

LYNGDORF AUDIO MP-50

OWNER'S MANUAL

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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 be capable of complying with the necessary regulations in the configuration in which the equipment is marketed.

Pre-Installation

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

Unpacking the Product

Carefully remove the unit and accessory kit 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.

Note: 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.

Inventory

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

- Owner's manual
- Power cord
- Remote
- Microphone
- Microphone stand
- Microphone cable
- Rack ears

Operating Voltage

Lyngdorf Audio products must be connected to the mains power system only. The MP-50 will automatically detect voltage between 100-240v.

Ventilation Requirements

The MP-50 does not have a built-in fan, nor does it require special measures to ensure proper heat dissipation. It should be placed according to these guidelines:

- It should always have at least one inch / 25mm of free space on all sides.
- It should be placed in an environment free of excessive heat.
- In a rack system, the MP-50 should be placed at the bottom of the rack, still with at least one inch / 25mm free space on all sides.

Home Automation System Integration

The MP-50 is compatible with home automation systems via the RS232 and network connector on the rear socket panel. The MP-50's IR and trigger connections can also be programmed for use in a home automation system.

IP Control

Access the MP-50 by going to <http://mp50.local> in your browser.

Pressing the OK button on the remote and toggling through will display the IP address of the MP-50 on the OSD and on the front of the product.

Open a TCP connection on port 84 and use the same protocol as on the serial interface. Use Telnet, Putty, or a similar program to open the TCP connection.

If you do not know the IP address of the MP-50 on your local network, the MP-50 supports Apple's Bonjour Discovery service, which must be on the computer with which you wish to set up the MP-50. The software is built-in as part of the Apple OS X operating system (not iOS devices). For Windows operating systems, the software can be found at <http://www.apple.com/support/bonjour/>

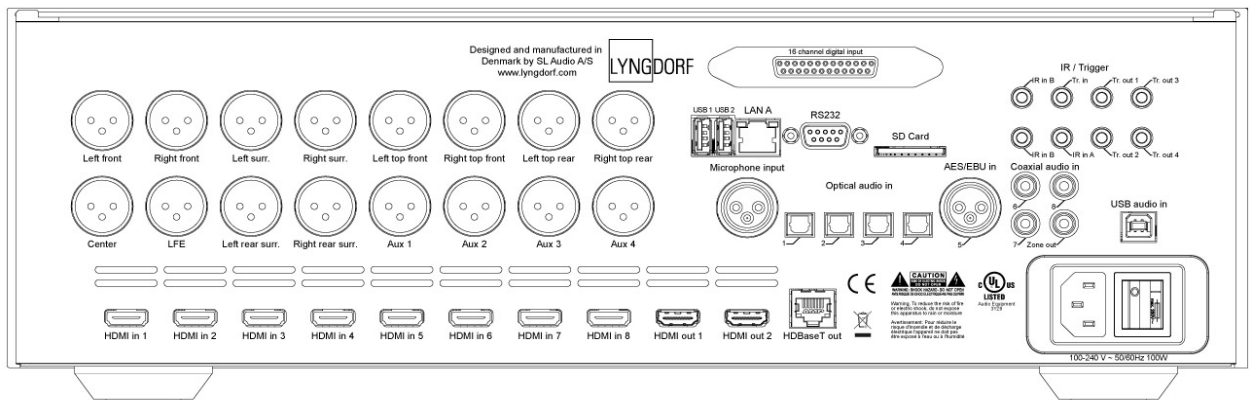
Preparing the MP-50 for Mounting in a Rack

The MP-50 processor is equipped from the factory with feet for free-standing placement.

To install the MP-50 in a rack:

1. Turn the MP-50 upside-down and place it on a stable, even surface.
2. The screws used to fasten the rack brackets to the bottom of the MP-50 are in the holes designated for the brackets when the product leaves the factory.
3. Fasten the brackets for rack mounting to the MP-50.
4. Mount the MP-50 in a rack.

Rear Panel



On the back of the MP-50, you will find a range of inputs and outputs:

- 16 x balanced audio outputs (configured for 11.1 plus 4 auxiliary)
- 8 x HDMI inputs and 2 x HDMI outputs, all 4K compatible
- 1 x HDBaseT output
- 2 x USB connectors, for music file playback, software updating, etc.
- 1 x streaming USB audio input
- 1 x LAN connector
- 1 x microphone input for the RoomPerfect™ room correction microphone
- 1 x SD card slot for storing backup data
- 3 x IR inputs
- 1 x trigger input and 4 x trigger outputs
- 1 x RS-232 connector for serial control of the unit
- 1 x DCI-compliant digital AES/EBU input (optional upgrade)
- 4 x optical, 1 x AES/EBU and 3 coaxial digital audio inputs
- 1 x coaxial digital audio output (for zone B)

Note: Do not use the USB ports for charging smartphones and tablets.

Remote Control

The MP-50 comes with a dedicated remote control, which can operate both with radio frequencies (RF) and infrared control (IR)

Setup	Access the installation menu.
Standby	Turn the MP-50 on and into standby.
Audio	Access the post-processing menu.
Trim	Access to miscellaneous audio adjustments.
Up/Down	Move up and down in menus. Browse available settings in a menu. Toggles between the available RoomPerfect™ filters.
Left/Right	Move left and right in menus. Toggle between neutral and the available voicings.
OK	Activate the info screen, indicating the status of the unit. Select a menu and store a selected setting.
Back	Return to the previous menu.
Menu	Access the user menu.
SRC	Access the source menu list.
Source +/-	Toggle between active sources.
Volume +/-	Turn volume up and down.
Mute	Mute and restore the sound.
Play/Pause	Play/pause the currently playing track in the media player.
Skip Forward/ Backwards	Skip in the current playlist in the media player.



How to Pair Remote Control in RF Mode

The MP-50 remote has both an IR and RF mode, and is by default set to IR.

To pair the RF remote control to the MP-50:

1. Turn on the MP-50.
2. Hold down Play/Pause and OK until the remote control's green LED flashes.
3. Release the buttons.
4. Point the remote control at the MP-50 and hold it within 30cm / 1 foot of the front panel; when the green LED stops blinking, the remote is connected.
5. The remote is now RF paired to the MP-50.

To reset the pairing of the remote control, press Back and OK until the red LED flashes twice.

Switching Remote Between RF and IR Mode

To switch the remote from IR to RF mode, hold down OK and 2. The LED will flash green twice.

To switch the remote from RF to IR mode, hold down OK and 1. The LED will flash red twice.

If you press a button on the remote and the red LED at the top turns on, then you are in IR mode. If it turns green you are in RF mode.

Setup Procedure

Set up the MP-50 surround sound processor by following these steps:

1. Connect the speaker to the power amplifiers.
2. Connect all external equipment, audio and video, home automation system, mains, etc. to the MP-50.
3. Switch on the MP-50 and all connected equipment.
4. Access the setup menu via the web interface or the remote and OSD.
5. Go to "Speaker and Room" and set up the system.
6. Connect the amplifiers to the specified outputs.
7. Select and press "Verify speakers."
8. Run RoomPerfect™ Guided Setup.
9. Set up video sources, audio, zone b, etc.
10. Save and back up settings.

Installation Via OSD

Connect a screen to the MP-50 using any of the video output sockets on the back. Access the menu system by pressing the Setup button on the remote control.

There are some differences between how the web interface and the OSD function. This manual describes how to set up via the OSD interface.

Installation Via Web Interface

You will need a computer, and the MP-50 must be connected to an existing network, or you may use a crossover network cable for direct connection.

If you do not know the IP address of the MP-50 on your local network, the MP-50 supports Apple's Bonjour Discovery service, which must be on the computer with which you wish to set up the MP-50. The software is built-in as part of the Apple OS X operating system (not iOS devices). For Windows operating systems, the software can be found at <http://www.apple.com/support/bonjour/>

- Access the web menu by typing <http://mp50.local/> in your browser.
- Or, press the OK button on the remote. Toggling through will display the IP address.

HOME Screen

The HOME screen refers to the daily operation as performed with the remote control. The page displays selected input and formats.

Loudness management turns on a traditional loudness function for low playback level as well as functions dedicated to the specific formats being decoded. These functions are managed in the setup menu: Audio Setup / Audio Processing.

The interface for controlling the built-in media streamer is found in the bottom section of this page. For information as to the use of the interface see section for Streaming Setup.

Source Management

In the Source menu, you can register the individual sources connected to the MP-50 by the audio and/or video input sockets they use.

Add Source

Source name

Input the name for the source.

Lipsync offset (ms)

Set delay time in milliseconds to ensure that the video and audio signals are played back simultaneously.

Volume offset (dB)

Enables you to match input levels from different sources.

Audio input

Select the audio input connector.

If you want the audio input to match the video input from an HDMI source, select HDMI Audio.

Default postprocessing

Select the default postprocessing mode.

Default voicing

Select the default voicing.

Video input

Select the video input connector.

Trigger out

Choose which trigger output to activate when using this source. (The interface for controlling the triggers is found in the Trigger Setup under System Configuration)

Preset vTuner station

Selects stored presets of the vTuner Internet radio station. (The interface for controlling the built-in media streamer with vTuner is found in the bottom section of the HOME page)

Edit

Edit all enabled sources.

For a description of the menu items, see the *Source -> Create* chapter.

To save changes, you must press “Accept” after making changes to a single input. Do not go to the next input before saving changes.

Arrange

Change the order of a source by:

- Highlighting it
- Moving it out of the stack by pressing right on the remote
- Moving the source by pressing up/down
- Reinserting it by pressing left.

Delete

Delete an enabled source by highlighting it and pressing right on the remote.

Speaker and Room

The purpose of the speaker setup is to tell the system which speakers and subwoofers are available and how big they are, which in turn reveals how much bass they are capable of reproducing. References to “speakers” in this document are specific to “normal” speakers and do not include subwoofers.

Speaker and Room

Edit Configuration

Bass Management

Speaker Cutoff Frequency

For all the speakers in the system, a size must be chosen. The speaker size informs the system how much bass the speaker is capable of playing by selecting a cutoff frequency. Signals below this frequency will then be redirected to another speaker or subwoofer in the system.

Available selections for speaker size are:

- None (The output is unused)
- XXL (Plays full range signal and LFE channel if no subwoofer is connected)
- XL (Plays full range signal)
- L (Cutoff frequency 40Hz)
- M (Cutoff frequency 80 Hz)
- S (Cutoff frequency 100Hz)
- XS (Cutoff frequency 120Hz)
- Custom (User selectable cutoff frequency)

Which cutoff frequency should you choose?

When selecting a cutoff frequency for your speakers, you should select a frequency higher than the lowest frequency your speaker is specified to play.

If the redirected bass will be played by a subwoofer (and not a full range speaker), you should also make sure that the cutoff frequency is lower than the highest frequency the subwoofer can play.

XL Speakers

Selecting the speaker size as XL will designate the speaker as capable of playing a full range signal.

The system can only redirect bass to XXL speakers placed at the Left Front/Right Front, Left Surround/Right Surround, and Left Rear Surround/Right Rear Surround positions.

In a system with front/rear subwoofers present, there will be no difference between XL and XXL, since the redirected bass is played by the subwoofers instead.

In a system with an LFE sub, the LFE sub will play the LFE channel, while the XXL speakers will play the redirected bass. (LFE is a separate channel for Low Frequency Effects)

In a system with no subwoofers at all, the XXL speakers will play the redirected bass as well as the LFE channel.

Normally a system without any subwoofers will need to have XXL speakers to receive LFE and redirected bass. There is, however, one exception; it is possible to make a system without subwoofers and with all XL speakers. Since there is no redirected bass, the system can handle

this without XXL speakers, but in such a system, the LFE channel will not be played by any speakers.

Front and Rear Subwoofers

The front and rear subwoofers in the speaker setup provide a way to add more than a single sub to the system. Typically, the front subwoofers are placed in each corner behind the front speakers, while the rear subwoofers are placed in the corners of the room behind the listening position. It is possible to use front/rear subwoofers alone or in combination with an LFE sub.

If front/rear subwoofers are used without an LFE in the system, they will play both the LFE channel and the redirected bass.

If front/rear subwoofers are used in combination with an LFE sub, then the LFE sub will play the LFE channel while the front/rear subwoofers will play the redirected bass.

When front/rear subwoofers are playing the redirected bass, the system will distribute the channels on the left and right sides and between front and rear.

When setting up the subwoofers, there is an option to select the size of the sub. This frequency is only used to add a low pass filter to the LFE channel. If the subwoofers are not playing LFE, then this setting has no effect. If subwoofers are playing the LFE, then the LFE channel will be low pass filtered before being sent to the subwoofers. This setting has no influence on the redirected bass, since the filter frequency for that was selected when setting up the speakers.

LFE (Low Frequency Effects) Sub

The LFE sub is the traditional LFE subwoofer output.

When used in combination with either XXL speakers or front/rear subwoofers, the LFE sub will only play the LFE channel.

With a system with speakers set to Large or smaller, the LFE sub will play the LFE channel as well as the redirected bass.

Bi-amping

For the front speakers, it is possible to select an option to use bi-amping, in which the system will route a copy of the signal for the left and right front speakers to a pair of the AUX outputs.

This signal is an exact copy of the existing signal for the front speakers. If the front speakers have been given a size with a cutoff frequency, that high pass filter is applied to these outputs as well. This means it is possible to use bi-amping for speakers and still have bass management redirect the bass to a subwoofer instead.

Natural roll-off

When natural roll-off is used, the main speaker will receive the full range signal and will be allowed to roll-off naturally. The bass cutoff frequency will still be used to send the bass to a subwoofer or XXL speaker, but it will not be applied to the main (high pass) output.

Assignment of speakers to bass positions

When XXL or front/rear subwoofers are used, the redirected bass from speakers will be distributed to the left or right side, and when rear subwoofers or XXL surround or rear speakers are involved, it will also be distributed between front and rear. This table shows where each speaker has their bass directed to in these situations.

Position	Description	Left / right	Front / rear
L	Left	Left	Front
R	Right	Right	Front
C	Center	Both	Front
LS	Left surround	Left	Rear
RS	Right surround	Right	Rear
LRS	Left rear surround	Left	Rear
RRS	Right rear surround	Right	Rear
CB	Center back	Both	Rear
LW	Left wide	Left	Front
RW	Right wide	Right	Front
LTF	Left top front	Left	Front
RTF	Right top front	Right	Front
LTM	Left top middle	Left	Front
RTM	Right top middle	Right	Front
LTR	Left top rear	Left	Rear
RTR	Right top rear	Right	Rear
HL	Height left	Left	Front
HR	Height right	Right	Front
HLS	Height left surround	Left	Rear
HRS	Height right surround	Right	Rear
HC	Height center	Both	Front
TOP	Top ceiling / VoG	Both	Front

Bass management examples

The following examples show some different setups and how bass is routed. The examples only mention where the LFE channel and the redirected bass is played; the high frequency part of any channel is always played by the speaker for that channel. The same goes for bass that is not redirected, so this is not specifically mentioned.

7.1, LFE Sub, All XL Speakers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size: XL</i>	<i>C</i> <i>Center</i> <i>Size: XL</i>	<i>R</i> <i>Right</i> <i>Size: XL</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height</i> <i>Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size: XL</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size: XL</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size: XL</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size: XL</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

7.1, LFE Sub

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size: L</i>	<i>C</i> <i>Center</i> <i>Size: L</i>	<i>R</i> <i>Right</i> <i>Size: L</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:L</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:L</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size:L</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size:L</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

7.1, LFE Sub, Front XXL Speakers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:XXL</i>	<i>C</i> <i>Center</i> <i>Size:L</i>	<i>R</i> <i>Right</i> <i>Size:XXL</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:L</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:L</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size:L</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size:L</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

7.1, LFE Sub, Front XXL Speakers, Surround XL Speakers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:XXL</i>	<i>C</i> <i>Center</i> <i>Size:L</i>	<i>R</i> <i>Right</i> <i>Size:XXL</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:XL</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:XL</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size:L</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size:L</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

5.1, LFE Sub, Front XL Speakers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:XL</i>	<i>C</i> <i>Center</i> <i>Size:L</i>	<i>R</i> <i>Right</i> <i>Size:XL</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:L</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:L</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

7.1, Front Subwoofers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:M</i>	<i>C</i> <i>Center</i> <i>Size:M</i>	<i>R</i> <i>Right</i> <i>Size:M</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:M</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:M</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size:M</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size:M</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

7.1.4, Front Subwoofers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:L</i>	<i>C</i> <i>Center</i> <i>Size:M</i>	<i>R</i> <i>Right</i> <i>Size:L</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i> <i>Size:S</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i> <i>Size:S</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i> <i>Size:S</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i> <i>Size:S</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:L</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:L</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size:L</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size:L</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

5.1, Front Subwoofers, XL Front Speakers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:XL</i>	<i>C</i> <i>Center</i> <i>Size:L</i>	<i>R</i> <i>Right</i> <i>Size:XL</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:L</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:L</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

7.1 LFE Sub and Front Subwoofers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size: L</i>	<i>C</i> <i>Center</i> <i>Size:L</i>	<i>R</i> <i>Right</i> <i>Size:L</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:L</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:L</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size:L</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size:L</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

7.1.4, LFE Sub, Front and Rear Subwoofers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:L</i>	<i>C</i> <i>Center</i> <i>Size:L</i>	<i>R</i> <i>Right</i> <i>Size:L</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i> <i>Size:M</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i> <i>Size:M</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i> <i>Size:M</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i> <i>Size:M</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:L</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:L</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size:L</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size:L</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

7.1.4, LFE Sub, Front and Rear Subwoofers and XL Front Speakers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:XL</i>	<i>C</i> <i>Center</i> <i>Size:L</i>	<i>R</i> <i>Right</i> <i>Size:L</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i> <i>Size:M</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i> <i>Size:M</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i> <i>Size:M</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i> <i>Size:M</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:L</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:L</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size:L</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size:L</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

7.1.4, LFE Sub and XXL Front and Surround Speakers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:XL</i>	<i>C</i> <i>Center</i> <i>Size:L</i>	<i>R</i> <i>Right</i> <i>Size:XL</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i> <i>Size:M</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i> <i>Size:M</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle'</i> <i>Size:M</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i> <i>Size:M</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:L</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:L</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size:L</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size:L</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

7.1.4, XXL Front and Surround Speakers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:XXL</i>	<i>C</i> <i>Center</i> <i>Size:L</i>	<i>R</i> <i>Right</i> <i>Size:XXL</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i> <i>Size:M</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i> <i>Size:M</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i> <i>Size:M</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i> <i>Size:M</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:XXL</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:XXL</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size:L</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size:L</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

5.1, XXL Front Speakers

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:XXL</i>	<i>C</i> <i>Center</i> <i>Size:L</i>	<i>R</i> <i>Right</i> <i>Size:XXL</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:L</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:L</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

7.1, XXL Front Speakers and XL Surrounds

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i> <i>Size:XXL</i>	<i>C</i> <i>Center</i> <i>Size:L</i>	<i>R</i> <i>Right</i> <i>Size:XXL</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i> <i>Size:XL</i>						<i>RS</i> <i>Right</i> <i>Surround</i> <i>Size:XL</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i> <i>Size:M</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i> <i>Size:M</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

11.1, LFE Sub

		<i>HL</i> Height Left Size:M	<i>HC</i> Height Center Size:M	<i>HR</i> Height Right Size:M		
<i>SUB L</i> Subwoofer Left	<i>LW</i> Left Wide	<i>L</i> Left Size:XL	<i>C</i> Center Size:L	<i>R</i> Right Size:XL	<i>RW</i> Right Wide	<i>SUB R</i> Subwoofer Right
			<i>SUB LFE</i> Subwoofer LFE			
		<i>LTF</i> Left Top Front		<i>RTF</i> Right Top Front		
		<i>LTM</i> Left Top Middle	<i>TOP</i> Top Size:M	<i>RTM</i> Right Top Middle		
	<i>HLS</i> Height Left Surround Size:M				<i>HRS</i> Height Right Surround Size:M	
<i>LS</i> Left Surround Size:L						<i>RS</i> Right Surround Size:L
		<i>LTR</i> Left Top Rear		<i>RTR</i> Right Top Rear		
<i>SUB LR</i> Subwoofer Left Rear		<i>LRS</i> Left Right Surround	<i>CB</i> Center Back	<i>RRS</i> Right Rear Surround		<i>SUB RR</i> Subwoofer Right Rear

Dolby Atmos and Auro-3D

The system supports Dolby Atmos as well as Auro-3D. The speakers supported for those two systems are:

Auro-3D:

- HL (Height Left)
- HC (Height Center)
- HR (Height Right)
- HLS (Height Left Surround)
- HRS (Height Right Surround)
- TOP (Top ceiling, also known as VoG / Voice of God)

Dolby Atmos:

- LTF (Left Top Front)
- RTF (Right Top Front)
- LTM (Left Top Middle)
- RTM (Right Top Middle)
- LTR (Left Top Rear)
- RTR (Right Top Rear)
- LW (Left Wide)
- RW (Right Wide)

If Dolby Atmos material is played in an Auro-3D setup, the system will try to match the Auro-3D specific speakers to the nearest Dolby Atmos equivalent; the same goes for playing Auro-3D material on a Dolby Atmos setup. The system will also handle hybrid setups with both types of speakers.

Note: You cannot set a single set of top speakers to be LTM / RTM without having set up LTF / RTF / LTR / RTR speakers. With a single set of top level speakers, these must be set as LTF / RTF.

Auro-3D Example: 11.1

If Dolby Atmos material is played on the above Auro-3D setup, the system will match the speakers, so the LTF/RTF channels are played through the HL/HR speakers and the LTR/RTR channels are played through the HLS/HRS speakers. The HC and TOP speakers will not be used.

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i>	<i>C</i> <i>Center</i>	<i>R</i> <i>Right</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i>						<i>RS</i> <i>Right</i> <i>Surround</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

Dolby Atmos Example: 7.1.4

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i>	<i>C</i> <i>Center</i>	<i>R</i> <i>Right</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i>						<i>RS</i> <i>Right</i> <i>Surround</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

If Auro-3D material is played on this setup, the system will play the HL/HR channels through the LTF/RTF speakers and the HLS/HRS channels through the LTR/RTR speakers. The LRS and RRS speakers will not be used.

Hybrid Auro-3D and Dolby Atmos Example

		<i>HL</i> <i>Height Left</i>	<i>HC</i> <i>Height Center</i>	<i>HR</i> <i>Height Right</i>		
<i>SUB L</i> <i>Subwoofer</i> <i>Left</i>	<i>LW</i> <i>Left Wide</i>	<i>L</i> <i>Left</i>	<i>C</i> <i>Center</i>	<i>R</i> <i>Right</i>	<i>RW</i> <i>Right Wide</i>	<i>SUB R</i> <i>Subwoofer</i> <i>Right</i>
			<i>SUB LFE</i> <i>Subwoofer LFE</i>			
		<i>LTF</i> <i>Left Top</i> <i>Front</i>		<i>RTF</i> <i>Right Top</i> <i>Front</i>		
		<i>LTM</i> <i>Left Top</i> <i>Middle</i>	<i>TOP</i> <i>Top</i>	<i>RTM</i> <i>Right Top</i> <i>Middle</i>		
	<i>HLS</i> <i>Height Left</i> <i>Surround</i>				<i>HRS</i> <i>Height Right</i> <i>Surround</i>	
<i>LS</i> <i>Left</i> <i>Surround</i>						<i>RS</i> <i>Right</i> <i>Surround</i>
		<i>LTR</i> <i>Left Top</i> <i>Rear</i>		<i>RTR</i> <i>Right Top</i> <i>Rear</i>		
<i>SUB LR</i> <i>Subwoofer</i> <i>Left Rear</i>		<i>LRS</i> <i>Left Right</i> <i>Surround</i>	<i>CB</i> <i>Center Back</i>	<i>RRS</i> <i>Right Rear</i> <i>Surround</i>		<i>SUB RR</i> <i>Subwoofer</i> <i>Right Rear</i>

In this hybrid system, there are LTF/RTF and LTR/RTR speakers for Dolby Atmos, while there are only HL/HR speakers for Auro-3D. Playing back Dolby Atmos material in this system will use the LTF/RTF and LTR/RTR speakers as usual, while not using the HL/HR speakers. When playing back Auro-3D material in this setup, the system will map the HLS/HRS channels to the LTR/RTR speakers, so the HL/HR speakers and the LTR/RTR speakers will be playing the HL/HR and HLS/HRS channels respectively.

Dolby-enabled speakers

For Dolby Atmos setups, it is possible to add Dolby-enabled speakers instead of using top speakers mounted in the ceiling.

If you have Dolby-enabled speakers on top of your front and surround speakers, go to the settings for these speakers and activate the Dolby-enabled speaker option, and then select the corresponding size. The system will then find out which signal is to be routed for this speaker and will add an output for it.

Notice that playback of Auro-3D material will not make use of Dolby-enabled speakers.

Verify speakers

Press the Verify Speakers button to verify your speaker connections.

Adjust Sub

With the RoomPerfect™ microphone at the listening position, push “Start.” Adjust the volume on the subwoofer(s) according to the instruction and push “Next.”

This will assist you in having the optimal level setting ON THE SUBWOOFER(S) to have the correct RoomPerfect™ calibration.

Matrix-Generated Extra Channels

The decoder in the device will decode a maximum of 12 discrete channels. However, for Atmos setups it will be possible to use up to four additional speaker positions which will then be generated in the switch matrix.

Using the 12 discrete channels, the largest possible setups are either 5.1.6, 7.1.4 or 9.1.2. With the 4 extra positions, setups up to 9.1.6 are possible. When creating the larger setups, the switch matrix can generate Front Wide positions by mixing together Front channels with Surround channels and it can create Top Middle positions by mixing together Top Front and Top Rear channels.

In the maximum possible example of 9.1.6, the decoder will use the 12 discrete channels for L, R, LS, RS, C, LFE, LRS, RRS, LTF, RTF, LTR and RTR.

- LW will then be generated as a mix of L and LS
- RW as a mix of R and RS
- LTM as a mix of LTF and LTR
- RTM will be a mix of RTF and RTR.

In the web interface the designation will be grey text instead of white to indicate that these outputs are matrix generated.

RoomPerfect™

RoomPerfect™ is designed to analyze and correct for the negative effects that the listening room has on the speaker sound. See our website www.lyngdorf.com for more detailed information.

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.

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.

It is possible to add multiple focus positions. This must be done after RoomPerfect™ has been set up completely.

Initial setup

Be sure to select the unit of measure, then enter the distances to the speakers and woofers.

How to measure distances to speakers and woofers

The best results are obtained by using a laser-equipped measuring device. Before starting, place the RoomPerfect™ microphone at listening height in the main listening position. For each channel, measure the straight-line distance through the air from the tip of the RoomPerfect™ microphone to the center of the tweeter unit in the loudspeaker in question. Do not measure distances at floor level, as these measurements will not give acoustically accurate results.

When measuring distances to **in-room** woofers:

- If the woofer(s) is in the corner of the room, measure the distance to the corner of the room.
- If the woofer(s) is up against the wall, measure the distance from the listening position to the back edge of the woofer.
- If you have a stack of woofers taller than the listening position, measure the distance from the listening position to the back edge of the middle of the stack.

When measuring distances to **in-wall** woofers:

- If the stack of woofers is taller than the listening position, measure the distance from the listening position to the dust cap of the middle of the stack of woofers.
- If the woofers are lower than the listening position, measure the distance from the listening position to the top dust cap of the top woofer.

How to Set Up RoomPerfect™

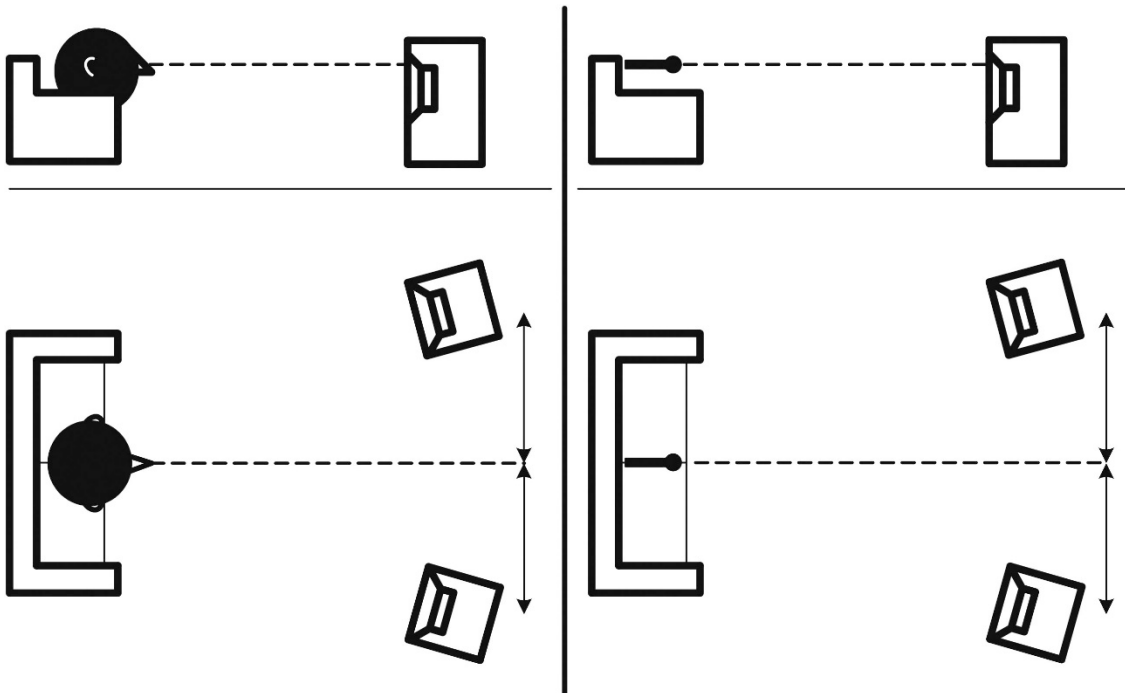
The RoomPerfect™ microphone is a very sensitive and finely calibrated device which must be treated with utmost care. If the microphone has been dropped on the floor, it may be damaged. If this is the case, obtain a new microphone from your Lyngdorf Audio representative before performing the system calibration.

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 microphone terminal on the rear panel of your processor.

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 back panel 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.



Adjust Sub

With an active subwoofer connected to the MP-50, this menu will guide you into setting the volume level on the subwoofer controls. Follow the instructions on the display to

1. Find the correct system volume to do the Subwoofer adjustment
2. Find the optimal volume setting **on the Subwoofer** for the RoomPerfect™ calibration.

You can choose to use a volume setting other than the one requested by the system. The calibration will not be inferior in quality, but the time required for an exact measurement will be longer. If the volume setting is too high, the system will display Error – Clipping. Reduce the volume and try again.

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 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.

Measuring the Focus Position

When the calibration volume has been set, RoomPerfect™ will send a range of 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 end result.

See RoomPerfect™ troubleshooting if the measurement stops prematurely, and then retry the measurement.

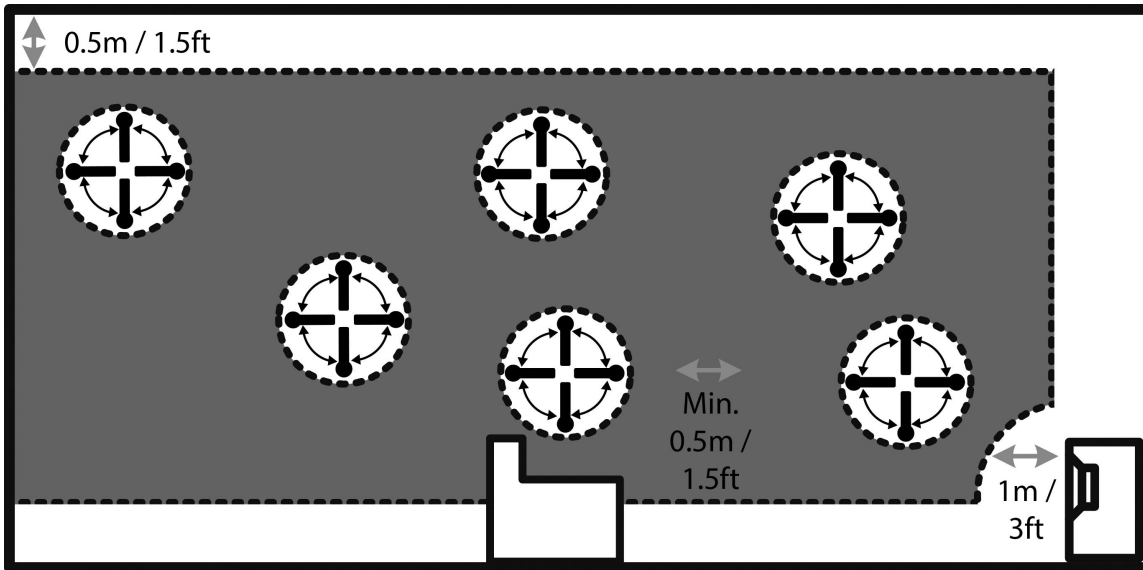
Measuring Random Room Positions

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%.

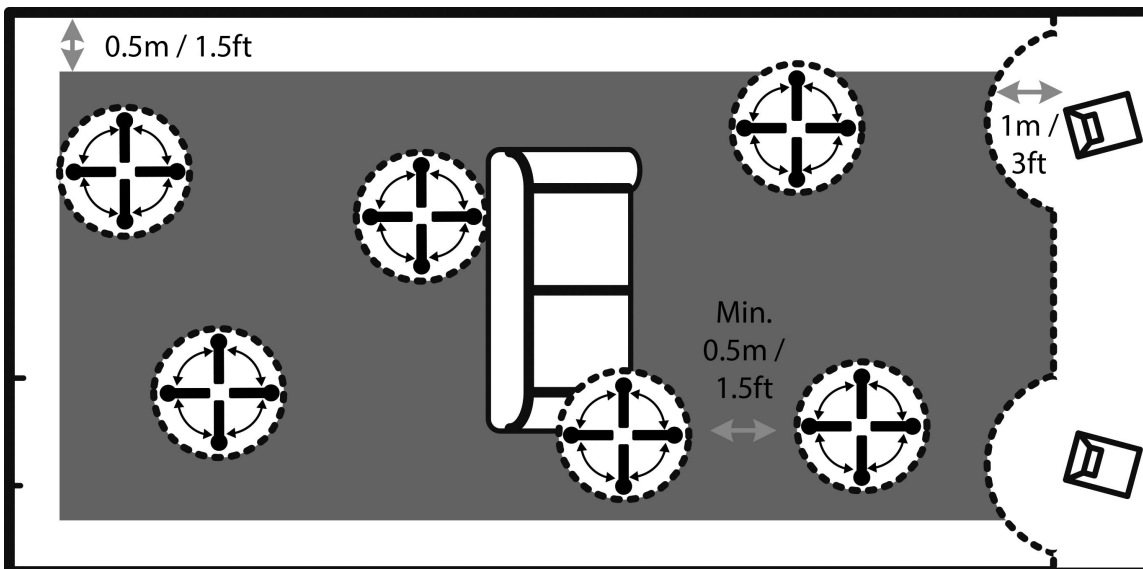
These are the rules of thumb when measuring the room:

- the microphone should be in random and varying positions, heights, and orientations. Point it up/down/sideways, the more random positions the better.
- the measurements should cover the entire room, not only your listening area.
- do not take measurements behind plants, furniture, etc.



Side view of room

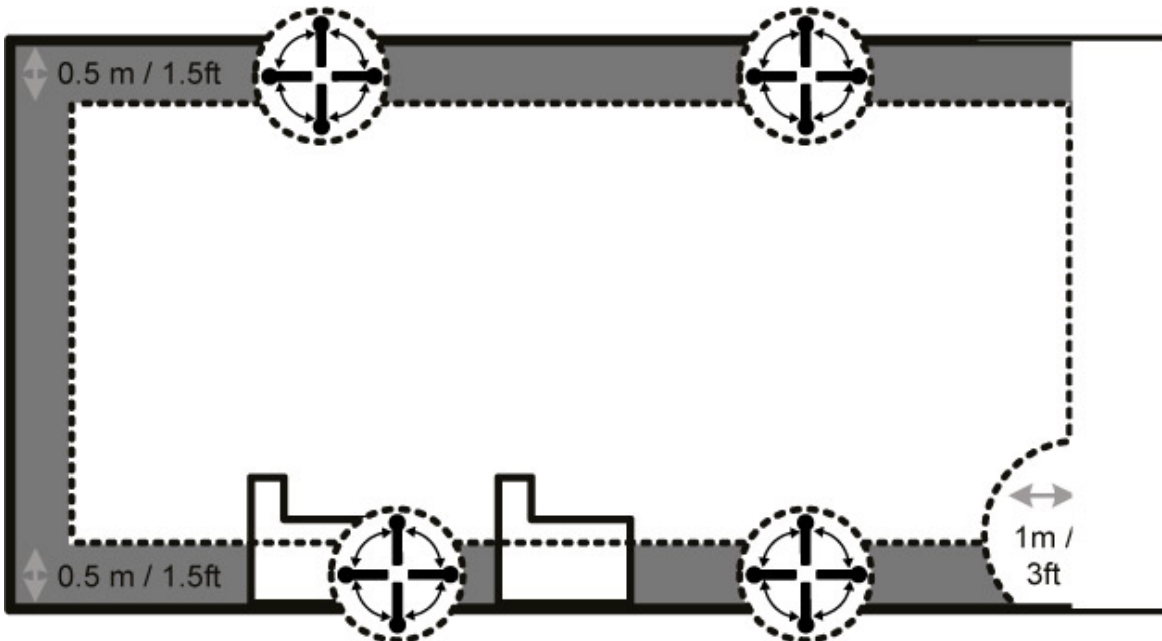
- the microphone should not be closer than 0.5m/1.5ft from the floor, ceiling, and walls.
- the microphone should be at least 1m/3ft from the front of the loudspeakers.
- there should be at least 50cm/1.5ft between each measurement.
- do not take symmetrical measurements in the room.



Top view of room

Room Measurements Above 90% RoomKnowledge

When RoomKnowledge has reached 90%, you can decide to add room measurements or do it later. We recommend taking a couple of measurements within 50cm/1.5ft of the walls and ceiling when above 90% RoomKnowledge.



To fully optimize RoomPerfect™'s 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.

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 make a backup of the MP-50 settings and calibration after having performed a RoomPerfect™ calibration (see Manage Software in the Setup section).

Video Setup

The Video Setup menu allows you to register the video system settings for the MP-50's video inputs and outputs, which in turn dictates which video formats can be shown on the screen when these inputs and outputs are activated.

This section is for expert users only. With a single TV/Projector these settings are set automatically. As a rule of thumb, don't make changes if you are not familiar with the consequences, and always make a backup first!

Video Output

This menu manages the default and preferred setting for all video outputs.

Set the main video output of your device

Here you select which of the HDMI output connectors is your main output – other outputs can be set to 'follow main'.

Preferred resolution

Per output you can specify what video resolution is best for your TV / projector. If 'None' is selected the TV / projector will communicate with the source playing and ask for the maximum resolution supported.

Default Video source

Here you set the output to be 'independent' of other outputs, 'follow main' or fixed at a given HDMI input.

HDMI Audio out

Here you select 'Pass-through' to have standard audio output or not. Alternatively, you can select the output for connecting to the Zone B.

Video Input

In this menu, you can change what is advertised to the sources (EDID / Extended Display Identification Data) on the HDMI inputs.

HDMI 1-8

This section tells the source what video resolutions the total system support:

- Always - we always advertise support for the given resolution, regardless of what the TVs on all the outputs support.
- Never - we never advertise support for the given resolution, regardless of what the TVs on all the outputs support.
- One - we advertise support for the given resolution, if one of the TVs on the outputs support the resolution.
- All - we advertise support for the given resolution, if all the TVs on the outputs support the resolution.

HDCP compatibility

Generally, this should only be changed if you experience problems. The default setting is HDCP2.2, but if there are sources that have difficulties with this, you can select one or more of the settings.

- HDCP 1.4 – we now only advertise HDCP 1.4 support.
- No DDC – there will be no communication on the DDC (Display Data Channel), so the source cannot read the EDID. This will also disable HDCP handshakes (High-Bandwidth Digital Content Protection)
- Sink – the MP-50 will look like a TV to the source. As some sources have very bad repeater support, they do not function properly with a processor like the MP-50, and this setting will bring the source to output a picture.

Audio Setup

Audio Processing

This menu allows you to manage the audio processing presets for DTS, AURO and Dolby.

Dynamic Range Control functions in general with raising the level of quiet sounds and lowering the level of the loud sounds. This is also known as Night Mode, but it works differently in the various formats, why you can set it up for each format.

Dolby Center Spread is dedicated Dolby function to spread the center channel dialogue into the left and right speakers to fit a very large screen.

Auro Strength sets the amount of generated signal in the postprocessing / up-mixing.

Auro Presets lets you select a channel configuration that best suits your speaker setup.

Voicing Setup

A voicing is an equalizer filter that can be activated to amplify or attenuate certain frequencies according to your personal preferences. This equalization is an addition to the RoomPerfect™ corrections.

Voicings can be edited, deleted, added, or loaded in the MP-50.

Editing and adding voicings

In the web interface, you can edit or add a voicing by combining up to eight filter sections. For each section, you can choose between parametric or high and low shelves as well as high and low-pass filters. Once the filter type is selected, you can insert a center frequency, Q, and gain. Then the filter, including the final voicing, is shown as a graph so that you can immediately see the result.

We recommend you create voicings using the web interface, but they can be created using the remote control.

Zone B Setup

Here you can adjust the Zone B volume and default settings.

Zone B refers to an adjacent space, which is linked to the main setup. An example could be a bar area outside the listening area, where you want to play the stereo sound track of cinema.

System Configuration

General Setup

Power management

- Choose the standby mode
 - Deep sleep – The MP-50 can only be turned on via the front on/off switch (Default)
 - Network Stand-By - The MP-50 can also be turned on via web interface, Remote App. or a control system.
- Choose the delay before auto off (minutes). Setting it to 0 will disable the feature.

Default volume settings

- Set a max volume for the device (dB). This setting is a safety precaution.
- Set startup volume
 - Use last volume – Sets the volume to be the same as when the MP-50 was turned off.
 - Use fixed volume – Sets the default volume at startup.

HDMI CEC settings

Set enable CEC and use ARC channel as audio input to Off or On.

Display timeout

Set seconds before turning off the display.

Password protection

Set a required password to enter the web setup section.

Show bypass

Set the RoomPerfect™ bypass mode for your device to Off or On.

Enable front IR sensor

Turn the MP-50's IR sensor Off or On. This function is useful if you are using a home automation system and other remotes are using the same IR codes as the MP-50 remote.

OSD info level

Choose the level of information to show on the OSD.

Trigger In Setup

Allows you to set up the system so that it can be switched on via an external device in the system.

Trigger Out Setup

Allows you to set up the system so that the MP-50 can control other devices in the system.

Off – No action

Source – When the preset source for any zone is selected, it will trigger. Use source setup menu to associate the trigger with a source.

Source A – When the preset source for Zone A/Main zone is selected, it will trigger.

Source B - When the preset source for Zone B is selected, it will trigger.

Power A – When Zone A/Main Zone is On, it will trigger

Power B - When Zone B is On, it will trigger

Power any - When any Zone is On, it will trigger

Network Configuration

Change the network mode to manual or automatic.

For more info, see the Network Setup chapter.

Streaming Setup

The MP-50 can access music files on your local network or on a storage device connected to the USB inputs, and you can stream music to the MP-50 from your mobile devices.

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

- Streaming players can control volume – set to Off or On
- Streaming players can change input source – set to Off or On
- Streaming players can power on the device from standby mode – set to Off or On

Streaming Playback

The setup of the streaming player itself is done in the interface positioned in the HOME section.

UPnP

This function allows you to select and play music files in UPnP enabled libraries on your local network. The button ‘.’ brings you up in the menu structure of your library. 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

This function allows you to select and play music files on attached USB devices. The button ‘.’ brings you up in the menu structure of your library. It opens when an USB device is detected in any of the inputs.

vTuner

This function allows you to access 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 4 ‘select save-position’. The saved stations can as presets be assigned to a SOURCE for direct selection, if you as ‘audio input’ select ‘Internal Player’ (see menu: SETUP/SOURCE).

Airplay

When the MP-50 is connected to your local network, it will automatically be available from your Airplay enabled devices.

Spotify Connect

When the MP-50 is connected to your local network, it will automatically be available from your Spotify Connect enabled devices (requires a Spotify Premium account)

Manage Software

From this main menu, you can access MP-50 software information, backup, restore, etc.

Software Information

Show reference information about the current software in the MP-50.

Network Information

Show reference information about the network status of the MP-50.

Backup

Make a complete system backup, including speaker setup and RoomPerfect™ measurements.

When the backup is complete, the MP-50 will go into standby mode.

Restore

Restore the system from a backup.

Factory Reset

Restore the system to the default factory settings.

Note: All user preference settings, system data, and RoomPerfect™ data are lost when the MP-50 is restored to the default settings.

Software Update

Update from Remote Files

When connected to the Internet, the MP-50 can automatically download and update the software.

Update from Local Files

Via web interface:

1. Click Browse to find a file stored on your computer.
2. Press Upload to upload it to the MP-50.
3. Click Process to initialize the update.

Or:

1. Upload the update to a FAT 32 formatted USB pen drive.
2. Make sure you 'eject' the pen drive correctly before removing it from your PC/MAC
3. Insert the pen drive into the MP-50.
4. Select the file in the menu and click Process.

Update Via OSD Interface

1. Upload the update to a FAT 32 formatted pen drive.
2. Insert the pen drive into the MP-50.
3. Select the file in the menu and click OK on the remote control.

Note: System settings and RoomPerfect™ data remain intact during software updates.

Troubleshooting

RoomPerfect™

The calibration microphone is very sensitive and may pick up unwanted noise, including subsonic signals and background noise, which disturbs the measurements. If the signal is disturbed, it will take longer for the system to make a correct measurement.

A measurement that has been disturbed by noise but completed will always be correct; it is not necessary to redo it. If the measurement has stopped due to an error, one of the error messages below will be shown.

Error Messages

No microphone connected

No microphone is connected or the microphone cable is not working. Check that the microphone cable is connected to the microphone socket on the back panel. If the problem continues, test the microphone cable by connecting the microphone directly to the microphone socket and select Retry.

If the microphone is detected, replace the microphone cable and retry the measurement.

Fault – No signal

This error message can arise due to a signal classification of no sound. This happens if the sound volume has been muted or a cable is disconnected.

- Check the sound volume.
- Check all cable connections, including interconnects, speakers, amplifiers, etc.
- Check the measuring signal volume.

If none of these measures solve the error, request a replacement microphone from Lyngdorf Audio.

Fault – Signal clipping

Either the incoming signal has been classified as too loud, resulting in clipping or distortion, or a loud noise in the immediate environment has corrupted the measurement results. If a loud noise has in fact occurred, such as the sound of a closing door, reduce noise levels inside and in the immediate vicinity of the room and repeat the measurement. If no loud noise has occurred, reduce the volume of the signal and repeat the measurement.

Fault – Low signal

This error message is displayed when the measurement has lasted more than 5 minutes for the low-frequency signal or more than 2 minutes for the high-frequency signal. This happens most often when using a low-level measuring signal compared to the background noise in the listening environment, which results in prolonged measuring times. Raise the measuring signal volume or reduce the noise in the environment before continuing with the measurement.

Can't Turn On Via LAN or Control System

- The MP-50 needs to be set to Network mode to be able to turn on via a control system. It will not turn on when in Deep Sleep. This is set up in Device Management -> Power.

Retrieving and Sending an Error Log

To retrieve an error log, you need to access the MP-50 via your browser. Here you can download a text file and email it to your Lyngdorf Audio representative.

3D Compatibility Not Detected

If the MP-50 isn't fully booted, a Blu-ray player will not be able to detect its 3D compatibility. Restart the player to fix the problem.

Remote Control Doesn't Work

The remote control is paired to the MP-50 at the factory; you need to pair it again only if you have a new MP-50 or remote. To pair the RF remote control to a MP-50:

1. Turn on the MP-50.
2. Hold down Play and OK until the remote control's green LED flashes.
3. Point the remote control at the MP-50 and hold it within 30cm / 1 foot of the front panel; when the green LED stops blinking, the remote is connected via Zigbee.
4. The remote will be paired to the MP-50.

To switch the remote from RF to IR mode, hold down OK and 1. The LED will flash red twice.

To switch the remote back to RF mode, hold down OK and 2. The LED will flash green twice.

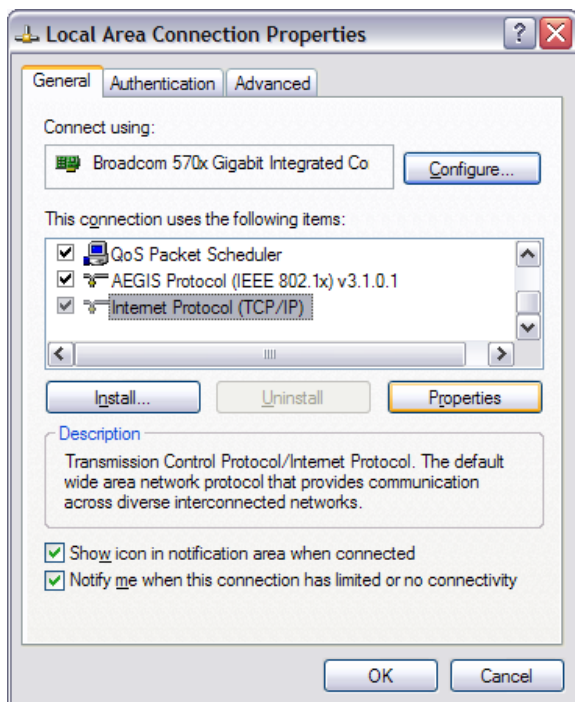
To reset the pairing of the remote control, press Back and OK until the red LED flashes twice.

Network Setup

Connecting to MP-50 with a Network Cable

It is possible to get access to the MP-50's web interface via a direct cable connection between the MP-50 and a computer, or a connection via a hub or switch.

If you have a direct cable connection to a laptop (with no switch or router between the two) the network cable must be a crossover type. Furthermore, the Mode option in the Network Setup menu must be set to Manual IP. Finally, you must manually set an IP address on the computer you intend to use for setting up the MP-50.



Set Up a Fixed IP Address in Windows 7

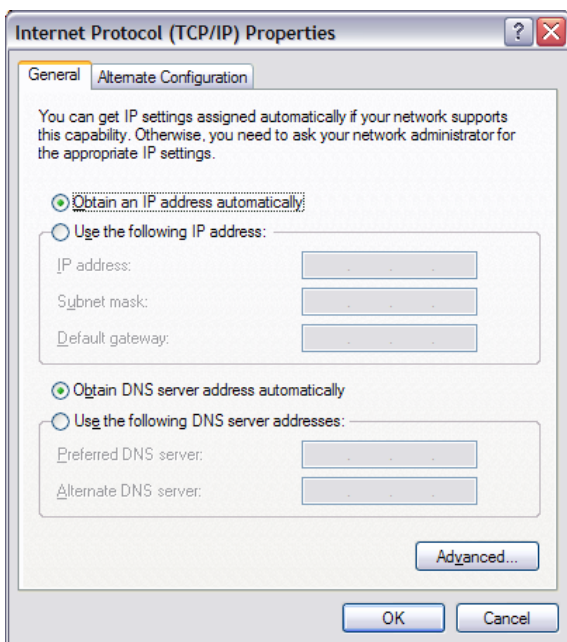
- Click Start / Control Panel / Network Connections to find the network connection that represents your connection to the Internet. Most often, this is labeled simply Local Area Connection.
- Right-click the connection and select Properties.
- Click Internet Protocol (TCP/IP) in the list (you may have to scroll down the list to find it)
- Click Properties.
- Most default configurations will have both Obtain an IP address and Obtain DNS server address automatically selected by default.
- Click Use the following IP address and enter the following:

IP address: 192.168.1.2

Subnet mask: 255.255.255.0

Default gateway: 192.168.1.1

Click OK to close the configuration windows, and you should now be able to access the MP-50 via your Internet browser.



Set Up a Fixed IP Address in Windows Vista or Windows 10

- In Windows Vista, click Start / Control Panel / Select Network and Internet / Network and Sharing Center.
- In Windows 10, right-click Start, then select Control Panel. Select Network and Internet / Network and Sharing Center.
- Click Manage Network Connections in the list of tasks.
- Right-click your local area connection and click Properties.
- Select Internet Protocol (TCP/IP) from the list
- Click the Properties button.

Click Use the Following IP address and enter the following:

IP address: 192.168.1.2

Subnet mask: 255.255.255.0

Default gateway: 192.168.1.1

Click OK to close the configuration windows, and you should now be able to access the MP-50 via your Internet browser.

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