

Grimm | **AUDIO**

MU2 manual



MU2 Software Manual, to be read next to
the MU2 Hardware Manual

Please read this manual before operating the unit!

For firmware version v0.9.6

Table of Contents

1 Introduction.....	3
Scope.....	3
User Interface description.....	4
Support mode.....	5
2 Roon Labs setup.....	6
Extension to enable track information on the MU2 display.....	6
Volume limit settings.....	7
Device Setup.....	7
Background analysis speed.....	9
Updates of Roon software.....	10
Known issues with Roon on the MU2.....	10
USB storage.....	11
Network storage.....	12
Internal storage.....	13
How to add the internal storage to Roon.....	15
Roon database access and reset.....	15
3 Main knob control.....	16
Music View.....	16
Source selection.....	19
Menu View.....	21
4 GRUI MU2 Web Control.....	30
Connecting to the GRUI.....	30
Main page.....	31
MU2 settings.....	32

1 Introduction

Thank you for purchasing the Grimm Audio MU2 streaming DAC and media player. It is designed to be the best sounding music player on the market while at the same time blending seamlessly into your daily music playing routine. Its main source is a Roon Server server and Roon End Point, that offer playback from local files, network files and online streams from Tidal, Qobuz and KKBOX. It is followed by our revolutionary '*Major*' Digital to Analog Converter and dedicated FPGA processor board, with the highest possible quality in analog and digital signal processing and de-jittering. Apart from Roon, three digital inputs can be selected as source for the *Major* DAC. After the DAC an analog pre amp with relay based analog volume control is found, that also offers source selection of two analog sources. The output can be switched between line and headphone.

The amount of innovation, work and knowledge that went into this project can hardly be overestimated. All this effort resulted in the elegant MU2 'box' of minimalistic design that humbly steps out of the way for the music. We are grateful that we were allowed to develop this gem and wish you many joyful hours of listening pleasure.

The Grimm Audio Team
info@grimmaudio.com

Scope

In this manual you will find all information related to the software of your MU2. Since this software is regularly updated, we decided to offer this MU2 software manual as download only. Your MU2 was shipped with a printed MU2 hardware manual. Please read it carefully for your own safety. You can also download a pdf version of the MU2 hardware manual from the MU2 page of our web site grimmaudio.com.

User Interface description



The MU2 has 3 main user interface parts, the main knob on the top, the display on the front and the MU2 activity LED in the 'i' of the Grimm logo on the front. On the back are the connections and the power button, please read the hardware manual for more information.

With the main knob you can change the volume and source, and browse through the menu. Please see chapter 3 Main knob control for more information.

The display shows information about the system, depending on its state:

- System Off: display is black, no information.
- System in Stand-by: display is black, no information.
- System is booting: boot animation is running, after booting the welcome screen is shown until the software is ready.
- System On: this state has various menus where information is shown and settings can be adjusted. Note that depending on user settings the display can dim or even turn off automatically when no user interaction is present for a few seconds. So in the System On state, the display can in certain cases also be black.
- System shutting down: display is showing shutdown animation, with dimmed backlight. It goes to black when the system is fully shut down.
- System in support mode: display is showing an animation of 3 blue squares.
- System updating: display is showing an animation of 3 green squares.

The MU2 activity led shows the current activity of the system. The table below shows the modes.

Off	MU2 is off.
On	MU2 is on or booting. ²
Fading slowly	MU2 is in stand-by mode.
Fading quickly	MU2 is updating. ¹

¹ The system will only update when the user has manually activated the update. See chapter Settings menu[6/7]: Software Version and Update.

² When the system is booting, the display will show an animation.

Support mode

The MU2 has a support mode feature, via this mode Grimm Audio staff is able to connect to your MU2 via the internet to check and if possible resolve software issues with your device. Grimm Audio may ask you to activate support mode, in chapter Settings menu[7/7]: Support you can find how to do this.

2 Roon Labs setup

Grimm Audio selected Roon Labs for the music player user interface for file and stream playback on the MU2 (an alternative UI and engine will be added later). In our opinion Roon offers the best High-End user experience to date, a real must have. Both Roon Server and Roon End Point are pre-installed, so no other computer is needed. Please note that Roon Labs is a paid subscription for which you need to enter your account details in the Roon app. Roon Lab supports Tidal and Qobuz lossless music streaming services. These are separately paid subscriptions. Please enter your account details of these services via the Roon interface (app).

Operating the Roon system in the MU2 is identical to that of any other Roon equipped system. First you need to install the Roon remote control software on a tablet, smart phone, PC or Mac to get access to the Roon Server in the MU2. Please visit the app store of your OS manufacturer, or use this link: <https://roonlabs.com/downloads.html>. For general operational guide lines of the user interface, we refer you to the Roon Labs documentation: <https://help.roonlabs.com>. Within Roon various signal processing options (like volume control) are available, but we strongly recommend to use the MU2 volume control instead of the Roon offerings, and disable any other type of processing to achieve the highest sound quality level. Roon is a capable multi room system. If you like, you can also use the Roon Server in the MU2 to stream music to other Roon Endpoints in your network (for instance a system in the bedroom). Of course, the volume control, de-jittering and analog signal processing qualities of the MU2 can only be enjoyed from the outputs on the MU2 itself.

The MU2 can play all file formats that Roon supports, such as wav and flac, and has native support of PCM formats up to 8x the base rate (8FS or "DXD") and of DSD formats up to DSD256.

Note: the MU2 passively cooled computer system supports Roon libraries containing up to approximately 100k tracks or 10k albums.

Extension to enable track information on the MU2 display

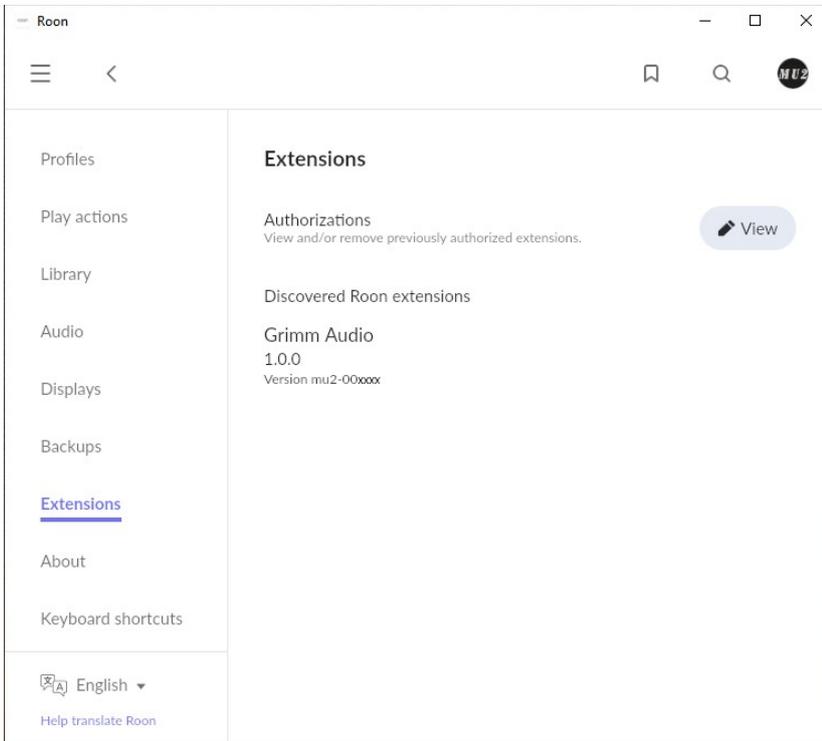
Note: This extension is enabled at the factory before shipping the MU2. In case the display shows "Waiting for Extension", it must be re-activated following the steps below.

To show the song that currently plays on the MU1 display and enable the MU1 software to communicate with the Roon Server, the Grimm Audio 'Roon Extension' must be activated.

Please connect a tablet, smart phone, PC or Mac to the same network as the MU2 and install the 'Roon' remote control software (not 'Roon Server'): <https://roonlabs.com/downloads.html>. Make sure all other Roon Servers in the network are turned off. Next, please follow these steps:

- Switch on the MU2.

- Start Roon on the tablet or PC/Mac software, wait until the MU2 pops up as a device and select it.
- Log in with your Roon account.
- Go to the settings menu and select the tab 'Extensions'.
- Add the Grimm Audio extension to your MU2 by clicking the Enable button in the menu. The extension will contain a part of the serial number as shown in the image below.



Volume control of the analog outputs should now work via both the Roon app and the MU2 main control. Additionally you will see information about the currently playing track in the display and a progress bar of the running track.

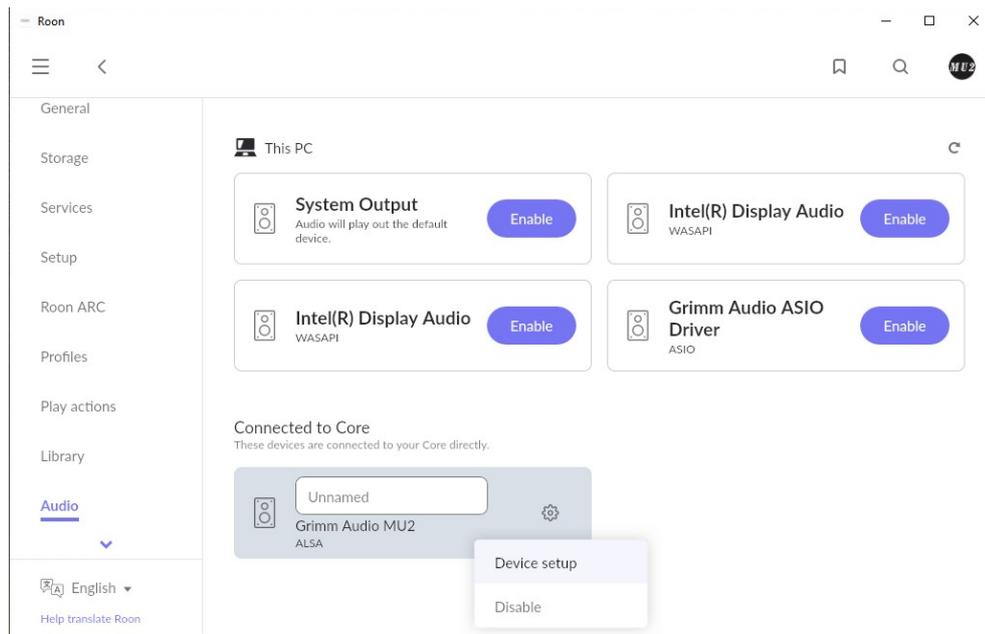
Volume limit settings

We recommend setting a comfort limit for the Roon fader in the device setup of Roon so you cannot accidentally set the volume very loud by sliding the volume bar too far to the right. In case you do like to play louder than the limit, you can still press the + button in the Roon interface to further increase the volume of the system. To set the comfort limit, please click the volume button in the bottom right corner of Roon and then press the cog wheel to enter the Zone settings. Here you press "Volume limits" and set it to your preferred limit.

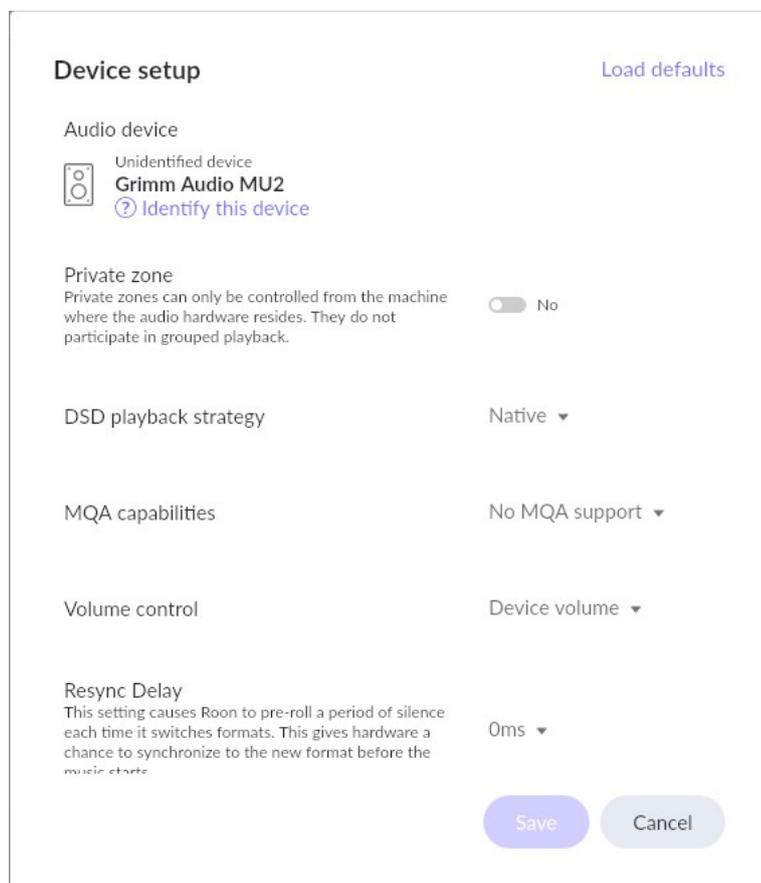
Device Setup

Roon offers various options for connected devices. We walk you through the preferred (or even required) settings for the MU2. (Most of these can be restored by pressing the "Load

Defaults” button in the top right corner of ‘Device Setup’ in case needed). To enter Device Setup, browse to the Audio tab of the Roon Settings, tap the ‘cog-wheel’ configuration logo on the right of the ‘MU2’ device and select ‘Device Setup’, as shown in the image below.



By clicking Device setup you get the following window:



In Device Setup it is recommended to keep the default settings, if you have problems you might want to press the ‘Load defaults’ button in the top right corner.

You can change settings here but some settings will give problems, like changing 'Volume control'. It should always be set to "Device volume".

Other settings in Device Setup are default as following:
'DSD playback strategy' to "Native" and leave DoP off.

'MQA capabilities' defaults to 'No MQA support' and that is fine. When playing an MQA stream, the 'unfolds' will be performed by Roon and in 'No MQA support' mode Roon will not add the MQA metadata into the audio.

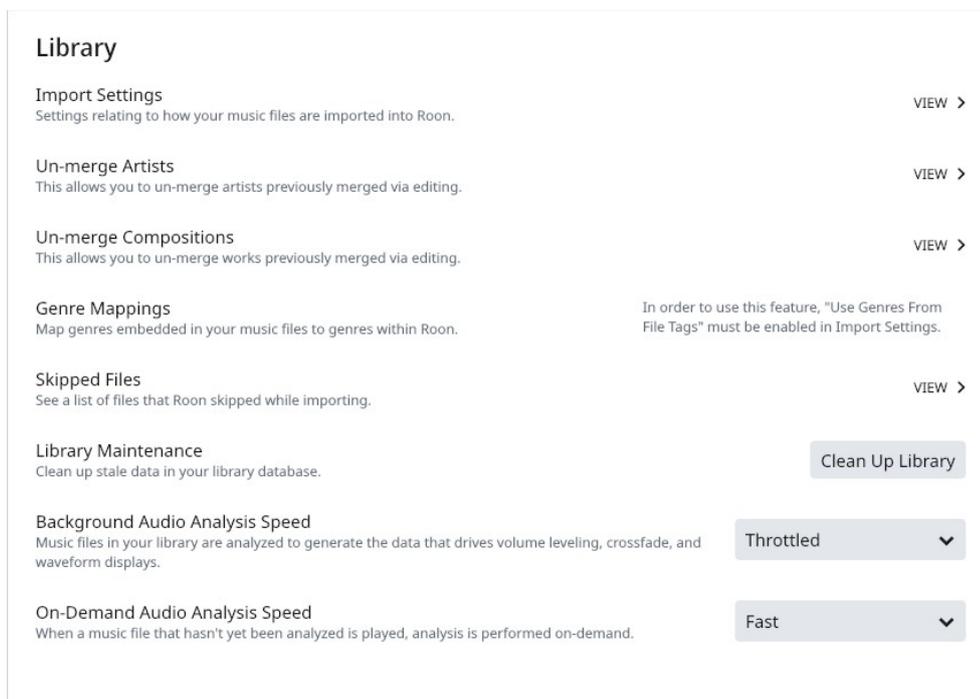
'Resync Delay' is default at 0 ms (since the MU2 is clock master).

In the 'Advanced' part of the Device setup window (click "Show advanced") you can check whether the max sample rate (PCM) is set to "up to 384kHz" and the max sample rate (DSD) is set to "up to DSD256".

'Clock master priority' should be on "Default", 'Enable MQA core decoder' should be set to "Yes" and 'Buffer size' to "Default".

Background analysis speed

In the Library page of the Settings menu Roon offers several options for the 'Background Audio Analysis Speed'. We recommend to set this to "Throttled" and not to one of the "Fast" options. This makes sure most of the processing power of the CPU is dedicated to audio playback. You may also set it to "Off", Roon will then calculate the UI waveform graphic on the fly when the file is played.



The screenshot shows the 'Library' settings page in Roon. It contains several sections with options and their current values:

- Import Settings**: Settings relating to how your music files are imported into Roon. [VIEW >](#)
- Un-merge Artists**: This allows you to un-merge artists previously merged via editing. [VIEW >](#)
- Un-merge Compositions**: This allows you to un-merge works previously merged via editing. [VIEW >](#)
- Genre Mappings**: Map genres embedded in your music files to genres within Roon. In order to use this feature, "Use Genres From File Tags" must be enabled in Import Settings.
- Skipped Files**: See a list of files that Roon skipped while importing. [VIEW >](#)
- Library Maintenance**: Clean up stale data in your library database. [Clean Up Library](#)
- Background Audio Analysis Speed**: Music files in your library are analyzed to generate the data that drives volume leveling, crossfade, and waveform displays. [Throttled](#) (dropdown arrow)
- On-Demand Audio Analysis Speed**: When a music file that hasn't yet been analyzed is played, analysis is performed on-demand. [Fast](#) (dropdown arrow)

Updates of Roon software

Roon Labs offers frequent updates to both the Roon Server in the MU2 and the Roon Remote app in your tablet or smart phone. Updates on your phone/tablet are usually installed automatically. When a Roon Server update is available, the Roon Remote app will inform you about that. You are permitted to start a Roon Server update process in the MU2 from the Roon Remote phone/tablet app, but we are not liable for the impact of problems that may occur from Roon updates. Of course we will offer support to help you solve the problem, where possible.

Known issues with Roon on the MU2

#1 Hampered playback when analyzing a large catalog.

When you add a folder with lots of albums, Roon will analyze the files, download artwork etc. It will also do an analysis of the audio data to store waveforms that are shown in the user interface and to store the average loudness of the track for loudness normalization use. During the initial setup, the Roon processing can cause the system to be less responsive. Although possible, we recommend to not use the system for music playback while Roon runs this analysis for the first time on a large set of albums. If you let it run overnight, it is usually finished the next day.

When you add a few albums only, playback is not affected. Nevertheless we recommend to use the "Throttled" mode for the analysis to keep the CPU load low. This can be selected in the Roon settings, see chapter "Background analysis speed". Consult the Roon manual for more information.

#2 Soft glitches in DSD album playback.

Please mark that when playing albums in DSD format, the end and start of the files are not reproduced 100% gapless by design, which means that a soft glitch can be heard at the start of a new track. This glitch is in the master files and cannot be solved in the MU2 or Roon software. Also, a short moment after playback of a DSD file has stopped, Roon will switch to a 'silent' PCM stream and this may also cause a soft glitch.

#3 Adding the root system folder to Roon.

When adding the root directory ("/") or a Roon backup folder in the music storage settings of Roon, problems may occur. Roon tries to index the OS file system making it slow and in some cases Roon might even crash. Instead of adding the root directory, please only add the music folders as explained in the next chapter.

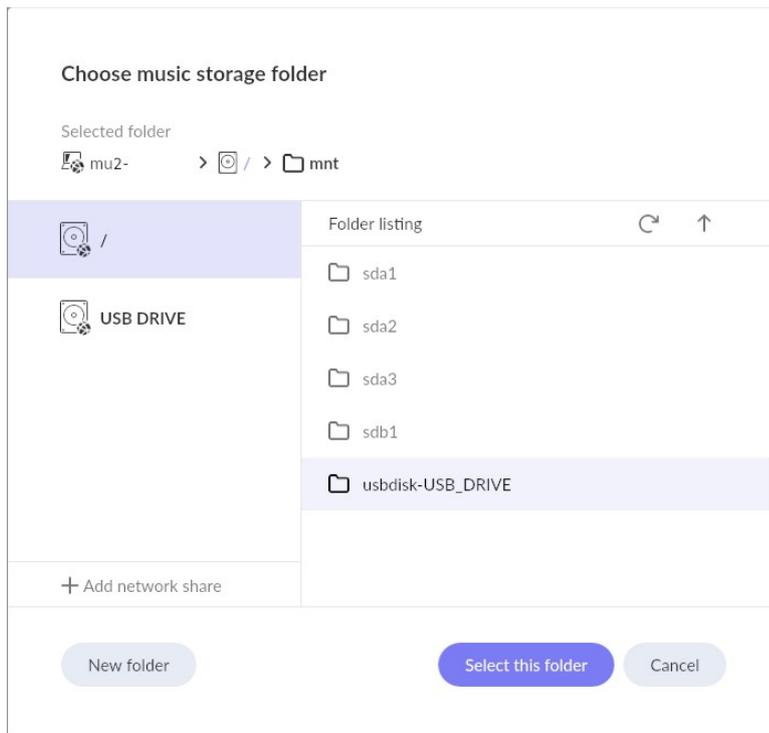
If you did add the root directory it will show up in the Roon storage settings as following:



USB storage

On the back of the MU2 is one USB port which may be used for connecting an external USB drive (flash drive, SSD or HDD) extending the disk space of the MU2 system. You may play music files from this drive. The MU2 supports the following file systems: **FAT32, FAT16, NTFS, HFS+, exFAT, EXT2** and **EXT4**. When a USB device is plugged in, it will automatically be mounted in the system. It is not necessary to 'safely remove' the USB device from the system, since USB drives are mounted in 'read only mode' (the device is unmounted automatically when you unplug it). This also means you cannot use a USB drive to make Roon backups, nor add or delete music from these disks through Roon or the network.

The mounted folder can be found through the Roon storage settings. Go to the *Roon Settings* → *Storage* and press the button "+ Add Folder". The following screen will show up:



The USB disk should appear in the menu on the left. The name of the usb disk is shown. If you don't see it here, go to the root directory "/" and open "mnt". There you will find your usb drive with the preface "usbdisk-". Select this folder to add it.

Network storage

In Roon you can add a network drive or NAS for music storage and backup location. Roon has a knowledge base article about this topic which you can find [here](#).

Depending on your router settings it is possible that the hostname of your NAS is not resolved in the network. When this is the case you can make use of the MU2's name resolve client by adding *.local* to the hostname of your NAS as is shown below.

Below you find an example for a NAS with the hostname *wdmycloud* and share *music*.

The image displays two side-by-side screenshots of the 'Add network share' dialog in Roon. Both screenshots show the same form with the following fields: 'Network share location', 'Username', 'Password', and 'Workgroup'. Each field has a placeholder text 'only if required' below it. The 'Network share location' field contains the text '\\wdmycloud\music' in the left screenshot and '\\wdmycloud.local\music' in the right screenshot, with '.local' circled in orange. Below the form, there are two buttons: 'Add network share' and 'Cancel'. In the left screenshot, a red error message box is visible at the bottom, stating 'Could not connect to share: Host not found'. In the right screenshot, the 'Add network share' button is highlighted in blue, indicating a successful connection.

Internal storage

The MU2 has an optional internal disk for music files and Roon backups. Adding music to the folders of this drive is done via the network, how to do this is described below for Windows and Mac-OS.

In the MU2 music disk there are two static folders: Music and Backup. Music added to the Music folder is added to the Roon Storage as 'Music folder'. Use the backup folder for making Roon backups.

Music Folder

Watching for new files in real time

Note: Always use a wired connection between your computer and the network to copy music to the internal disk, doing this via a Wireless connection is slow. Through a wired connection you can expect transfer rates of about 50MB/s.

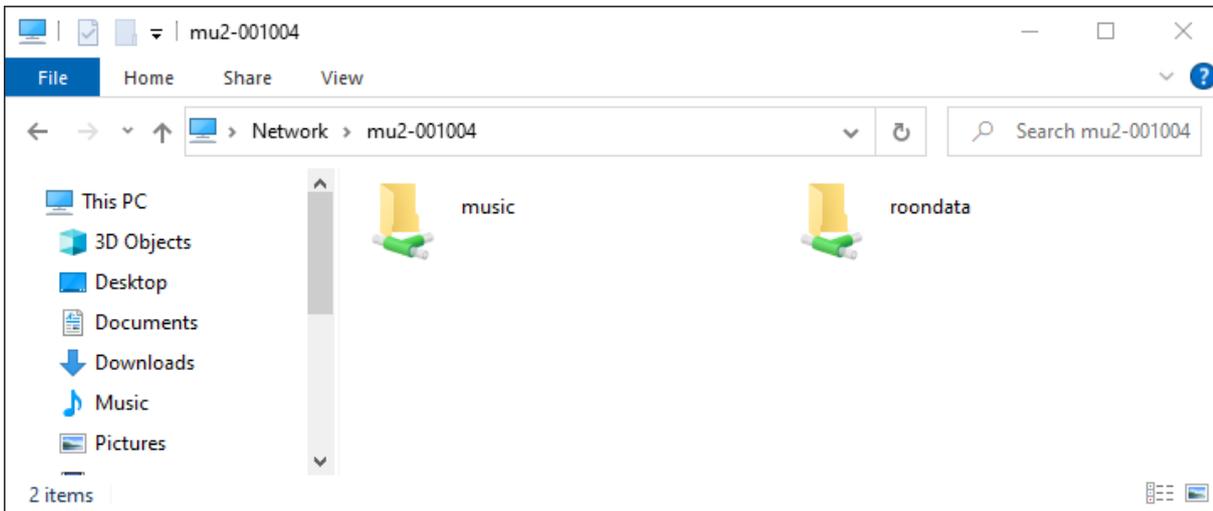
First of all, open the help page of the MU2 menu (see chapter Settings menu[2/7]: Help) and note the hostname and IP-address.

Windows users:

Note: Not all Windows computers can use the hostname for finding an internal disk in the network. This is because "mDNS" is not natively supported by Windows. However, on many Windows computers software has been installed that added support for this protocol and therefore we advice to first try using the hostname. If this does not work, use the MU2 IP address.

1. Open the File Explorer (this is done by opening a random folder).
2. Enter '\\hostname' in the address bar as shown in the image below.
 - If the hostname does not work, try adding '.local' to the hostname.

Note: If you do not have "mDNS" this doesn't work. Use the ip-address: '\\ip-address'

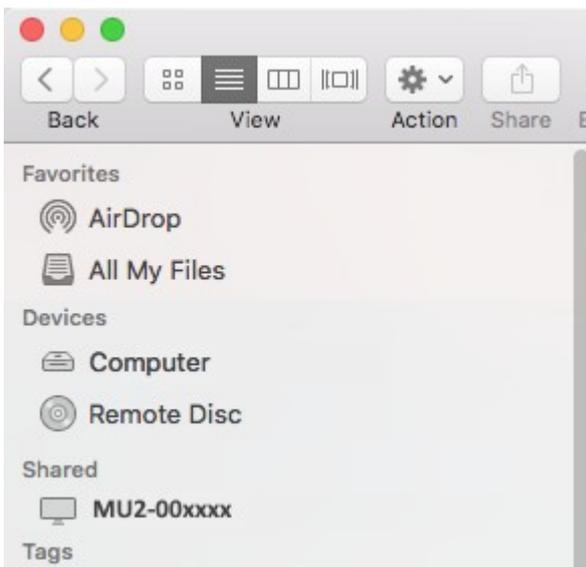


The internal disk is now present in the File Explorer under 'music'. There are two folders here: Music and Backup. Use the Music disk to add, delete and move music on the MU2 internal disk from your Windows computer.

Tip: Make a shortcut to this folder so you can easily find it instead of typing the hostname.

Mac users:

The shared folder can be found in the Finder, in the left hand column under "Shared".



After selecting this folder, you can add, delete and move music here from your Mac. Please mind to 'eject' the mounted folder before disconnecting from the network (for instance with a laptop).

If the MU2 does not show up in the Shared section, press \mathbb{A} - K to open the Connect to Server window. Enter the *hostname* and press Connect. The hostname of your MU2 is indicated on the second page of the MU2 menu, see chapter Settings menu[2/7]: Help of this manual. Connect as "guest" to the Music share folder. In the unlikely event that connecting to the

hostname does not work, please enter the IP address of your MU2, which is found on the same menu page of the MU2.

Note: On the internal disk you will find a directory lost+found, you can ignore this folder.

Tip: After mounting you can make a backup of music that is stored on the MU2 internal drive via your Windows or Mac computer by using your favorite backup application.

On the internal drive you can find the music share and the roondata share. In the music share you will see the Music folder and the Backup folder. Use the Music folder to add, delete and move music on the MU2 internal disk from your Mac.

How to add the internal storage to Roon

The Music folder within the music share will be added to the Roon storage automatically as "Music Folder" in the Roon storage settings. Please make sure you do not add the Roon Backup folder to the music storage in the Roon settings.

Tip: Roon will automatically append music that you later add to your music folder

Roon database access and reset

In case you encounter a problem with the Roon software and consult with Roon Support, they may ask you to view, copy, rename or reset your Roon database. The database folder contains all settings, log files and database items. The MU2 mounts this folder in the network under the share name "roondata", and it is password protected to prevent accidentally resetting the database. The credentials are as follows:

Username: mu2-user; Password: mu2-pass.

How to mount this internal disk in your PC or Mac is explained in the chapter Internal storage above, use the mount name "roondata" instead of "music".

In case you need to 'reset' the Roon database to solve a problem, the MU2 (GRUI) web interface offers a convenient 'Roon database reset' button. This button should be used with care, and only after a Roon Labs or Grimm Audio support engineer instructs you to use it. More information about the GRUI and the Roon database reset button can be found in chapter GRUI MU2 Web Control.

3 Main knob control

This chapter describes the user menus and settings of the MU2 that you can access using the main knob. The next chapter describes how to control these settings via the 'GRUI' web interface.

Music View

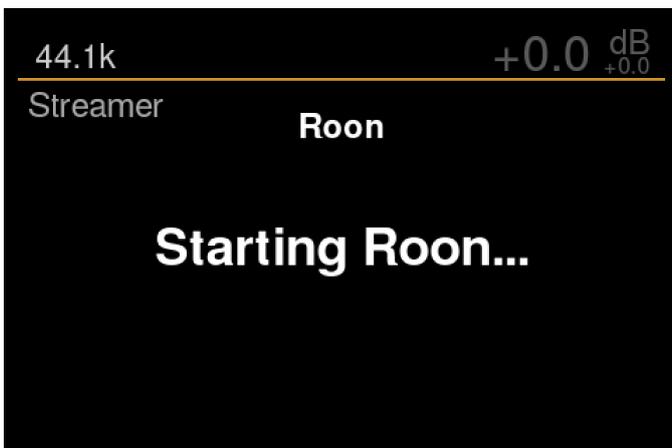
The music view is the default view, the MU2 will boot up in this view.

Function of the main control knob:

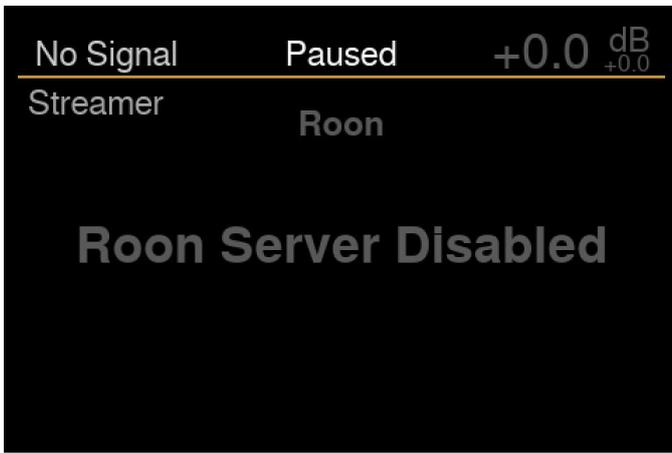
- Turn counter-clockwise for lowering the volume.
- Turn clockwise for increasing the volume.
- A short press pauses or starts Roon playback or mutes the sound with other sources.
- Two short presses ("double click") toggle the MU2 between main out and headphone out playback. When in headphone mode, 'Headphones' is indicated on the display.
- A long press brings you into the settings menu.
- Press and turn selects the input.

A short press is shorter than 2 seconds, a long press is longer than 2 seconds.

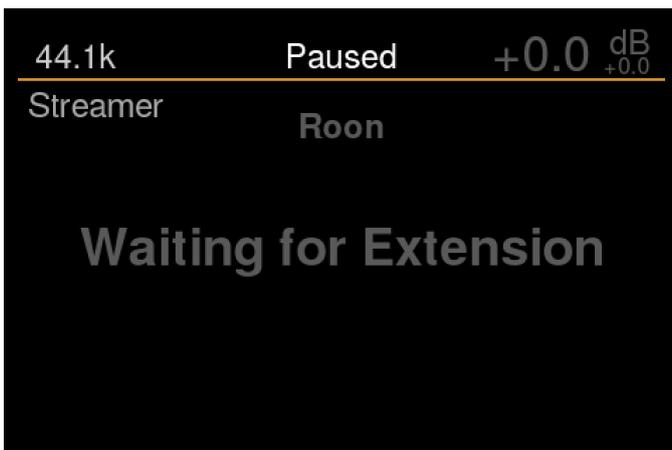
Below is an image of the screen you get when the MU2 is fully booted but still waiting on Roon to start up.



You may disable Roon on the MU2 via the web interface, for more information see Advanced under MU2 settings in the GRUI MU2 Web Control chapter of this manual. If disabled, the display will show the following:

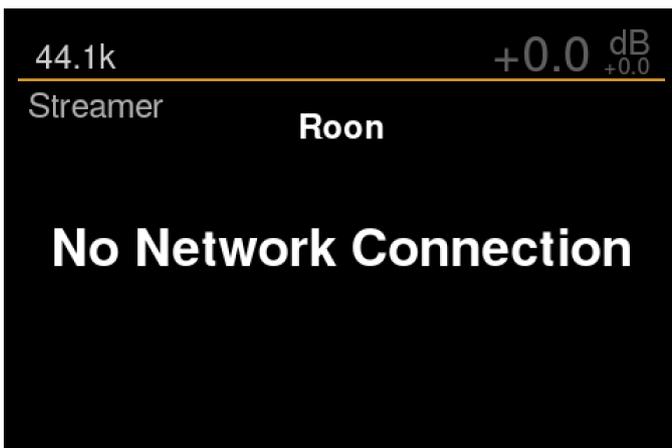


When Roon is booted you can connect your Roon Remote. The image below shows the screen you will get when Roon is booted but the Extension is not connected yet.

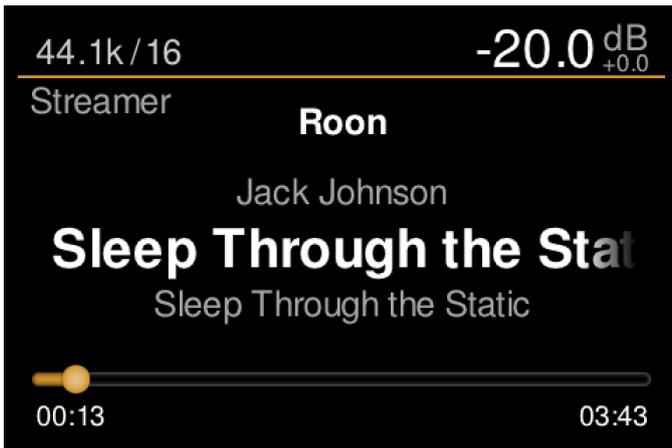


If Roon is running but there is no Roon remote (such as your iPad) connected yet, the message changes to "Extension Connected". If a Roon remote is present, the latest track info is displayed (see below). If none of these happen, the Extension is not activated, Please read the chapter Extension to enable track information on the MU2 display.

During start-up, the MU2 waits for a network connection, it may take a few minutes before the MU2 is given a local IP address by the router. Until this happens you will see "No Network Connection" on the display.



When a Roon remote such as a tablet is connected to the MU2 Roon Server and music is playing, the track information and progress bar is shown as in the image below.



In Music View, the display offers the following information:

- Sample rate and format¹
- Current user set volume in dB
- Mismatch/offset volume in dB²
- Streamer service³
- Headphones (when active)
- Artist
- Song title
- Album name
- Progress bar
- Current time stamp
- Track length

¹ This is the indicated file or stream information by Roon.

² The offset shows the difference between the user set volume and the actual volume, for instance when source offsets are applied through the GRUI.

³ At the moment only Roon is supported.

When there is no audio playing and the queue is empty, the progress bar will not be shown.



When turning the MU2 main control knob, the volume changes and the track progress bar at the bottom is temporarily replaced by a bar that indicates the current volume setting. You will hear the relays of the analog volume control clicking inside the MU2 box when you change the volume.

Tip: You may disable the volume control of the MU2 via the GRUI.



Note that the user set volume indication in the top right corner has a max level of +8 dB which corresponds to “100” on the volume slider in the Roon app. You would normally never reach this level, it should only be used for music with very low average loudness. If the music has normal loudness, settings above 0 dB will lead to clipping in the MU2 output stage.

Source selection

By pressing, holding down and then rotating the main knob you enter the source selection menu. Here you can select sources. To leave this menu just release the main knob when the desired input is selected.

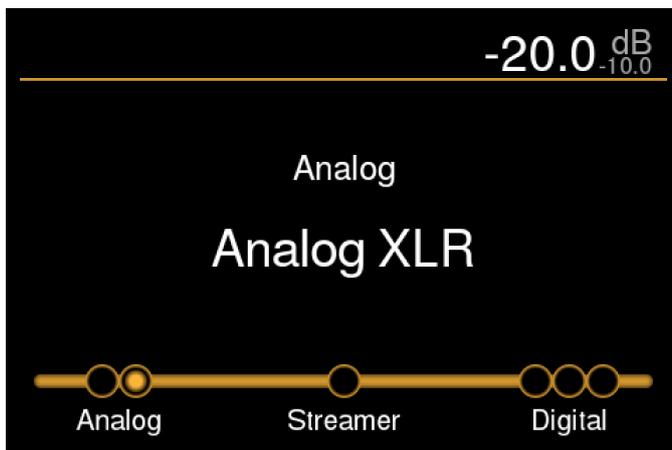
There are 3 source categories visible and each has one or more inputs⁴. The list below shows each category and their available inputs:

- Analog in:
 - Analog XLR

- Analog RCA
- Streamer:
 - Roon
- Digital in:
 - AES XLR
 - AES RCA
 - Toslink

⁴You may disable each source through the GRUI, they will not show up when disabled.

By turning the main knob (while holding it down) the sources can be picked. When releasing the main knob the selected input can be heard. Note that the output is muted when changing source selection.



Mark that the MU2 shows the sample rate of digital inputs in the top left corner when there is a signal lock. "No Signal" will be shown if there is no signal detected.

Note that the presence of a signal on the *analog* inputs cannot be detected.

When shutting down the system, the MU2 will remember the last used source and select this source when powered on later.

Note: When you select an Analog or Digital source, the MU2 will automatically pause Roon playback. Mark that in this case it is still possible to start Roon playback in the Roon App but you won't hear sound as the selected playback source is not Roon.

Menu View

By pressing and holding the main control knob for 2 seconds or longer, the MU2 display enters the 'Menu View' mode.

Settings menu[1/7]: Standby



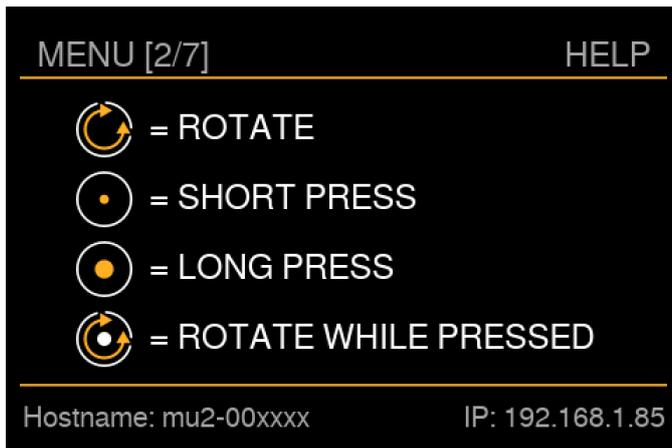
In this first menu you can put the MU2 in standby mode.

- Turn clockwise to go to the second menu.
- A short press ('confirm') will put the MU2 in stand-by mode.
 - When the MU2 is in stand-by you can simply press or turn the main control knob to initiate start-up of the system.
- With a long press you will exit the menu and go back to the Music View.

When in stand-by the power consumption decreases and the screen is turned off after an animation. The internal electronics are mostly shut down, but some of it still functions. If you like to completely turn off the system, switch off the device with the small mains power button on the back of the device. Always turn off the system before unplugging the power cord to prevent damage to your MU2 computer system!

Hint: The white LED on the front indicates if the device is in stand-by (LED 'breathes') or if the MU2 is shut down (LED off).

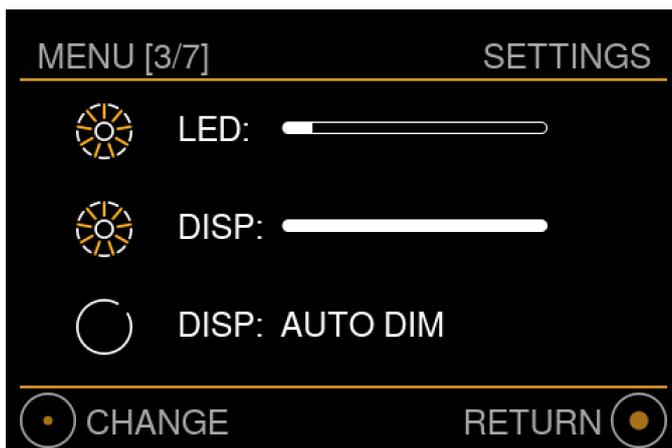
Settings menu[2/7]: Help



This menu shows the pictograms that are used in the MU2 for operating the main knob. At the bottom of the screen the current network information is shown. The indicated hostname depends on the serial number of your MU2. If the IP address shows 'unknown', there is no network connection and in that case the MU2 cannot be found by the Roon App in your tablet or smart phone. In that case, please check the network connection of your MU2.

- Turn counter-clockwise to go to the first menu, turn clockwise to go to the third menu.
- With a long press you will exit the menu and go back to the Music View.

Settings menu[3/7]: Settings



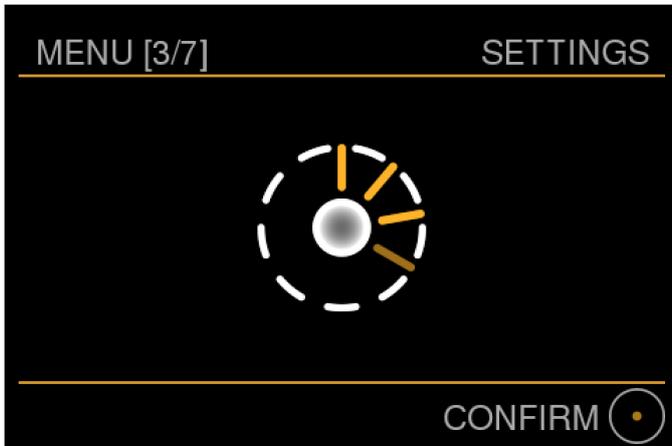
In this menu you can change operational settings of the MU2.

- Turn counter-clockwise to go to the second menu, turn clockwise to go to the fourth menu.
- With a long press you will exit the menu and go back to the Music View.
- To change any of these three settings, apply a short press on the main control knob. You will then enter the menu and the selected option will be highlighted. In the next image you can see that the first option is highlighted.

- To select another option, turn the main knob until the desired option is highlighted. To change it, press the main knob briefly.
- To leave this menu, apply a long press of the main knob.

LED and Display:

The brightness of the LED or Display on the front of the MU2 can be set with this option. For the LED this influences the brightness both in operation and in stand-by mode.



Turn the main knob clockwise to increase the brightness and counter-clockwise to decrease the brightness. Please note that the LED can not be turned off completely to facilitate showing whether the MU2 is in operation/stand-by or power off.

- A short press confirms the current setting.
- To leave the setting as it was, press long.

Settings menu[4/7]: GRUI control QR

This menu shows the information you need to connect to the Grimm User Interface (GRUI). The GRUI is the web control interface of the MU2. You can scan the QR code with your tablet or mobile device. As an alternative you can manually enter the link shown at the bottom of the screen in your browser. More information about the GRUI can be found in chapter GRUI MU2 Web Control. This menu page will automatically be shown at maximum screen brightness for optimal scannability.

Note: Your browser device must be connected to the same network as the MU2 to be able to connect to the GRUI.

- Turn counter-clockwise to go to the third menu, turn clockwise to go to the fifth menu.
- With a long press you will exit the menu and go back to the Music View.

Settings menu[5/7]: Infrared remote programming

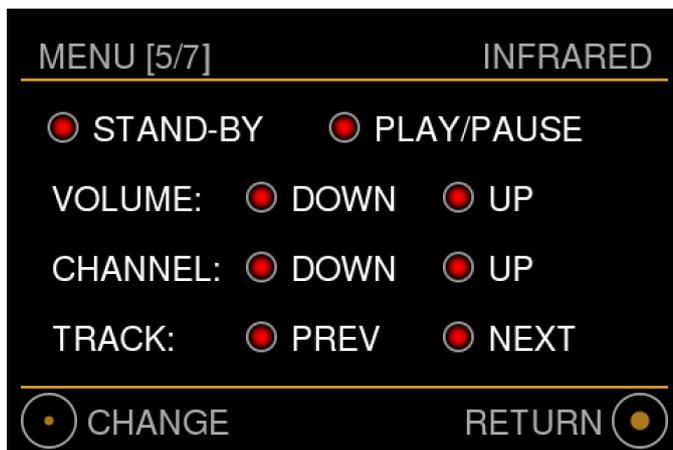
In this menu you can program the MU2's response to an infrared remote, note that this can also be done in the GRUI.

The infrared remote functionality requires an IR extension cord connected to the 3.5mm jack on the back.

Please see the hardware manual for the connector location and pinout information.

The MU2 supports the following types of IR remotes: RC5, RC6, JVC, NEC, NEC extended, Apple and SIRC. Other protocols may be added in the future, please contact info@grimmaudio.com if your favorite remote is not supported.

The following functions can be controlled with a general IR remote: Stand-by, Play/pause (mute when other sources than Roon are selected), volume control, source selection and next/previous track (for Roon).

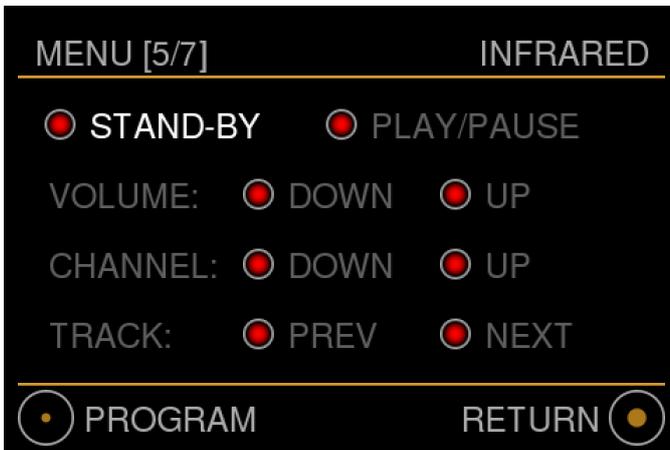


- Turn counter-clockwise to go to the fourth menu, turn clockwise to go to the sixth menu.
- With a long press you will exit the menu and go back to the Music View.
- A short press will enter the menu and highlight the selection function.

The colored dots next to each function can have 3 different colors with the following meaning:

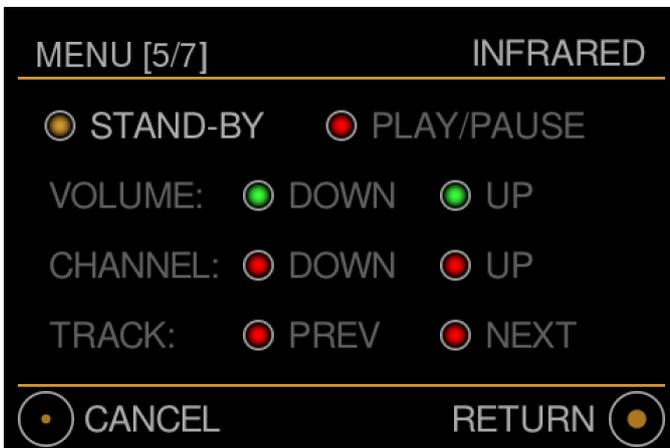
- Red: Function not programmed.
- Orange: In programming mode, waiting for an infrared command.
- Green: Infrared command paired with the function.

The image below shows the Stand-by function selected. Turn the main knob to switch the selection to the desired function. Short press the main knob to start programming the highlighted function.



The dot will turn orange until the MU2 receives an infrared command. Press the desired button on your infrared remote to link this infrared command to the selected function. When the MU2 receives an infrared command the dot will turn green and it returns to the infrared selection menu as shown in the previous image.

The image below shows the menu while programming the stand-by function, note that the volume up and volume functions are already programmed.



Note: Programming stand-by may take a little more time than the other functions.

To cancel, apply a short press with the main knob. The dot of the selected function will turn back to the original (red or green, resp. not programmed or programmed) and no changes are made. To cancel and leave the menu, apply a long press.

One button of the infrared remote can only be paired with one function of the MU2. If you use the same button of your remote for another function, the previous function is overwritten and the new one is paired. The dot of the previously paired function will turn red and the new function will become green.

The following functions are available in the various states of the MU2:

	Playing state: Room	Playing state: Other input	Menu display active
Stand-by	Yes	Yes	No ¹
Play/Pause	Yes, pause	Yes, mute	No
Channel Up/Down	Yes	Yes	No
Volume Up/Down	Yes	Yes	No
Track Prev/Next	Yes	No	No

¹: Except for the stand-by menu, page 1. By pressing the button on your remote that is paired with the stand-by functionality, the MU2 will enter this stand-by menu page. By pressing the button again the MU2 will go into stand-by mode.

Hint: To verify your button programming, you may press the IR remote buttons while the programming menu is displayed. The function that is paired with the pressed button will be highlighted.

Settings menu[6/7]: Software Version and Update



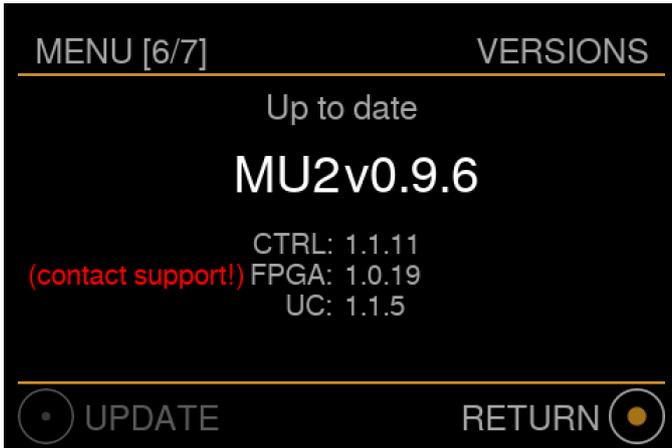
In this menu you can view the current software version and start an update. The MU2 automatically checks for an update every hour and also when entering this menu page from menu page [5/7]. If the MU2 is checking for updates, this is shown at the bottom of this menu. If your software is up to date this is indicated in the display and the bottom left icon is greyed out.

The software versions of CTRL (Control software), FPGA and UC (Microcontroller) are also shown in this menu. When contacting Grimm support for your MU2 we may ask you to send us this information.

- Turn counter-clockwise to go to the fifth menu, turn clockwise to go to the seventh menu.

- With a long press you will exit the menu and go back to the Music View.

The MU2 does a hardware self-test prior to starting the update. In case something is wrong the text “contact support!” is shown in red.

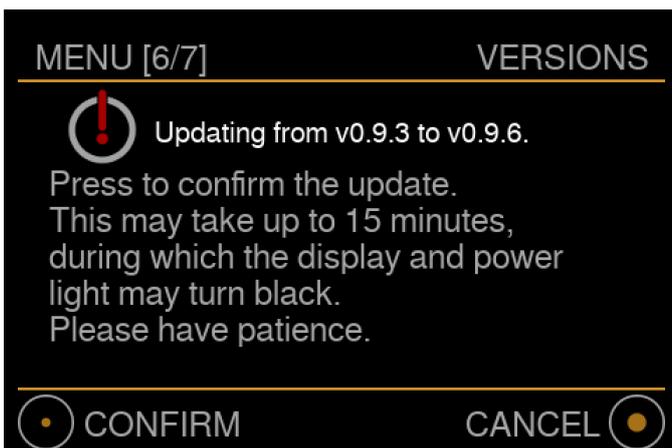


In such a case, please contact Grimm Audio through our support form via www.grimmaudio.com/support-form and we will help you.

In case an update is available and downloaded, the text “Update available” is shown.



- Start the update with a short press. After reading the warning message, confirm to start the update with another short press.



Please note: depending on the type of update the install can take up to about 15 minutes. During this time you will not see information on the display, the power LED fading quickly and the power button on the back is disabled. **Please remain patient and do not unplug the device while updating** since this will cause the update process to fail and the procedure starts again when the device is powered up.

During the update process the internal PC will shut down and it will reboot at least once. When the update is complete the system will turn back on in normal mode and show the update status briefly.

Updates for third party software like Roon is not included in the MU2 software update, this is done separately via the Roon App.

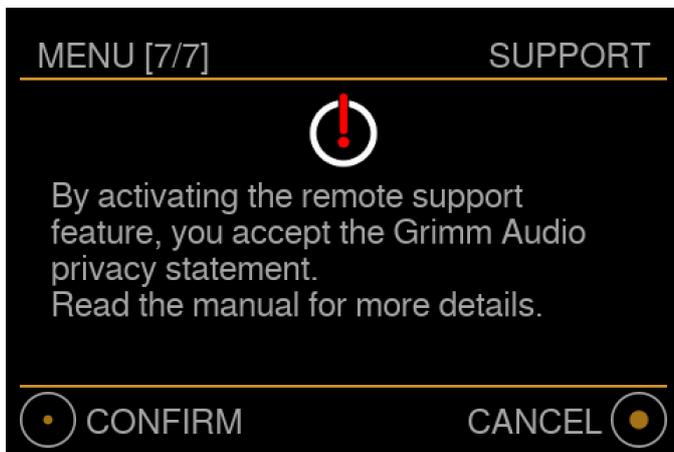
Note: Also the Music View display will show the text 'Update available' whenever a new update has become available.

Settings menu[7/7]: Support



In this menu you can activate Support Mode. This should only be activated when you have reported a problem with your MU2 to Grimm Audio and our people asked you to activate Support Mode. In this mode Grimm Audio engineers can get remote access to your device to help solve your problem.

When you activated Support Mode and wish to return to normal mode, press the power button on the back of the MU2 to turn off the device, and press the power button again to boot the MU2 in normal mode. After rebooting, Grimm Audio has no access to your MU2 any more.



- Activate Support Mode with a short press on the main control knob, confirm by another short press. The MU2 will reboot in Support Mode and a continuous animation screen with blue instead of white squares is shown on the display.
- With a long press you will exit the menu and go back to the Music View.

Note: While the MU2 is in Support mode, the blue dot animation will keep running and no other information is shown.

Support mode privacy statement:

Support Mode reboots the MU2 and establishes a secure connection to a Grimm Audio server. Through this secure connection we can log in to your device, read log files and change settings. Grimm Audio will not copy information from your MU2 in any form without your consent. Grimm Audio will never share your data with any third party.

4 GRUI MU2 Web Control

GRUI stands for Grimm User Interface, it is a web interface for controlling the MU2. There are extra functions available via the GRUI that cannot be set via the menu system of the MU2 hardware display.

Connecting to the GRUI

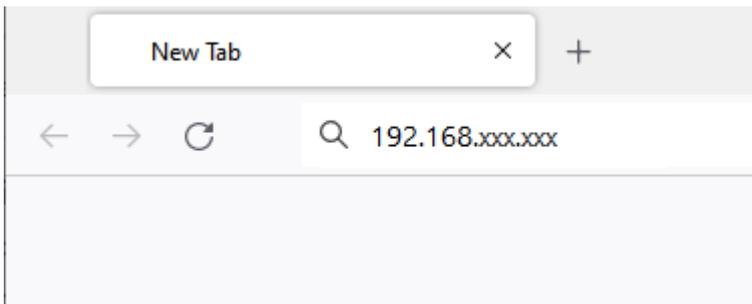
You can connect to the GRUI via a web browser on a device that is connected to the same network as the MU2, just like the Roon Remote.

You can scan the QR code shown in Settings menu[4/7]: GRUI control QR or enter the indicated address in your favourite browser to open the GRUI.

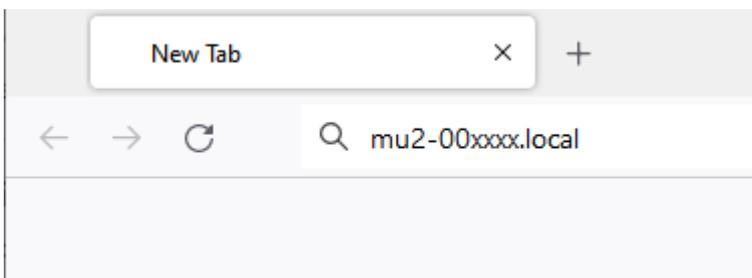
Hint: Once the web page is opened, you may store it for direct access as an icon on the home screen of your iOS or Android device. In iOS this achieved by clicking the 'share' icon (square with arrow), scrolling down and select "Add to home screen". In Android (depending on the browser) you can tap the menu icon (3 dots in upper right-hand corner) and tap Add to home screen. You'll be able to enter a name for the shortcut and then it will be added to your home screen.

Note that if the MU2 receives a different IP address from your router, the url link in this stored 'app' does not work any more. In that case it does not connect. Please use the QR code again to establish a new connection. You may delete the old icon and create a new one.

Alternatively you can enter the IP address of the MU2 in your browser manually:

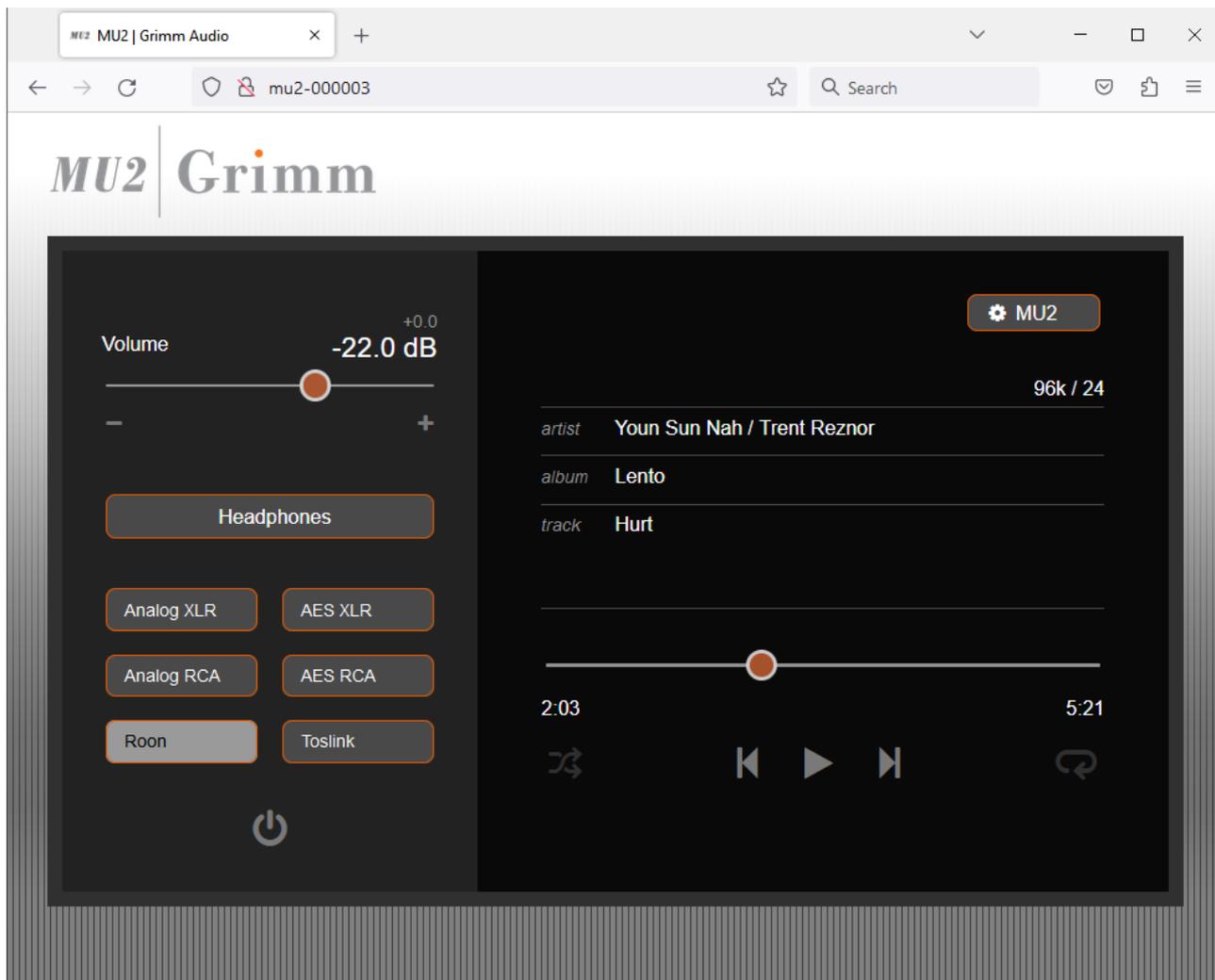


Some devices support connecting using the hostname, you can find the hostname in Settings menu[2/7]: Help in the bottom right corner. Enter the hostname in your browser to browse to the GRUI. Depending on your router settings you may need to add '.local' to the hostname and enter it in your browser as shown below:



Main page

The main page of the GRUI offers access to all basic functions of the MU2. The image below shows how it looks in a desktop environment. On mobile devices the volume control bar and source buttons will be placed below the artist play/pause buttons.



There are two sections: on the left is the control area. You can change the volume and select a source. Below the inputs you can find the stand-by button.

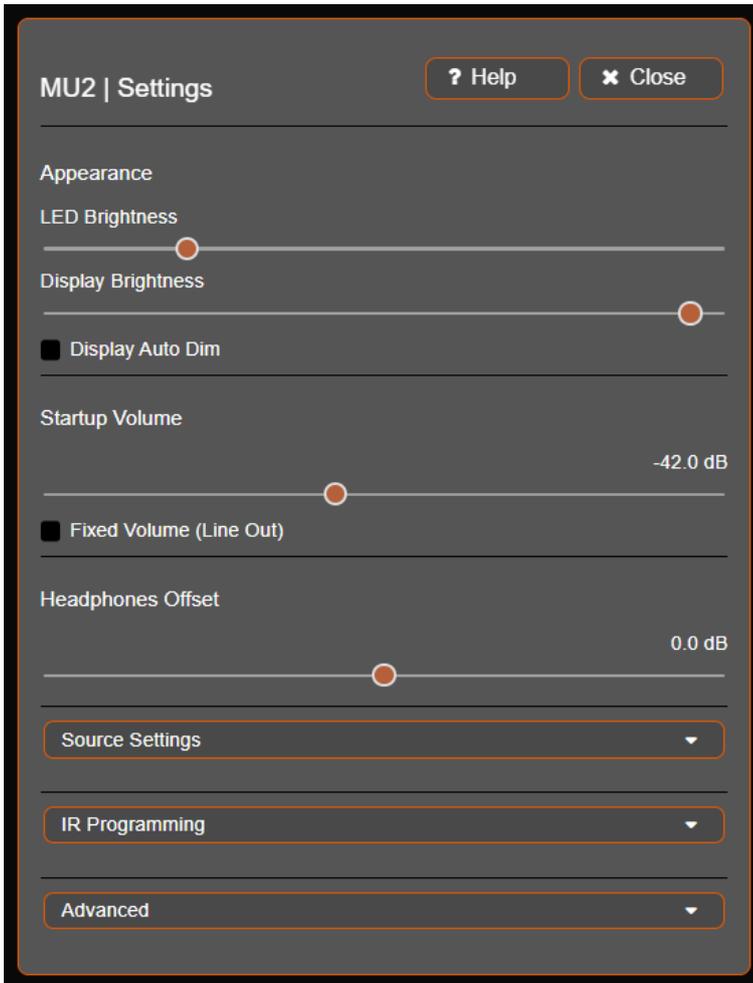
On the right is the track information and playback control. You can move the dot on the progress bar to skip or re-play parts of the current song. With the buttons below the bar you can select play, pause, next track and previous track. These operations are fully synchronized with the Roon interface, the hardware controls of the MU2, and the infrared control of the MU2.

Please note that for the track functions to work, the selected source must be Roon and there needs to be music in the queue. Mark that the Grimm Audio Roon Extension must be enabled for track information to be shown. If you don't see it, please read the chapter Extension to enable track information on the MU2 display.

The cogwheel button in the top right offer access to the MU2 settings.

MU2 settings

The MU2 settings page looks like this:



Appearance

The Power LED brightness and Display brightness can be set here. When enabling 'Display Auto Dim', the display will go to a very low brightness after a few seconds. Whenever you use the main knob or IR remote, it will light up for a few seconds again.

Volume

After starting the MU2, it defaults to the 'Startup volume'. You may set it to your preferred average listening volume, at a value between -79dB and +8dB. Please note that different recordings have a different 'perceived loudness' so it is generally advised to keep this level low.

In case you prefer to use the volume control of a connected preamplifier, it is suggested to check the Fixed volume option. When enabled, the volume control is locked to the current volume setting. The startup volume option is disabled as the volume control cannot be changed. Please make sure to not use a fixed volume setting above "0 dB" to avoid clipping.

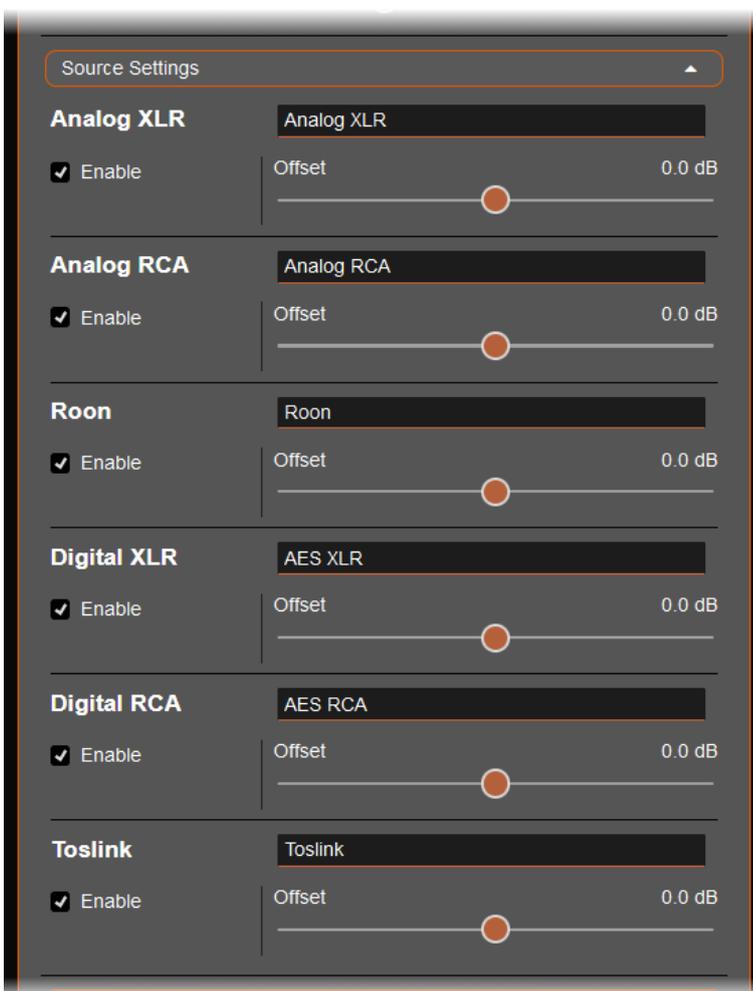
Headphone offset: Here you can give your headphone output an offset, for instance to match its sensitivity with the loudness when listening to loudspeakers. This offset will be applied to the 'main' output volume.

Source settings

The source settings allow for the following personalization:

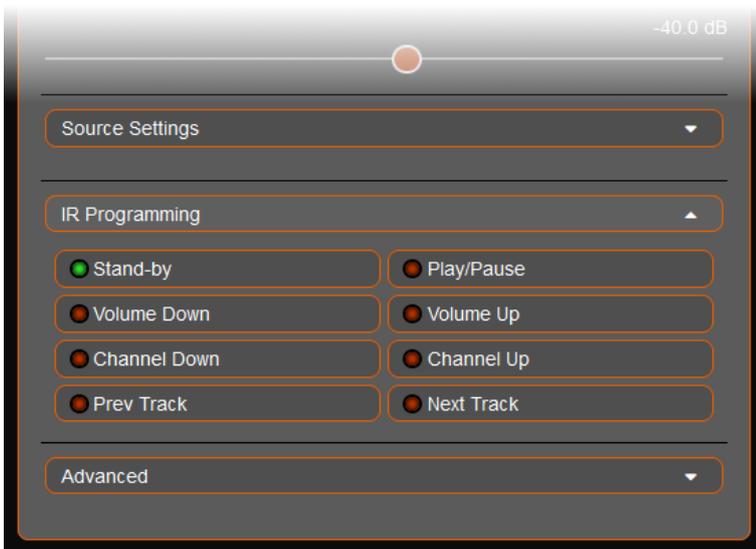
- Enable or disable a source: Disabling an input source removes it from the control part of the GRUI and from the source selection menu in the MU2.
- Change the name of the input which appears in the control part of the GRUI and on the display of the MU2.
(E.g. the 'Digital RCA' could be renamed to 'CD' when your CD transport is connected to that input)
- Set a source related volume offset: mainly intended to allow setting a similar perceived loudness for the analog sources.

Note: leave the volume offset setting at 0dB for the source that was used for setting the startup volume and use that source as your 'reference' to compare with.



IR Programming

In this menu you can program your favorite IR remote, just like via the MU2 menu. See chapter Settings menu[5/7]: Infrared remote programming for more information.



The infrared remote functionality requires an IR extension cord connected to the 3.5mm jack on the back. Please see the hardware manual for the connector location and pinout information.

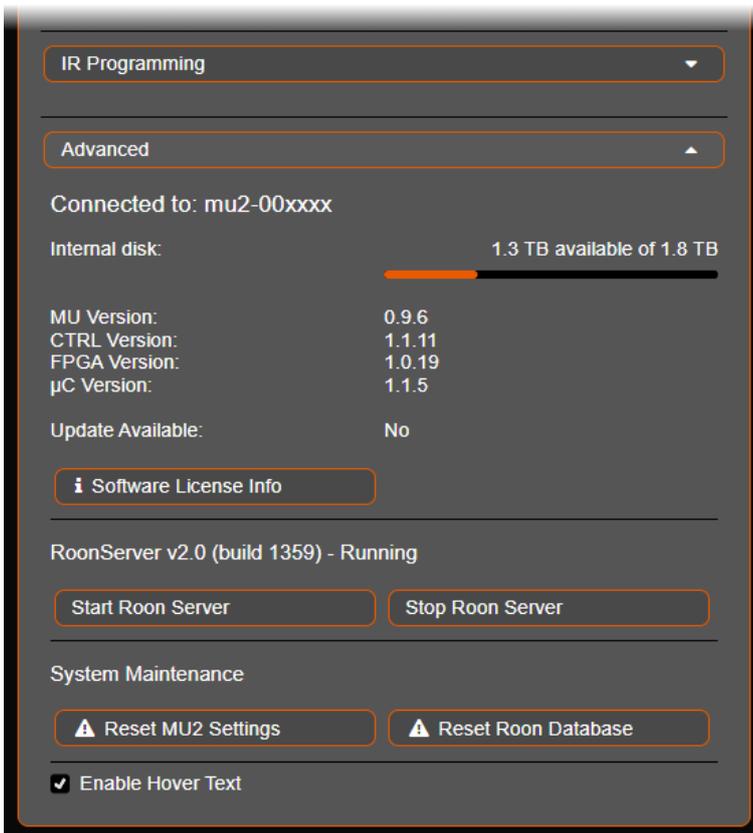
The following functions can be controlled with a general IR remote: Stand-by, Play/Pause (Mute when other sources than Roon are selected), volume control, source selection and next/previous track (for Roon).

Press the button of the function that you would like to program, the little dot will go to yellow and the label will fade in and out until you press a button of your remote. When the MU2 receives a command from the remote it will save the button that you pressed under that function. You can cancel by pressing the selected button again, it will return to its last state.

If you already used this button for a different function, that function will turn back to red as you cannot program two functions under one button.

Advanced

If you open the advanced tab you have access to more information about the MU2 and options that reset parts of the MU2 software, please be cautious with these buttons.



In case your MU2 has an internal Music disk, its free space and the total space of the disk are shown. Note that the displayed disk space will be somewhat lower than advertised as this is in “JEDEC 100B.01” format which differs from the “IDEMA” standard used by disk manufacturers.

Furthermore you can see the exact software versions of each part of the MU2, this information might be requested by a Grimm Audio employee when you run into problems.

Also you can see if an update is available, this will also be shown in the display of the MU2. Note that you cannot start an update from the GRUI, you have to use the main dial and go to the update menu as described in Settings menu[6/7]: Software Version and Update.

The Software License Info button brings you to a page where all the licenses of the software we use are stated, if you are interested.

Roon Server Status

Here you have options to start and stop the Roon Server. Note that if stopped using the Stop Roon Server button, the Roon Server will not start upon restart of the system. You will have to press the Start Roon Server button.

Reset options

The button “Reset MU2 Settings” resets the MU2 settings to the default value. This rolls back all settings you changed in the GRUI and the MU2 menus (including the IR remote settings). You will see a pop-up to confirm that you are sure, please note that your browser may block this pop-up, unblock popups for this page to use the function.

The Reset Roon Database button will stop Roon and erase the complete Roon database from the MU2 and restart Roon. This will also reset your login (you will have to press the ‘select different Server’ on your Roon remote), playlists (excluding Tidal, Qobuz and KKBOX playlists), favorites, tags, storage settings, MU2 Extension and all other changes you made to Roon in your MU2. Use this button only when a Roon employee or a Grimm Audio employee requests you to do this. We recommend to make a backup using the Roon backup functionality before executing a reset. You will get a pop-up asking you if you are sure to do this.

The last function in the Advanced tab is to toggle the hover-over help text on and off. This setting is saved in your browser which means the hover-over text will be shown again if you use a different browser or device.

© 2024, Grimm Audio BV. All rights reserved

Reproduction in whole or in part is prohibited.
Specifications subject to change without notice.

Grimm Audio, The Netherlands

General questions: info@grimmaudio.com

Support questions: grimmaudio.com/support-form

Tel. +31 40 213 1562

Check grimmaudio.com for news about your MU2.

For software version v0.9.6
J.V. M.S. P.M and E.G. 15/03/24