LYNGDORF

LYNGDORF AUDIO TDAI-2210

OWNER'S MANUAL

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Welcome

Congratulations on your purchase of the Lyngdorf TDAI-2210 amplifier. The TDAI-2210 will deliver an audio experience that will far exceed your expectations. We thank you for placing your confidence in Lyngdorf Audio.

Please read all material carefully prior to installation. If you need additional assistance, contact your local Lyngdorf Audio representative first, or email contact@lyngdorf.com

FAQs about the TDAI-2210, how-to videos, and in-depth information about the technologies used in Lyngdorf Audio products can be found on our website

www.steinwaylyngdorf.com

Compliance

WEEE

The European Parliament and the Council of the European Union have issued the Waste Electrical and Electronic Equipment Directive. The purpose of the Directive is to prevent waste of electrical and electronic equipment and to promote reuse, recycling, and other forms of waste recovery. Lyngdorf products and the accessories packed with them are subject to the WEEE Directive. Please dispose of any waste materials in accordance with your local recycling regulations. Products and equipment which must be collected for reuse, recycling, and other forms of recovery are marked with the icon of the crossed-out waste receptacle.

FCC

Lyngdorf products and accessories comply with parts 15 and 68 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 any interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Equipment marketed to a consumer must can comply with the necessary regulations in the configuration in which the equipment is marketed.

Important safety instructions

Warnings

Caution: Risk of electrical shock. Do not open.
Caution: To reduce the risk of electrical shock, do not remove cover.
No user-serviceable parts inside. Refer servicing to qualified personnel.

Explanation of graphical symbols

The exclamation mark 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 lightning with arrowhead 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 electrical shock to a person.

Important safety instructions
Please refer to the “Important safety instructions” sheets in the shipping box.

Pre-installation

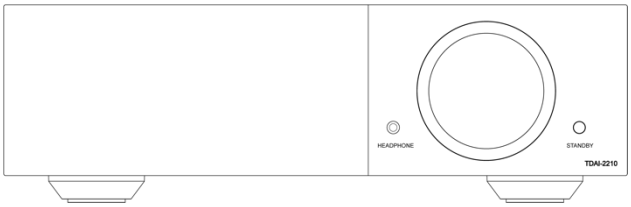
Please read all material carefully prior to installation. If you need additional assistance, contact your Lyngdorf Audio representative, or visit www.steinwaylyngdorf.com.

Unpacking the product
Carefully remove the unit and accessories from the carton and check for shipping damage. Contact the shipper and your Lyngdorf Audio representative immediately, if the unit bears any sign of damage.

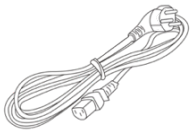
Keep the shipping carton and all packing material for future use. If this unit is shipped for service without the original packing, damage could occur and void the warranty.

:t the TDAI-2210 on its front panel.
ne wheel and its electronics inside may be permanently damaged

Inventory
Check the list below to ensure that all necessary product components have been delivered. Report all discrepancies to your Lyngdorf Audio representative immediately.



Lyngdorf TDAI-2210



Mains cord

Remote control

Owner's manual

RoomPerfect Microphone

Microphone stand

Microphone cable

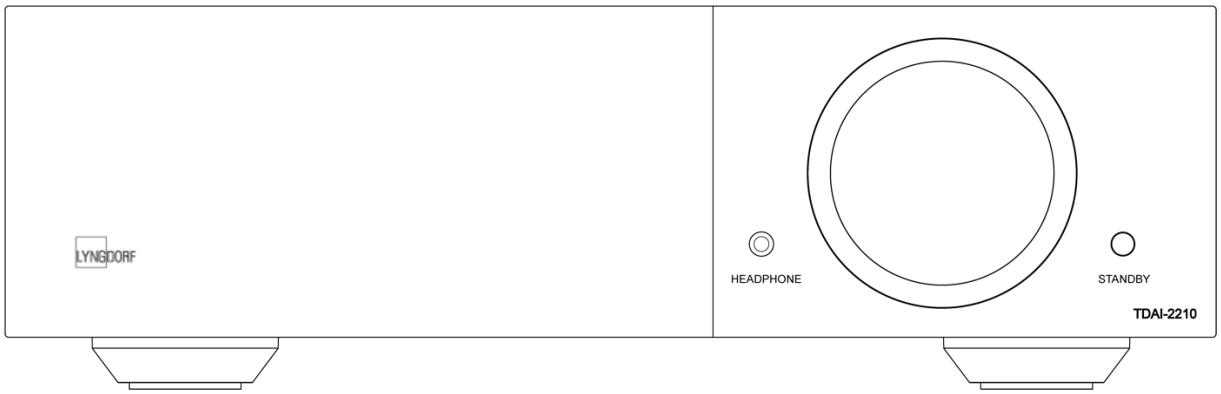
Operating voltage
Lyngdorf Audio products must be connected to the mains power system only.

The TDAI-2210 will automatically detect voltage between 100-240V and 50/60Hz.

Ventilation requirements
The TDAI-2210 does not have a built-in fan, nor does it require special measures to ensure heat dissipation. It should be placed according to these guidelines:

- Allow at least 1 inches / 2,5 cm of free space on all sides.
- Place it in an environment free of excessive heat and sunlight.
- Place it on a firm, level surface.
- Do not place it on a soft surface (carpet, fabrics).

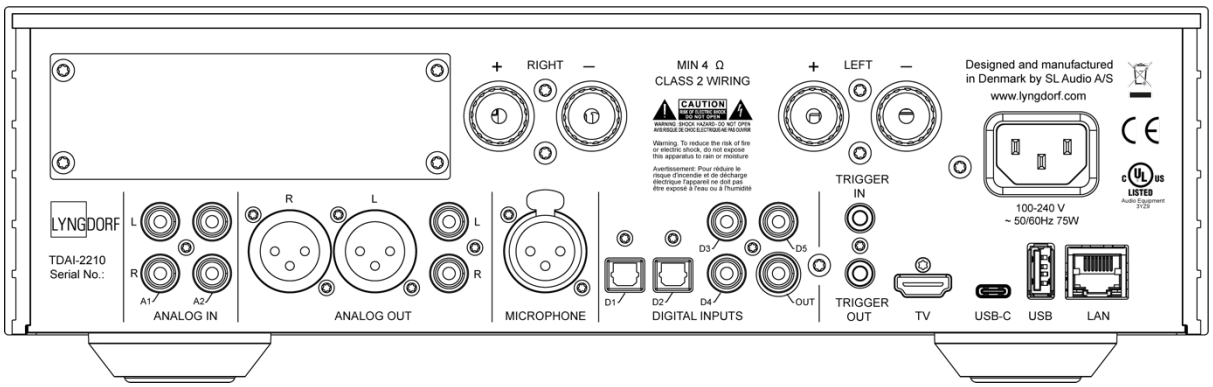
Introduction: Front panel



Left to Right:

- Touchscreen display with on/off logo indicator
- Headphone output
- Dial for volume control
- Standby switch

Introduction: Rear panel



Top Row, Left to Right:

- Slot for one optional module
- Right speaker output
- Left speaker output
- 1 x Main voltage connector (100-240 V, 50/60 Hz)

Lower Row, Left to Right:

- Product name and sticker with serial number
- 2 x single ended RCA analog audio inputs (A1, A2)
- 1 x balanced XLR analog audio output
- 1 x single ended RCA analog audio output
- 1 x XLR microhone input for RoomPerfect
- 2 x optical TOSLINK S/PDIF digital audio inputs (D1, D2)
- 3 x coaxial RCA S/PDIF digital audio inputs (D3, D4, D5)
- 1 x coaxial RCA S/PDIF digital audio output
- 1 x 3.5mm mini jack trigger input and 1 x trigger output
- 1 x HDMI eARC (TV)
- 1 x USB-C input
- 1 x USB-A port for music file playback, software updating, backup, etc.
- 1 x RJ45 LAN port for connection to local network

Introduction: Remote Control

The TDAI-2210 comes with a dedicated remote control, which can operate in Bluetooth (BT) and infrared (IR).

Using the remote control and the front display, the TDAI-2210 can be operated without network connection.

Keys and function overview

Display	Controls the screensaver
⏻	Turns the TDAI-2210 on and into standby.
Numbers	For Presets and as keybord input
Yellow button	Shows a Sound Level Meter on the front display
Info	Reveals information on the TDAI-2210 front display.
Up/Down	Moves up and down in menus. Browses available settings in a menu.
Select	Selects a menu or store a selected setting.
Left/Right	Moves left and right in menus. Browses available settings in a menu.
Back/Exit	Returns to the previous menu.
Menu	Accesses the user menu.
+/-	Turns volume up and down.
	Mutes and unmutes the sound of the headphones
	Mutes and unmutes the sound of the loudspeakers
SRC +/-	Toggles between enabled inputs (SRC = Sources)
⏯	Plays/pauses the currently playing track in the media player.
⏮ ⏭	Skips in the current playlist in the media player.

How to pair the Remote Control in Bluetooth Mode (BT)

The TDAI-2210 remote control has both an Infrared (IR) and Bluetooth (BT) mode, and it will automatically connect to the TDAI-2210 through Bluetooth.

In Bluetooth mode, the indicator on the remote lights up in green when a button is pushed.
If the remote control is not operating the TDAI-2210, you can reactivate the connection.

1. On the remote, simultaneously push and hold “Select” and “2”.
2. Release the buttons when the green light starts blinking.

How to change the Remote Control to Infrared Mode (IR)

If Bluetooth operation is problematic in your setup, you can change to infrared (IR) connection.

1. On the remote, simultaneously push and hold “Select” and “1”.
2. Release the buttons when the red light starts blinking.

In IR mode, the indicator on the remote lights up in red when a button is pushed.

Introduction: Touchscreen Display

The touchscreen display shows the power status of the TDAI-2210 and allows to set it up and operate it.

With this display you can also operate the TDAI-2210 without any network connection.

Lyngdorf logo as status indicator
The Lyngdorf logo on the left side of the display indicates the status of the TDAI-2210.

Logo not visible:	TDAI-2210 has no connection to mains power (power OFF mode).
Dimmed logo:	TDAI-2210 is in power standby mode.
Bright logo:	TDAI-2210 is in power ON mode.
Flashing logo:	TDAI-2210 is updating, in starting mode, or going in and out of standby mode. User operation is not possible during this mode.

Switching on a TDAI-2210 for the first time
Switch on the TDAI-2210 with the STANDBY button on the right side of the front.
The TDAI-2210 will power-up, the display will light up, and guide you through the first-time setup.
Icons and fields can be selected by touching the screen with your finger tip.

If used with an Apple device and wireless network, follow the configuration. Otherwise, click Cancel.

Switching on an already set-up TDAI-2210
Switch on the TDAI-2210 with the STANDBY button on the right side of the front.
The TDAI-2210 will power-up, the display will light up and show the volume level, selected input, and further setting options. Icons and fields can be selected by touching the screen with your finger tip.

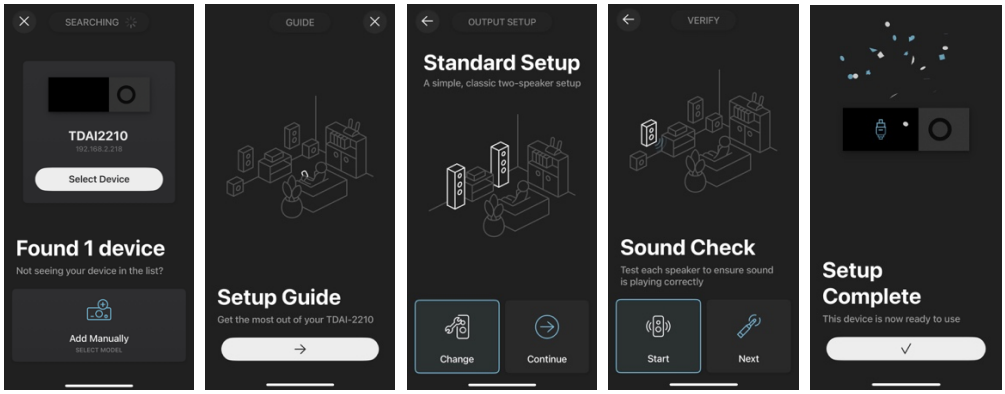
Introduction: Remote Control App “My Lyngdorf”

For devices that support Android™ or iOS, you can download the Lyngdorf remote application “My Lyngdorf”, which will allow you to operate the TDAI-2210.

Installing and using the remote control app with a TDAI-2210 wired to the network (LAN)

1. Visit the app store. Search, download, and install: **My Lyngdorf App**

2. Connect the TDAI-2210 to the network via LAN cable directly to find it in the app straight away.
Open the app, select your TDAI-2210 and proceed.



Installing and using the remote control app with a TDAI-2210 used wirelessly (WLAN)

1. Visit the app store. Search, download, and install: **My Lyngdorf App**

2. Use the TDAI-2210 touchscreen display first and follow the shown Setup Guide including setting up a wireless Network Connection. After that you will be able to use the remote app.

See “Setting up the TDAI-2210 for the first time” on the following pages.

Introduction: Browser App

Instead of downloading and using the remote control app, the TDAI-2210 can also be operated using the browser window of your computer or tablet.

1. Connect the TDAI-2210 to the network via LAN cable, or use the wireless setup in the touchscreen menu.

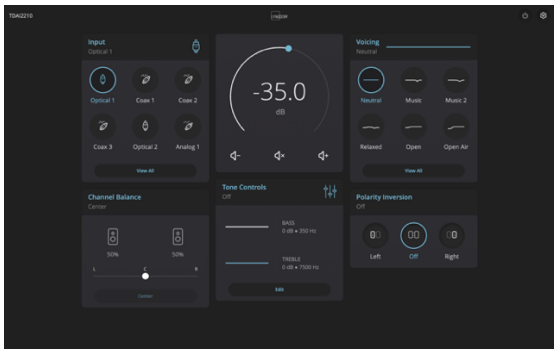
2. Open the brower window on your computer or tablet and type in:

tdai2210.local

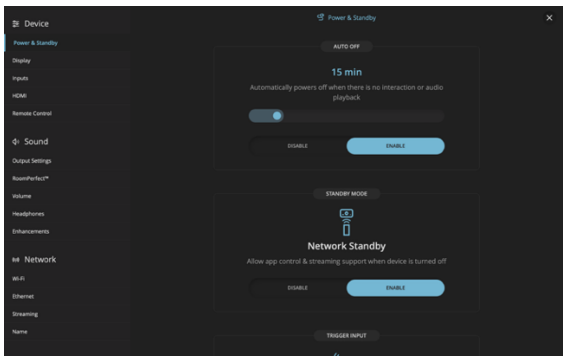
Alternatively, to access the TDAI-2210 browser app use the provided remote control, press the Info button, and note the IP address shown on the TDAI-2210 display. Open a browser window and type in the **IP address.**

1. Open the browser app. Click the white On icon bar, or one of the inputs icons to switch the TDAI-2210 on.

2. The dashboard will now show all main controls to operate the TDAI-2210.



3. To enter the setup menu of the TDAI-2210, click the white setup wheel icon top right.
   To leave the setup menu and return to the dashboard again, click the white x icon top right.



TDAI-2210 first time installation and setup

Always turn off the TDAI-2210 and other components in the system before connecting or disconnecting loudspeakers or any other electronics.

After unpacking the TDAI-2210, follow these steps for the first time setup:

1. While the TDAI-2210 is still disconnected from mains power, connect the left and right speakers to the speaker output connectors on the back (unless the TDAI-2210 is used as a pre-amp or processor only).
2. Connect your external devices, for example audio sources or a TV.
3. If possible, connect the TDAI-2210 to your local network using an ethernet network cable (LAN).
4. Connect the mains cable to the connector on the back panel.
   The TDAI-2210 will now automatically boot the internal processor and then go into stand-by mode.
5. Switch on the TDAI-2210 with the STANDBY button placed on the right, or by using the remote control.
   The front display and the Lyngdorf logo on the left side will light up.

The TDAI-2210 can now be used and is ready for the first time setup in three different ways:

1) Touchscreen display. When the TDAI-2210 is switched on for the first time, the display will automatically guide you through the Setup Guide.

The Setup Guide will offer you to add the TDAI-2210 to your network either over

a) Apple Wireless Accessory Configuration
b) Available wireless Network Connections (WLAN)
c) Ethernet Network Connection when the TDAI-2210 is already wired to your router (LAN).

If you don't want to add the TDAI-2210 to your network, you can click the white X top right on the screen and

d) Continue setup without network connection

After this setup is completed, click Finish. Your TDAI-2210 is ready to be used.

2) Remote app "My Lyngdorf". If your TDAI-2210 is connected to your home network with an ethernet cable (LAN), you will be able to find the TDAI-2210 in the app straight away. Select your TDAI-2210 and proceed the Setup Guide as shown in the app.

3) Browser app. If your TDAI-2210 is connected to your home network with an ethernet cable (LAN), you can use the browser window of your computer, tablet or smartphone y to operate the TDAI-2210. Open the brower on your device, and type in:

tdai2210.local

Alternatively, to access the TDAI-2210 browser app use the provided remote control, press the Info button, and note the shown IP address. Open a browser and type in the **IP address.**

After the first time setup, please continue and complete the TDAI-2210 setup as on the following pages.

TDAI-2210 Touchscreen

Screensaver

The default screensaver shows the current volume level and the currently chosen input.
The type of screensaver can be changed in the Setup menu.
Volume in dB
Input

Main Setup Screen

A tap on the screensaver switches to main screen and shows further information in one of menus on the sidebar.

Home
Inputs
Setup

Home

Volume / Mute
The number shows the volume level in dB from -99 db (quiet) over 0 dB to +20 dB (default maximum level).
The maximum volume level can be limited in the Setup menu, for example to prevent too loud listening levels.

A tap on the volume level mutes the signal. The next tap unmutes the signal.

Note: In recording studios and digital audio, 0 dB marks the full signal. Negative -dB numbers represent a reduction in signal down to the minimum, while positive +dB numbers mean additional gain is applied.

Voicing
The chosen sound Voicing is named and visualized by the line.
A tap on the Voicing line opens the Voicing menu to select, change, or add a Voicing.

Controls
Controls shows the chosen tone controls for Bass, Treble, and Balance.
A tap on Controls opens the tone control menu. Set the desired sound and confirm.

RoomPerfect
RoomPerfect shows the currently chosen listening mode, allows to run the RoomPerfect setup guide, or changes the RoomPerfect listening mode between Bypass, Focus, Global.

Inputs

Input
Tap to show all available inputs by name and icon, and the currently selected input top left.

Radio
Tap to show the radio menu. Scroll or search and tap a radio station to play it.

Podcasts
Tap to show the podcast menu. Scroll or search and tap a podcast to play it.

Storage
Tap to access a local storage, for example a USB memory, and play music files directly.
If no storage device is connected, or the device or files cannot be read, no information is shown.

Setup

Device

Name	The TDAI-2210 name can be customized to find and differentiate it.
Power & Standby	The time to standby, Network standby mode, and Trigger input can be set.
Display	Brightness, screensaver and display type can be set.
Theme	Dynamic color and dark screen or light screen can be set.
Inputs	Inputs can be disabled, enabled, renamed, and customized.
HDMI	HDMI CEC settings can be changed.
Remote Control	The infrared (IR) receiver for remote controls can be enabled or disabled.

Sound

Volume	A maximum volume level and a default volume level can be set.
RoomPerfect	Enters the RoomPerfect menu.
Output Settings	Main speaker outputs, analog pre-outputs and the digital output can be set.
Headphones	Enters headphone menu
Polarity Inversion	Sets polarity in left and right channels
Enhancements	Sets ICC (Intersample Clipping Correction) and Subsonic filter

Network

Wi-Fi	Shows the connection to an existing Wi-Fi network.
Ethernet	Shows the connection to an existing wired network (requires network cable)
Streaming	Sets how external music streaming players can control the TDAI-2210

Software

Updates	Shows software update options and allows updating.
Data	Allows to create or restore a backup from an attached USB memory.
System	Allows to reboot the TDAI-2210, reset the user interface, or full factory reset.

Device: Inputs Setting

You can edit and customize the settings for each input.

Hide Input
You can disable unused inputs to limit the number of shown inputs in the list.
Press Hide to disable this inout.
All disabled inputs show under Disbled inputs, and can be activated by pressing Enable Input.

Change Name
You can change the name to indicate the connected equipment. For example, rename the HDMI input to the name of the device (i.e. “Sony” or “Apple TV”), or rename the analog input (i.e. “Vinyl” or “Tape”).

Icon
You can change the shown icon for a specific input. For example, use a Projector symbol for the HDMI port, or a Cassette symbol for the analog input.

Voicing
You can assign a default Voicing to each input.
No Change will always keep a currently set Voicing when this input is selected.
Choosing a Voicing from the list will activate that Voicing whenever this input is selected.
Note: See later section about designing Voicings.

Lipsync
You can set an audio delay time between 0 – 500 ms (milliseconds) to ensure that the video and audio signals are played back simultaneously. The correct delay has to be found by watching a lipsync-critical scene.

Sensitivity
Enables you to match the volume levels between inputs. If an audio source has a lower output gain (has a lower volume level), increase the sensitivity of this input up to +24dB.

Home Theater
Turns the amplifier into a power amplifier when using this input. This feature bypasses the volume control when the input is chosen, and the TDAI-2210 plays on maximum volume level.
When switching back to other inputs, the TDAI-2210 returns to the last current volume level.

Warning:
Home Theater mode bypasses the volume control and sets it to maximum level. Do NOT choose this setting with an unregulated signal or any audio source without volume control (for example CD Player)! The amplifier will get very hot. Make sure the TDAI-2210 has enough ventilation.

This feature might be selected if you are using the TDAI-2210 in a home theater setup where it is used to power and calibrate the front speakers and/or subwoofer. Connect your home theater processor to the selected input.

Sound: Volume Settings

Maximum volume
The maximum volume setting is a safety precaution used for limiting the maximum volume which can be achieved by spinning the wheel or increasing volume via the remote. This can be set to protect your loudspeakers against overload.

Default volume
The default volume setting controls the default volume when the TDAI-2210 is switched on.

Sound: RoomPerfect™

Introduction to RoomPerfect™
RoomPerfect™ is designed to analyze and correct for the negative effects that the listening room has on the speaker sound.

It is very difficult to design a perfect listening environment with a symmetrical setup and a perfect reverberation time without vibrating surfaces like windows. A traditional setup of speakers requires uneven distances to back and side walls to avoid having the reflections arrive to the listening position at the same time, as this would have a negative effect to the frequency response. Having strong reflections after each other is though causing smearing of the sound and reduces the overall dynamic performance.

Focus position
The focus filter improves the sound quality at a specific listening position. This makes the focus filter the best solution for optimal sound quality at a single listening position. A total of 8 focus positions can be stored after the initial calibration.

Global filter
The global filter improves sound quality across the whole room. When you are moving around a room, the global filter gives the best result.

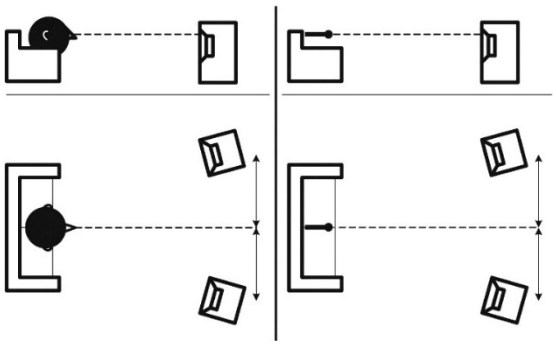
Note: See our website for more detailed information, FAQ and videos about RoomPerfect.

How to set up RoomPerfect™
Note: The RoomPerfect™ microphone is a very sensitive and finely calibrated device which must be treated with utmost care. If the microphone has been dropped on the floor, it may be damaged. If this is the case, obtain a new microphone from your Lyngdorf Audio representative before performing the system calibration.

RoomPerfect™ Preparations
- Place the RoomPerfect™ calibration microphone on the stand. Be sure to fasten the screws properly so the microphone does not move during a measurement.
- Plug the supplied microphone cable into the microphone.
- Connect the microphone cable to the TDAI-2210 using the included mini-jack connector.

Placing the Microphone in the Focus Position

When you are prompted to place the microphone in the focus position, connect the microphone to the microphone input on the front of the TDAI-2210 and place the microphone, using the microphone stand, in your primary listening position. The height and the orientation of the microphone should correspond to your head's height and direction.



Volume Setting

Press Enter and a test signal will start from the left speaker. The system will give an estimated optimal volume for calibrating the system or will accept the current volume. Adjust the volume if required by the system and retry the measurement.

The calibration volume should not be so loud that it is inconvenient to you, or that it causes damage to your loudspeakers. If this is the case, set it to a lower and more appropriate level. A low volume can result in a longer calibration time or a measurement time-out. A low volume and long measurement will not affect the quality of the result.

If the system continues to require higher signal level, the problem could be a defective adaptor, cable or microphone.

Measuring the Focus Position

When the calibration volume has been set, RoomPerfect™ will send a range of pure tones to measure the focus position. If there is noise in the room, the measurement may take longer. This will not affect the quality of the result.

Measuring Random Room Positions

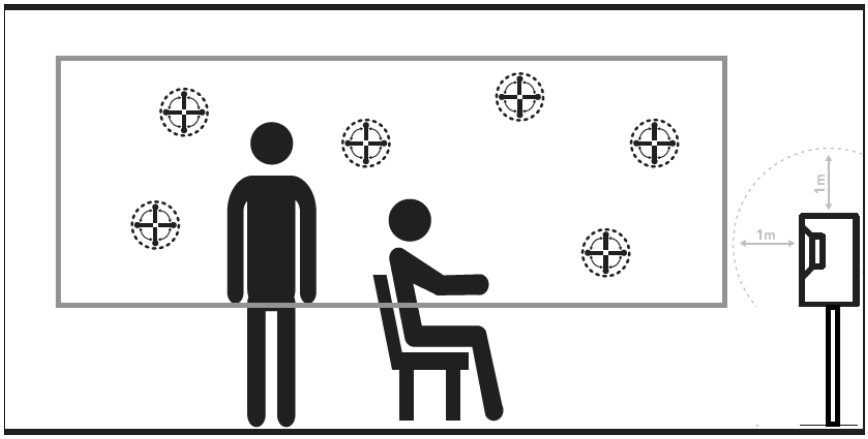
When the focus position has been measured, the next step is to measure the acoustical properties of the room. It is important to perform well spaced measurements to get a comprehensive image of the acoustical properties of the room. See RoomPerfect™ troubleshooting if the measurement stops prematurely.

Keep taking measurements until RoomKnowledge reaches 90%.

Note: RoomKnowledge relates to the level of new information in the last measurement – if there is little new information, the system will translate it to the fact that it knows nearly everything. When the RoomKnowledge does NOT increase after a measurement, it means that the measurement gave a lot of new information to the calibration!

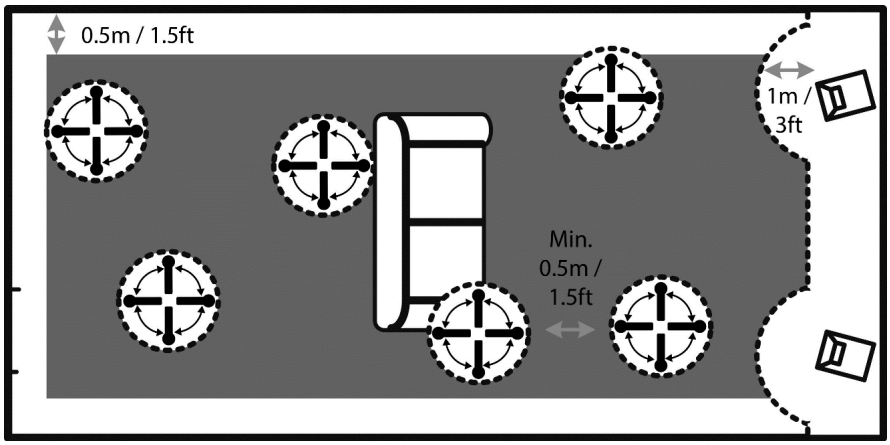
These are the guidelines when measuring the room:

- The microphone should be in random and varying positions, heights, and orientations.
- Point the microphone up/down/sideways – the more random positions the better.
- The measurements should cover the primary listening area.
- Do not take measurements behind plants, furniture, etc.



Side view of room

- The microphone should not be closer than 0.5m/1.5ft from the floor, ceiling, and walls.
- The microphone should be at least 1m/3ft from the front of the loudspeakers.
- There should be at least 50cm/1.5ft between each measurement.
- Do not take symmetrical measurements in the room.



Top view of room

To fully optimize the systems understanding of the room's acoustical properties, we recommend you keep doing measurements until the RoomKnowledge is above 95%. The higher the RoomKnowledge, the more accurate the room correction filters will be.

Note: The RoomKnowledge is calculated from the amount of NEW information is in the measurement compared to the data already stored. It is therefore the target to have as SLOW an increase in RoomKnowledge as possible.

Calculation of Focus and Global Filters
When room measurements are complete, the system will calculate the focus and global filters automatically.

Note: We recommend that you ALWAYS save a Backup of TDAI-2210 settings after having performed a RoomPerfect™ calibration (see Manage Software in the Setup section).

Sound: Output Settings

The Output setup allows to select and customize speakers and woofers, and to set up the analog and digital pre outs.

The frequency graphics and connections diagrams on the touchsceen or in the app will help you to find the right crossovers, EQ, and levels.

Warning:
Both the + and – speaker outputs of the TDAI-2210 carry voltage.
Never run the TDAI-2210 in Bridge Mode with another amplifier!
Never connect the speaker outputs to High Level inputs of a subwoofer amplifier!

Setup

The Setup menu offers three different options:
Standard
Custom
Preamp

Standard
Standard is for a classic 2-channel stereo setup with two loudspeakers, left and right.

Select Generic for any kind or brand of loudspeaker.

Select one of the Lyngdorf speaker models to optimize the sound performance. This will add an equalizing filter designed for the selected speaker.

Custom
Custom is for speaker-subwoofer systems and other individual speaker setups.

Select Generic for any kind or brand of loudspeaker.

Select one of the Lyngdorf speaker models to optimize the sound performance with an equalizing filter designed for this speaker when used together with the subwoofer chosen next.

Select No Subwoofers if you are only using two loudspeakers.

Select Custom Subwoofers if you are using 1 or 2 Subwoofers together witht the loudspeakers. Next, select how the subwoofer is amplified by selecting Generic Amplifier or choosing one of the Lyngdorf amplifers. Next, select how you have connected the amplifier by RCA, XLR, or Digital. Next, set a crossover frequency between speakers and subwoofers.

Note: The default crossover frequency is 80 Hz. It can be changed in the following steps. The ideal frequency is determined by the frequency response of the loudspeakers and the frequency response of the subwoofer.

Preamp
Preamp is for using the TDAI-2210 as a pre-amplifier, music streamer, or RoomPerfect processor.

Note: The power amp section (speaker outputs) will be disabled when using the TDAI-2210 in Preamp mode.

You can set the analog output and the digital output individually to match your system as follows:

Output Off	Output is not used. No signal at the output.
Full Range	Provides the complete frequency signal with volume regulation, tone controls, Voicings, RoomPerfect calibration
Low Pass	Provides only lower frequencies with volume regulation, tone controls, Voicings, RoomPerfect calibration
High Pass	Provides only higher frequencies with volume regulation, tone controls, Voicings, RoomPerfect calibrated
Tape Out / Line Out	Provides the complete frequency signal with no volume regulation (full signal level), no tone controls, no Voicings, no RoomPerfect calibration
Headphone Amplifier	Provides the complete frequency signal with no volume regulation (full signal level), tone controls, Voicings, no RoomPerfect calibration

Distance

When a speaker-subwoofer system is set, Distance allows to align different distances of speakers and woofers in relation to the listening position.

Measure the distance between the main listening position (listner's head) and the front of the left and right speaker, and type in the number in cm or inches.

Measure the distance between the main listening position (listner's head) and the back conrner of the subwoofer, and type in the number in cm or inches.

The difference will then be automatically aligned in the DSP (Digital Signal Processor), so that speakers and woofers integrade as good as possible better.

Verify

Use Verify to check whether all speakers and woofers are set up and connected correctly.
This function will first play a signal on the left speaker, then on the right speaker, then on woofers (if set up).

Increase the volume level so that you can clearly hear the signal, then verify and compare all channels.
If you miss one signal, first check all connections and wires. Second, check whether the selected speaker setup and woofer setup in the Output menu matches your actual speaker system.

Main

The Main output menu sets the crossover, level, and sound EQ for the main speakers.

Crossover
Routing:

- Full-range: Allows the incoming signal to pass unfiltered.
- High pass: Removes the frequencies below the crossover frequency and lets high frequencies pass.
- Low pass: Removes the frequencies above the crossover frequency and lets low frequencies pass.

Frequency:
The number sets the crossover frequency for the routing in Hz.

The ideal frequency is determined by the frequency response of the loudspeakers and the frequency response of the subwoofer. For traditional setups the frequency should be the same for both Main and Preout.

Filter:

- LR 2nd, 4th or 8th order.
- BW 1st, 2nd or 4th order.

The references LR and BW refers to the inventors of modern crossover designs, Linkwitz Riley and Butterworth. The filter order refers to how the high pass and low pass outputs interact with each other, and to the steepness of the filter curve. The curve shown in the app or touchscreen will indicate the characteristic.

Level
Reduce the signal level for the main speaker output with up to 24 dB to match the levels of the pre output.

Speaker EQ
You can select any of the built-in equalizer filters or select “Custom” for designing your own filter to optimize the sound from your speakers.
A custom speaker EQ is optional and only required if your speaker has no internal crossover filters, or if you want to change the sound of your speakers.

Advanced: Analog Out and Digital Out

The Analog and Digital output menu sets the crossover filter, level, amp delay, signal, and sound EQ for the analog or digital pre-out. The default setting for the analog and digital output is Off.

Crossover

- Full Range: allows the signal to pass unfiltered.
- High pass: Removes the frequencies below the crossover frequency and lets high frequencies pass.
- Low pass: Removes the frequencies above the crossover frequency and lets low frequencies pass.

Frequency:
The number sets the crossover frequency for the routing in Hz.
The ideal frequency is determined by the frequency response of the loudspeakers and the frequency response of the subwoofer. For traditional setups the frequency should be the same for both Main and Preout.

Filter:

- LR 2nd, 4th or 8th order.
- BW 1st, 2nd or 4th order.

The references LR and BW refers to the inventors of common crossover designs, Linkwitz Riley and Butterworth. The filter order refers to how the high pass and low pass outputs interact with each other, and to the steepness of the filter curve. The curve shown in the app or touchscreen will indicate the characteristic.

Level
Reduce the signal level for the main speaker output with up to 24 dB to match the levels of the pre output.

Amp Delay
Amp Delay takes care of the signal delay (latency) of external amplifiers.
For example, if you have an active subwoofer with internal signal processing (DSP) or a separate Amplifier with internal A/D or D/A conversion, there may be a electronic signal delay in these products.

Request the internal signal delay (latency) in ms (milliseconds) of the connected amplifier, active subwoofer, or DSP from the manufacturer, and type-in the number in Amp Delay. This will time-align the main speakers with the pre-out and lead to a better sound integration.

Level Control
Full scale: The pre-out gives the full signal level from the audio source, independent from the volume control.
Regulated: The pre-out follows the volume control level set for the main speaker outputs.

Signal Output
Mono: The pre-out will provide a mono signal.
Stereo: The pre-out will provide a stereo signal.

Speaker EQ
You can select any of the built-in equalizer filters or select “Custom” for designing your own filter to optimize the sound from your speakers or subwoofer.

Advanced: 2nd Speaker Setup

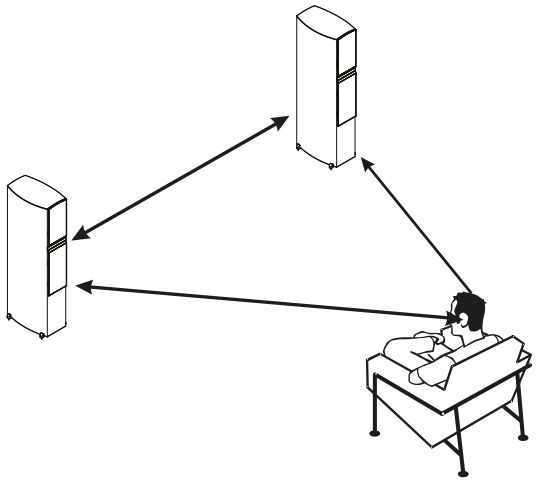
Add a 2nd speaker setup
Here you have the option to store a second speaker setup. This will allow you to test another speaker setup or to store and keep two calibrated setups for general use – example: with and without a subwoofer.

Enabling this will start the Guided Speaker Setup and RoomPerfect calibration for the 2nd speaker setup. When complete, the menu item Speaker Setup will be available in the main menu, allowing you to easily switch between the two setups.

Tips for setting up speakers

Stereo triangle

You can use the stereo triangle as a good rule of thumb when determining where to place your speakers. The distance between the speakers should be the same as the distance from your listening position to both speakers.

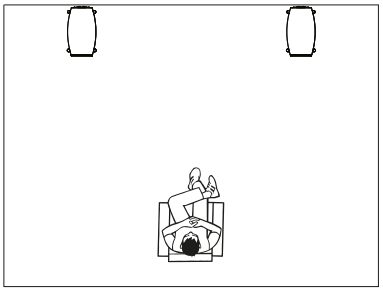


Tip: You can reduce reflections from the hard floors and hard surface walls by positioning a carpet, painting, a bookshelf, or other furnishings between you and the speakers. These objects act as diffusers.

Find the position of the diffusers by having someone hold a mirror flat against the wall or floor. When you can see the speaker in the mirror from the listening position, you have found the optimal position for the diffuser.

Speaker placement / Traditional box speakers

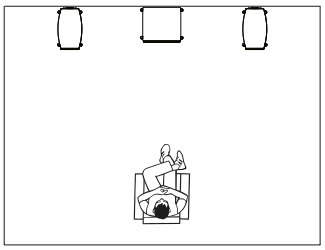
For an optimal listening experience with a RoomPerfect™ calibration, we recommend you place your speakers against the wall, opposite from your preferred listening position. This will ensure the wall reflection and the direct sound will reach your ears at the same time, giving you perfect timing and impulse response.



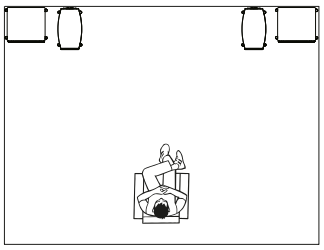
If your speakers have a bass-reflex port on the back, you should allow for a 5cm/2in clearance to the back wall. This will ensure there is no disruption to the functionality of the port.

Subwoofer placement

With a single subwoofer, we recommend placing the subwoofer against the wall between the main speakers.



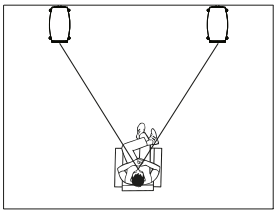
With two subwoofers, you should position one in each front corner, in line with the main speakers.

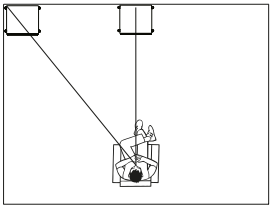


Note: As the Phase, Cut-Off Freq. and Level is now controlled by the TDAI-2210, you should set the controls of connected subwoofer(s) to neutral: Phase: 0, Cut-Off: Maximum and Level at 50% of maximum. When connecting the Lyngdorf boundary woofers, you should connect the analog outputs to the BYPASS input of the woofer.

Measuring distances

When measuring the distance to your main speakers, measure from the preferred listening position (the focus position) to the front of the speakers.
When measuring the distance to a subwoofer, measure from the preferred listening position to the back corner of the subwoofer.





Note: Always perform a new RoomPerfect™ calibration when you have changed speaker or subwoofer placement, or changed settings in the Output setup.

Sound: Headphones

Startup sets a default volume level.

Max limits the maximum volume level, for example to prevent high levels from damaging the headphones.

Mute at power on if headphones are connected. This function allows you to control, if the headphone connector should control the mute function on your speakers.

Sound: Polarity Inversion

Polarity inversion is equal to changing + and – on the cables to the loudspeakers. You can do this individually for each speaker.

Sound: Enhancements

ICC (Intersample Clipping Correction)

Can be set to enabled or disabled.

Digital audio tracks normally exceed 0 dBFS (decibels relative to full scale), why they will be clipped when being upsampled or otherwise processed in the audio chain, resulting in distortion.

With ICC enabled the TDAI-2210 will dynamically allow for extra headroom to avoid clipping during processing the audio signal.

Changing inputs or going into standby mode will reset the ICC level.

Subsonic Filter

Can be set to enabled or disabled.

A subsonic filter, also called rumble filter, is a high pass filter which cuts frequencies below 20 Hz. It can be used to prevent a turntable and the woofers or subwoofers from influencing each other.

For example, LPs can have warps wich cause the woofer to have large excursison in the subsonic frequencies below 20 Hz. Turntable placement, room vibrations, and floor vibrations can cause a similar effect.

Since frequencies below 20 Hz are not easily audible, activating the subsonic filter can prevent the woofer excursion, lower the distrotion, increase amplifier efficiency, and improve the overal sound performance.

Network

Wi-Fi (Wireless connection)
See the Wi-Fi status or set up a new connection by locating nearby networks.

Ethernet
Shows IP addresses and MAC address of the TDAI-2210.
Enter this IP address in a browser to see the amplifiers setup menu.
Allows for setting a Static IP address instead of the default DHCP (Dynamic)

Streaming
In this menu you can configure the basic setup of the music streaming:

- Streaming players can control volume: Set to Active or Inactive.
- Streaming players can change input source: Set to Active or Inactive.
- Streaming players can power on the device from standby mode: Set to Active or Inactive.
- Password sets a passowrd to restrict access to Airplay streaming

Software

Updates

In this menu you will see the curent software version on the TDAI-2210 and show an update, if available.

Note: In case the web interface is not accessible, or a fault in the update process has made the amplifier inaccessible, you can force a new software onto the TDAI-2210.

Forced Software Update
1. Save the new software on a FAT formatted USB drive.
2. Insert the USB drive into the “SW Update” connector on the back of the TDAI-2210.
3. Turn off the TDAI-2210 by disconnecting the mains power on the back of the device.
4. Hold down the standby button on the front and connect the mains power again.
5. When the Lyngdorf logo starts flashing, release the standby button and the TDAI-2210 will update the software. When the update is finished, the amplifier goes into standby.

Data

Backup
When a USB device is inserted in the connector on the rear of the TDAI-2210, this menu will allow you to store a complete backup of settings aincluding the RoomPerfectTM calibration. This will allow you to restore the amplifier to this specific setup at a later date.
Note: You can store several Backups. Make sure you enter useful backup file names to separate the versions.

Restore
If a backup file is available on USB, you can select and load it.

System

Reboot
Sets the TDAI-2210 to standby and starts it up again. This process closes all running programs and resets the system to its last state and setting.

Reset UI
Resets the user interface, screen and cache to default settings.

Factory Reset
Shuts down the system and returns to default factory settings.

Warning: All user preference settings, system data, and RoomPerfect data are lost when restoring to default settings! If you want to keep the settings, choose Reboot.

The Factory reset is also possible over the front panel. If you press and hold the Standby button for more than five seconds and release the button, he TDAI-2210 will initiate a factory reset.

If you have pressed the Standby button for more than five seconds by mistake, you can avoid the factory reset by holding the Standby button for an additional five seconds. This will skip the factory reset initiation.

Voicings: How to select and set up Voicings

A Voicing is a sound equalizing filter that can be activated to amplify or attenuate certain frequencies according to your personal preferences. A Voicing can be set for the TDAI-2210 in general, and assigned to each input individually, for example emphasize bass on one input without sacrificing neutrality on others.

Voicings
The TDAI-2210 comes with 14 Voicing presets.
The names and the shown equalizing curves indicate the sound character.

Neutral	Default Voicing with no change in tonal balance.
Music	Dampens the midrange to compensate for recordings that would otherwise sound too harsh.
Music 2	Further dampens the midrange and removes harshness.
Relaxed	Dampens the low and midrange frequencies.
Open	Dampens the low frequencies.
Open Air	Further dampens the low frequencies.
Soft	Dampens upper tones slightly, making bright tracks warmer and more balanced.
Action 1	Enhances the lower frequencies.
Action 2	Further enhances the lower frequencies.
Movie	Dampens the high frequencies.
Action Movie	Enhances the lower frequencies and dampens the high range frequencies.
News	Cuts low frequencies for live broadcasting, sports, news, and improves speech intelligibility.
Bass 1	Enhances the lower frequencies and dampens the midrange to compensate for recordings that would otherwise sound too harsh.
Bass 2	Further enhances the lower frequencies and dampens the midrange to remove harshness.

Creating Custom Voicings
A Voicing can combine up to eight filter sections. For each section, you can choose between certain filter designs, which then in combination will give you the total correction of the Voicing.
For each Voicing you will see a green line showing the total correction as well a blue line showing the correction caused by the selected filter section. If there is only one active filter section, only the blue line is shown. You can select between following filter designs:

- Low Pass: Functions as a crossover filter reducing the signal above the frequency.
- High Pass: Functions as a crossover filter reducing the signal below the frequency.
- Low Shelf: Attenuates the lower frequencies to a specified level.
- High Shelf: Attenuates the higher frequencies to a specified level.
- Parametric: Attenuates a specific frequency.

All these filters can be with positive or negative gain – effectively reversing the effect of the filter.

You can adjust the Overall gain for each voicing in order to be able to switch between Voicings without experiencing any change in perceived volume level.

Try experimenting by creating your own Voicings and test the functionality of the different filter sections.

Exporting and Importing Voicings
It is now possible to download single voicings to a file and to add new voicings by uploading those files as well. This will make it possible to copy a voicing from one device to another. The file format is identical for all enabled Lyngdorf products, so if you have a voicing you like on your TDAI-2210 amplifier, it is possible to add that to your Lyngdorf multichannel processor or vice versa.

You can also download and upload an entire set of voicings. Again, these files will work throughout the devices which support this feature.

Note:
Uploading a set of voicings with this feature will replace all voicings in the amplifier.
Single voicing files have the extension **single_voicing.xml**, and this must not be changed.

Edit or delete Voicing
This dropdown list contains the voicings currently in the amplifier. Selecting a voicing in the list will allow you to delete or edit the selected voicing (this will open the voicing editor)

Add new Voicing
To create a new custom Voicing using the Voicing editor, enter the name of your new voicing and press Add.
To add a voicing from a single_voicing.xml file, browse for the file and then Click “Add”.

Replace all Voicings from file
This is the functionality to replace all voicings in the amplifier with a new set from a voicings.xml file.
Remember that this will overwrite all voicings currently in the amplifier. Click “Browse” to find the voicings.xml file you wish to upload and then click “Apply” to use it.
On the bottom of the page is a link to download the current set of voicings in the amplifier to a voicings.xml file.

Through selecting any of the stored Voicings, you can see the details by selecting “Edit”. You can also delete the stored Voicings and add new designs here.

Music Streaming Services

Google Cast
Google Cast is a feature that lets you stream your favorite music from your phone, tablet or laptop right to your speakers. Easily control your speakers with apps you already know and love from your Android phone or tablet, iPhone®, iPad®, Mac® or Windows® laptop, or Chromebook.

Please use your Google Home application to accept Google Terms of Service and Google Privacy Policy https://policies.google.com/privacy?hl=en

Google, Android, Google Cast, and other marks are trademarks of Google LLC.

Spotify Connect
Use your phone, tablet or computer as a remote control for Spotify. Go to *spotify.com/connect* to learn how. The Spotify Software is subject to third party licenses found here: https://developer.spotify.com/third-party-licenses#embedded-sdk-third-party-licenses

Tidal Connect
When the TDAI-2210 is connected to your local network, it will be available from your Tidal Connect enabled devices in the Tidal app (requires a Tidal account). To read more about Tidal services go to: https://tidal.com

Qobuz Connect
When the TDAI-2210 is connected to your local network, it will be available from your Qobuz Connect enabled devices in the Qobuz app (requires a Qobuz account). To read more about Qobuz services go to: https://qobuz.com

Roon
Use your Roon control app to initiate streaming. To read more about Roon services go to: https://roonlabs.com.

UPnP
This function allows you to select and play music files in UPnP enabled libraries on your local network. You might have problems in accessing files as UPnP a set of protocols and not a defined standard. The implementation of UPnP is therefore not always fully functional for media playback.

USB storage
This function allows you to select and play music files on attached USB devices and flash memory (requires FAT32 format). Use the Storge input icon to access the folders.

airable
This function allows you to access internet radio stations and podcasts around the world. You can search stations and podcasts through references to genre or geographical relation. When a station or podcast is playing, you can assign it to one of the 10 presets. They will appear as a new input for direct selection. https://www.airablenow.com

Airplay2
The TDAI-2210 has native support for multi-room application under Apple Airplay. Use your iOS device to initiate individual or simultaneous Airplay streaming to all TDAI-2210 amplifiers in your setup. https://www.apple.com/airplay/

Bluetooth (BLE)
Select the Bluetooth input and the TDAI-2210 can be found in your other devices' Bluetooth settings.

Music Streaming Formats and Codecs

Overview of supported formats and codecs for the streaming player (stereo only)

AAC:	64 kbps; 128 kbps; 256 kbps; 320 kbps
AIFF:	44.1 kHz, 16 bit; 48 kHz, 16 bit; 88.2 kHz, 16 bit; 96 kHz, 16 bit; 192 kHz, 16 bit; 384 kHz, 16 bit
ALAC:	44.1 kHz, 16 bit; 44.1 kHz, 24 bit; 48 kHz, 24 bit; 48 kHz, 24 bit; Mono 88.2 kHz, 24 bit; 96 kHz, 24 bit 192 kHz, 24 bit 384 kHz, 32 bit
FLAC:	44.1 kHz, 16 bit; 44.1 kHz, 24 bit; 96 kHz, 24 bit; 192 kHz, 16 bit; 192 kHz, 24bit; 384 kHz, 24 bit
MP3:	96 kbps, 32 kHz; 128 kbps, 44.1 kHz; 192 kbps, 44.1 kHz; 256 kbps, 44.1 kHz 320 kbps; 44.1 kHz 320 kbps; 48 kHz VBR, 44.1 kHz VBR, 48 kHz
Ogg Vorbis:	44.1 kHz 48 kHz 88.2 kHz 96 kHz 192 kHz
WAV:	44.1 kHz, 16 bit; 48 kHz, 16 bit; 48 kHz, 24 bit; 88.2 kHz, 24 bit; 96 kHz, 24 bit; 192 kHz, 24 bit; 384 kHz, 24 bit
WMA:	WMA9

HDMI

What is CEC?
Consumer Electronics Control (CEC) is an HDMI feature designed to allow you to command and control CEC-enabled devices that are connected through HDMI, by using only one of the remote controls (for example, controlling the volume level in the TDAI-2210 by using the remote control of the TV).

The level of CEC implementation depends on the manufacturer of each product, and even if brand new, not all electronic devices supports CEC. As the television is “CEC master” in a HDMI setup, the CEC implementation of the television will determine, what is possible for the entire system.

CEC
Enables and disables CEC (Consumer Electronics Control) over HDMI.

HDMI TV Audio Input
Switches to the selected input upon detecting an HDMI Audio signal

Note:
As default, CEC is not activated on HDMI to comply with stand-by power regulations. CEC functionality only works with the TDAI-2210 set in Network Stand-By.

CEC is marketed by manufacturers under individual names and designed for promoting the connection of same brand sources. (SONY: Bravia Link, Panasonic: Viera Link, etc.)

Technical specifications

Description:	2-channel integrated streaming amplifier
Power rating:	2 x 210 W RMS (4 Ohm), 2 x 105 W RMS (8 Ohm)
Standby power consumption:	< 0.5W
Dimensions (W x H x D):	325 x 102 x 300 mm (incl. connections)
	12.8 x 4 x 11.8 inches (incl. connections)
Weight:	4,8 kg / 10,6 lb
Finish:	Matte black

For the newest and complete technical speciifications please visit the TDAI-2210 product page on our website www.steinwaylyngdorf.com

Cleaning and maintenance

The TDAI-2210 does not require any regular maintenance except to keep its exterior clean. Simply wipe it with a clean, soft cloth. Do not use cleaner or any liquid directly on the product. A small amount of non-abrasive cleaner on the cloth can be used to remove any dirt or fingerprints. Do not use abrasive cleaners or cleaners containing liquid solvents.

Technical assistance

If you have any questions regarding your Lyngdorf product, please contact your nearest Lyngdorf representative or contact Lyngdorf Audio:

SL Audio A/S
Rævevej 3
7800 Skive
Denmark
E-mail: contact@lyngdorf.com
Web: www.steinwaylyngdorf.com