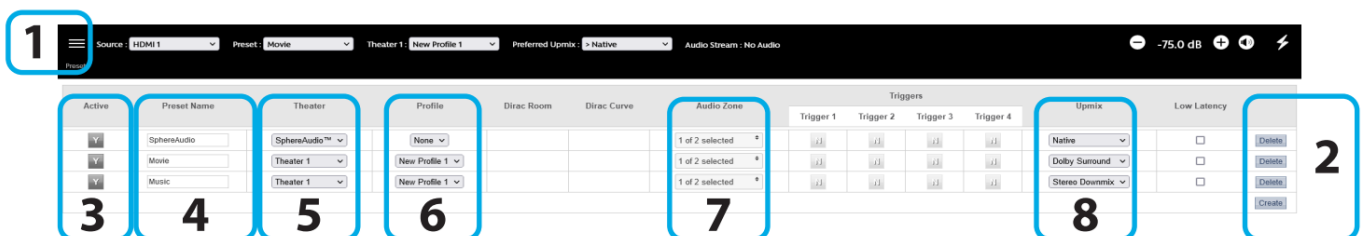
OUTPUT MAPPING



1. If the physical connections are different from the default proposed mapping defined in the configuration (section 5), you can access the Output Mapping feature in the Main Speakers tab and select the Output Mapping button.
2. Change the channel assignment by inputting the correct channel in New Output.
3. When completed save the changes to exit and go back to Speakers page.



PRESETS DEFINITION



Definition of Presets is required for playback by linking a Theater and an Audio Profile and making it accessible in the Remote Controls.

1. Select the Presets tab in the Burger Menu.
2. Some Presets have been created by default while configuring your Theater. You can create more Presets using the Create button or delete some.

3. A Preset is visible and accessible in the Remote Controls only if Active (Y) in the Presets page.
4. Change the Preset Name here.
5. Select which Theater should be activated when the Preset is selected.
6. Choose which Audio Profile for the selected Theater needs to be playing. This will call up all the related audio adjustments.
7. For each Preset, select whether the Audio Zones should be activated (recommended all active by default).
8. For each Preset, you can define which Preferred Upmix mode you wish to activate.

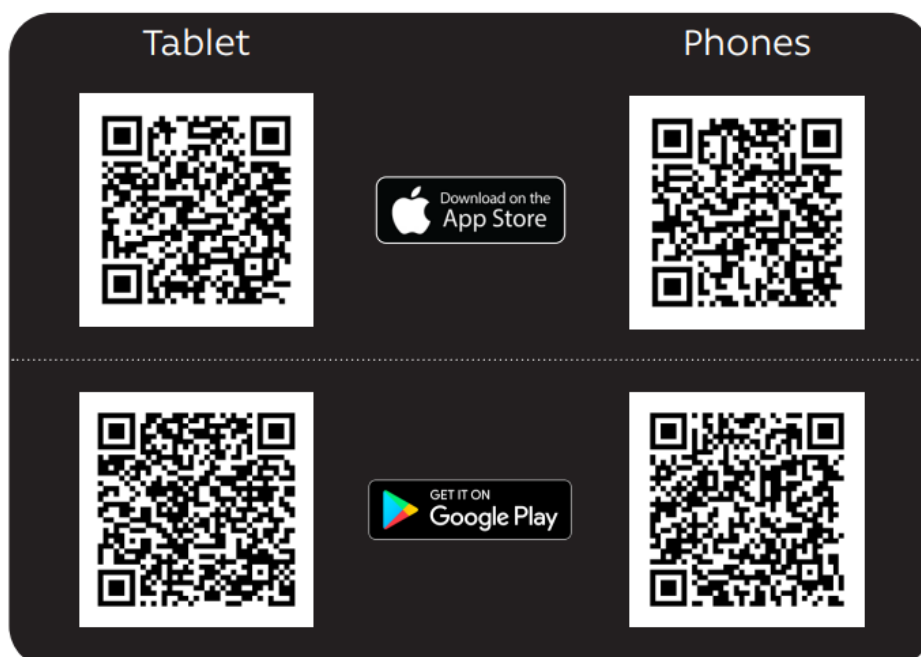
REMOTE CONTROL

StormRemote control applications

Access the Web User Interface Remote Control (check section 3, Home Page and select Remote Control) to control the ISP from your Web Browser.



Use the StormRemote Control Application available on the app stores:

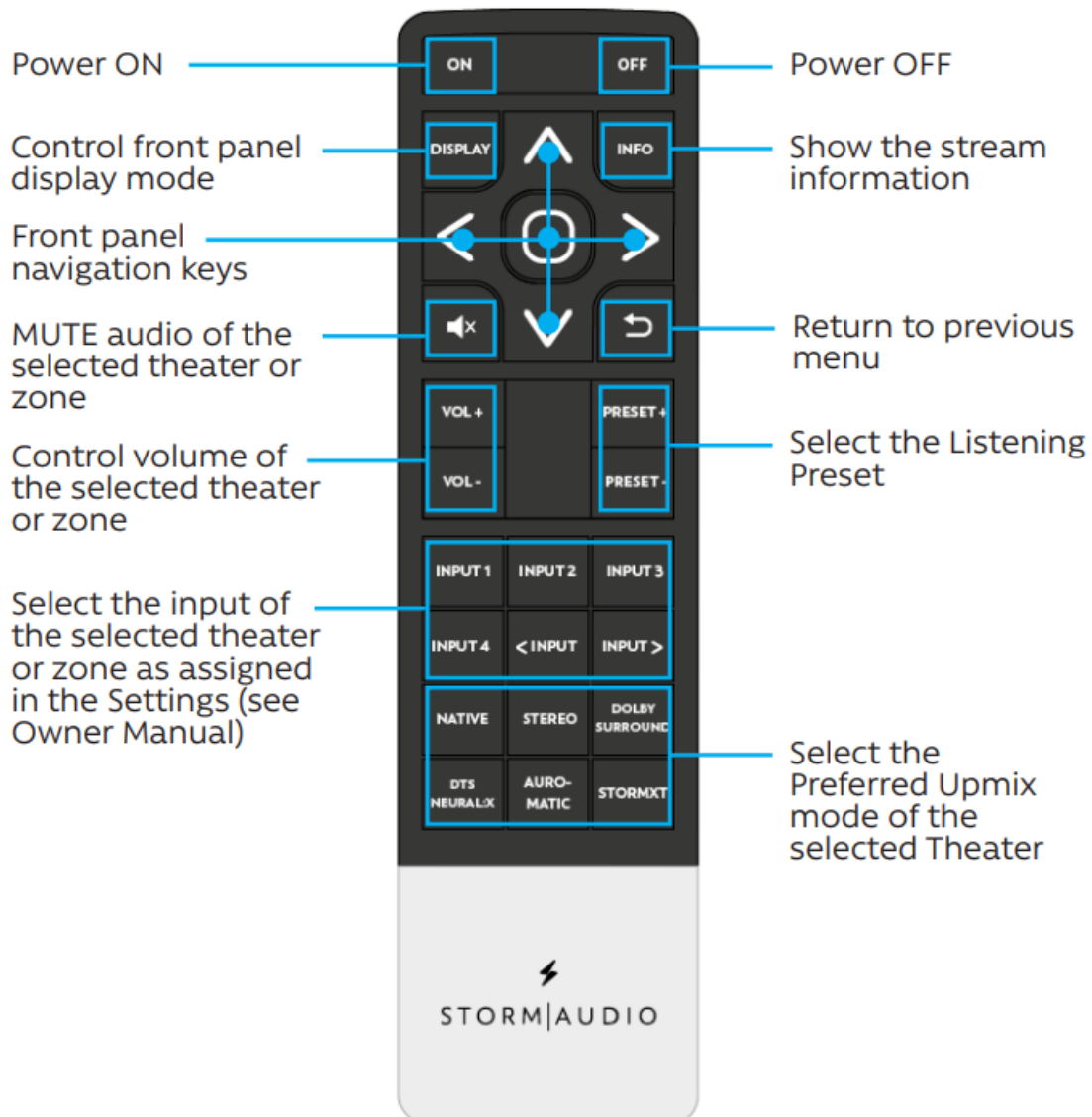
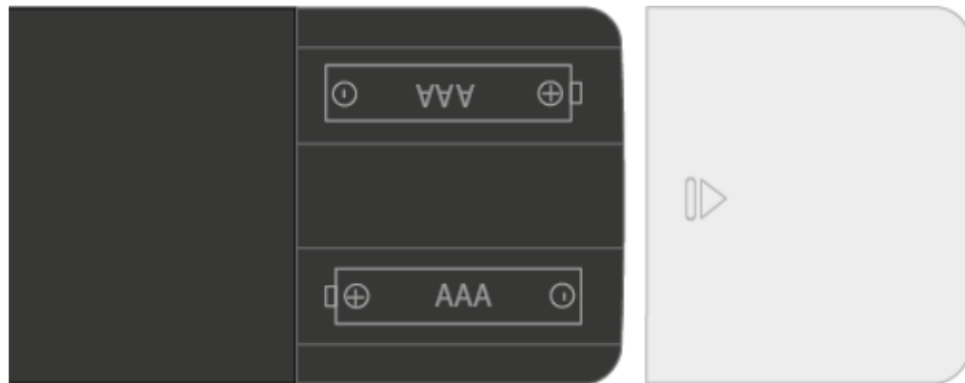


<https://itunes.apple.com/us/app/stormremote/id1216593433?mt=8>
<https://apps.apple.com/app/id1560615197?platform=iphone>
<https://play.google.com/store/apps/details?id=com.stormaudio.StormRemote2021>
<https://play.google.com/store/apps/details?id=com.stormaudio.StormRemote&hl=fr&gl=US>

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.



Instructions for 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 above for inserting batteries.

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.

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.

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

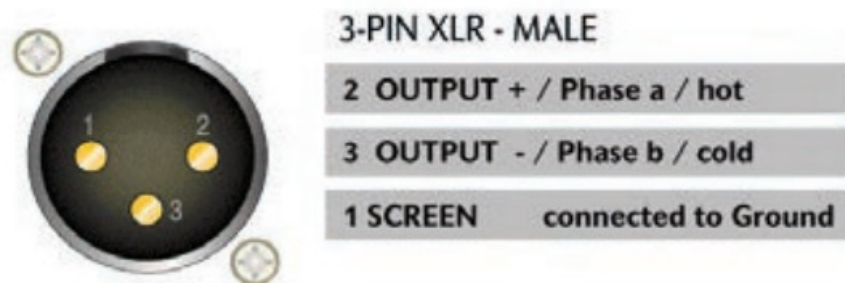
This product is in compliance with Directive 2011/65/EU of the European Parliament on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

WIRING RECOMMENDATIONS

XLR pin out

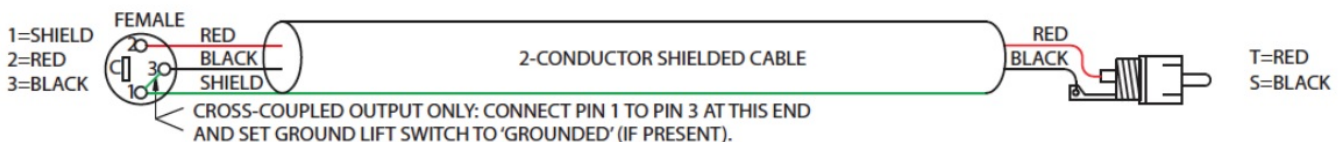
To connect the ISP to an amplifier, you must use male to female XLR cables. The connector in the ISP is a Male XLR.

We recommend up to 3m cables.



XLR to RCA unbalancing cable

In some cases, it might be required to connect to amplifiers with unbalanced inputs. In such case, the wiring should be done as shown.



USB ports

There are two USB ports available used for StormMonitoring microphone connection and USB upgrade when no network access is available. The 2x ports can be used to provide 5V power supply in the limit of 500mA maximum total consumption for the two ports.

ACKNOWLEDGEMENTS

DTS® is a registered trademark of DTS, Inc.

Dolby® is a registered trademark of Dolby Laboratories.

Auro-3D® is a registered trademark of Auro Technologies.

All other trademarks are the properties of their respective owners.

Manufactured under license from Dolby Laboratories. Dolby, Dolby Atmos, Dolby Audio and the double-D symbol are trademarks of Dolby Laboratories.

Manufactured under license from DTS Licensing Limited. DTS, the Symbol, DTS in combination with the Symbol, DTS:X, and the DTS:X logo are registered trademarks or trademarks of DTS, Inc. in the United States and/or other countries. © DTS, Inc. All Rights Reserved.

Manufactured under license from Auro Technologies. StormAudio is certified by Auro Technologies to implement its technology and products. Auro-3D® and the related symbols are registered trademarks of Auro Technologies.

All materials contained in this work are protected by copyright law and may not be reproduced, distributed, transmitted, displayed, published or broadcast without the prior written permission of Auro Technologies NV or in

case of third party materials, the owner of that content. You may not alter or remove any trademark, copyright or other notice from copies of the content.

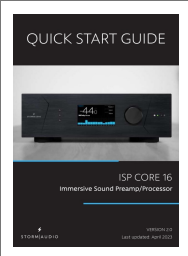
The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI logo are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

DESIGN NOTES



StormAudio | Immersive Audio Technologies
8 rue de la Rabotière | 44800 Saint-Herblain | France

Documents / Resources

	<p>STORMAUDIO ISP CORE 16 Immersive Sound Preamp Processor [pdf] User Guide ISP CORE 16 Immersive Sound Preamp Processor, ISP CORE, 16 Immersive Sound Preamp Processor, Sound Preamp Processor, Preamp Processor, Processor</p>
--	--

References

- [⚡ StormAudio - StormAudio - Systèmes audio pour le Home cinéma](#)
- [⚡ StormAudio - StormAudio - Systèmes audio pour le Home cinéma](#)
- [⚡ stormaudio.com/en/ISP-ISR-owner-manual/](#)
- [⚡ Jira Service Management](#)
- [⚡ Knowledge Center](#)
- [⚡ Technical support - StormAudio](#)
- [⚡ Technical support - StormAudio](#)