

ROOEXTEND®
EXTENSION BOX FOR ROON

Owner Manual



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User Manual

rooExtend v3.3.x



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Introduction

Thank you for purchasing the rooExtend-Box. You have purchased a high-quality product with firmware developed in Germany that significantly expands the possible uses of your **Roon Core**.

With rooExtend you can:

- Use the Microsoft Surface Dial as a wireless controller for Roon (**rooDial**).
- Use the SpaceMouse® Wireless as a wireless controller for Roon (**roo6D**).
- Use the SENIC Nuimo as a wireless control unit for Roon (**rooNuimo**).
- Control Roon with an Apple Watch (**rooWatch**).
- Use a UPnP player or streamer with Roon (**rooUPnP**).
- Play music from Apple devices through Roon and its DSPs (**rooPlay**).
- Play vinyl music through Roon and its DSPs (**rooPlay**).
- Record played records as FLAC files on a USB stick (**rooPlay**).
- Play music directly from CDs (without ripping) via Roon and its DSPs (**rooPlay**).
- Turn devices on and off from Roon via trigger signals (**rooControl**).
- Get music suggestions using artificial intelligence and natural language (**rooAIDJ**)
- Use the device volume of all ADI-2 DACs from Roon (**rooADI**).

To make this possible, rooExtend uses the option offered by Roon to integrate plugins. These plugins extend the functionality of Roon and so are called **Roon Extensions**.

The rooExtend-Box itself is a small box milled from a solid block of aluminum that provides you with various Roon Extensions (see above in brackets for names). These Roon Extensions were developed by definiteAudio GmbH and will be maintained in the future. Thanks to automatic over-the-air (OTA) firmware updates (between 2:00 and 4:00 a.m. local time) the rooExtend-Box is always up to date, without you having to worry about anything. Future security is guaranteed by the fact that newly released Roon Extensions are always automatically uploaded to the rooExtend-Box.

All Roon Extensions are displayed within Roon under the **Settings/Extensions** menu item. The individual settings for each extension are also made there. So, for you, Roon remains the central application to control everything, including the Roon Extensions of the rooExtend-Box.

Figure 1 shows the Roon Extensions provided by the rooExtend-Box.

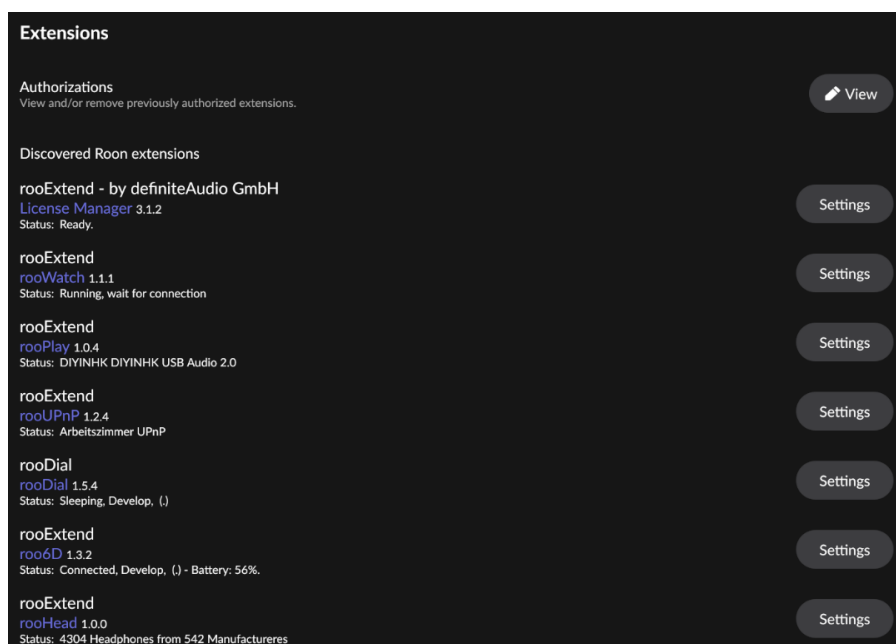


Figure 1 - Roon Extensions provided by rooExtend

Unpacking, setting up and connecting

The rooExtend sales packaging contains the following individual parts:

- The rooExtend-Box
- One USB-C power supply cable for the rooExtend-Box
- One Bluetooth antenna
- One USB antenna adapter for the Bluetooth antenna.

If you want to use a Microsoft Surface Dial or a Nuimo as a control device, before using the rooExtend-Box for the first time, screw the Bluetooth antenna onto the USB antenna adapter and then plug it into the USB port on the side of the rooExtend-Box.

If you want to use a SpaceMouse® Wireless as a Roon controller, please replace the USB antenna with the 3Dconnexion Universal Receiver that comes with the SpaceMouse® Wireless.

If none of the control devices mentioned above are to be used, the USB port on the rooExtend-Box remains free for the time being.

All of the possible connections are summarized in this manual.

The rooExtend-Box can be put into operation in a few simple steps. What you need (and probably already operate) is Roon on any computer or alternatively a Roon Core (e.g. Roon Nucleus) that you control with a PC or tablet. In addition, you will need a router with Internet access and an audio player with Roon Ready certification. You can find out how to use USB-DACs as an alternative in the chapter: "Using USB DACs with the rooExtend-Box"

Figure 2 shows a basic Roon system with a rooExtend-Box.

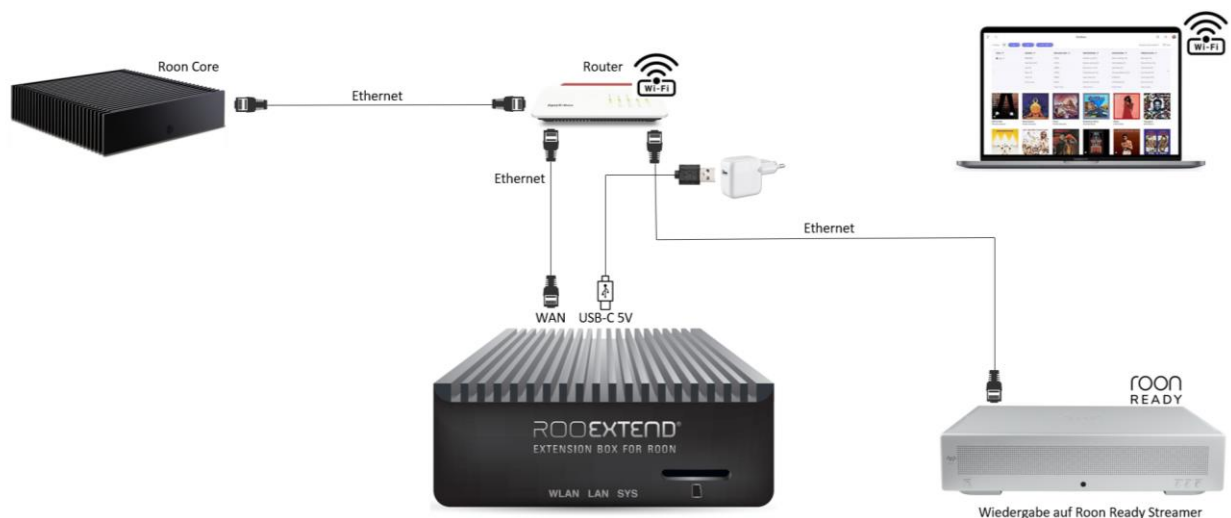


Figure 2 - Connecting the rooExtend-Box

As shown in Figure 2, first connect the rooExtend-Box to your router with an Ethernet cable. Then use the USB-C cable provided to connect the rooExtend-Box to the mains using a USB power supply unit from your inventory (at least 15W!).

Note:

We deliberately do not include a USB power supply, because we believe that there are already enough USB power supplies in the world and we don't want to pollute the world with more. We ask for your understanding.

After about a minute the rooExtend-Box is ready for use. You can tell that the device is ready for operation by the regular, slow flashing of the red LED on the front of the rooExtend-Box. (see chapter: "Meaning of the flashing signals of the red LED")

If you do not want to use wireless control units such as the Microsoft Surface Dial, the Nuimo or the SpaceMouse® Wireless, it does not matter where the rooExtend-Box is placed.

Note:

In all cases, the rooExtend-Box must be set up in a dry and sufficiently ventilated room. If set up in cupboards, drawers or other closed small volumes, there is a risk of fire due to overheating! When installing, it is therefore always important to ensure that the rooExtend-Box is adequately ventilated!!

When using one of the wireless control devices, the rooExtend-Box must be close to your listening position because of the necessary radio connection. To save you the effort of installing a second Ethernet line to your listening position, the rooExtend-Box has two Ethernet ports. This allows the rooExtend-Box to extend an existing Ethernet line and acts as an Ethernet switch. The port labeled "WAN" is the connection to your router. The connection labeled "LAN" leads to your streamer and possibly also to other devices. This type of connection is shown in Figure 3.

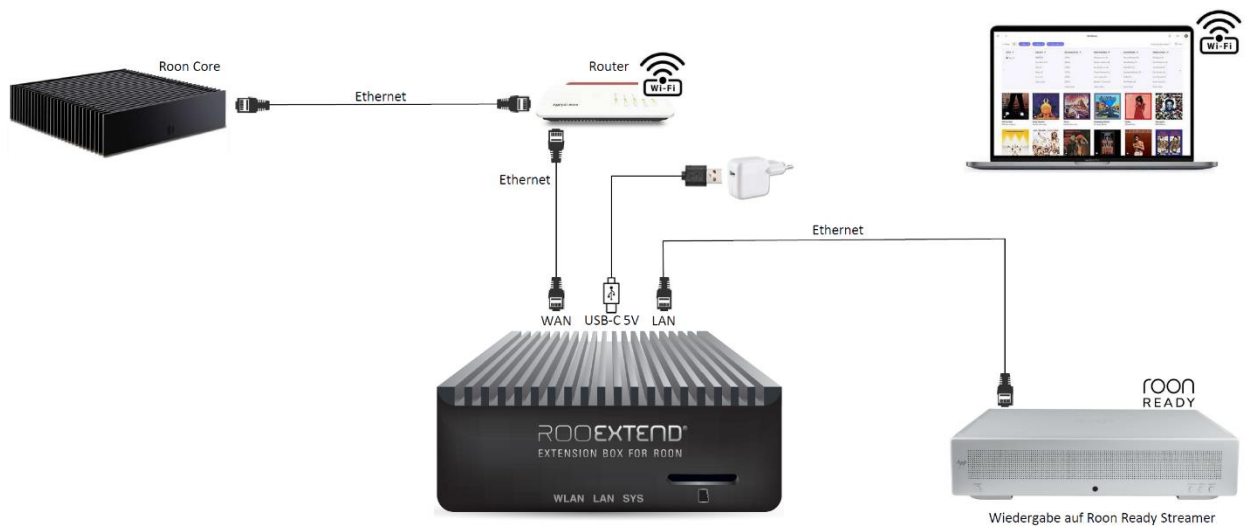


Figure 3 - rooExtend as Ethernet Switch

Important Note:

A Micro SD Memory Card is plugged into the front of the rooExtend-Box. It contains the complete firmware of the rooExtend-Box. There is no need to remove the Micro SD card thanks to the OTA firmware updates. Removing the Micro SD Memory Card from the rooExtend-Box voids warranty!

Installation

If the red LED on the front of the rooExtend-Box flashes slowly after switching on, the rooExtend-Box is ready for use. In order to use it, the Roon Extensions it must still be activated within Roon.

To do this, open Roon and select **Settings/Extensions** from the menu (**burger icon in the upper left corner**).

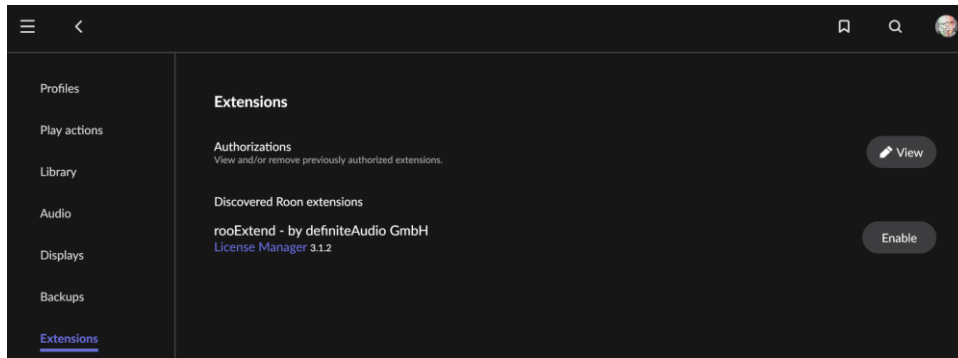


Figure 4 - Enabling rooExtend

You will now see: the rooExtend License Manager. Activate this by clicking on the button **Enable**.

After activating rooExtend, all Roon Extensions provided by rooExtend will appear. You can activate these by clicking on each of the individual buttons labeled **Enable**.

The result looks like this, although the order of the individual Roon Extensions in this view can vary:

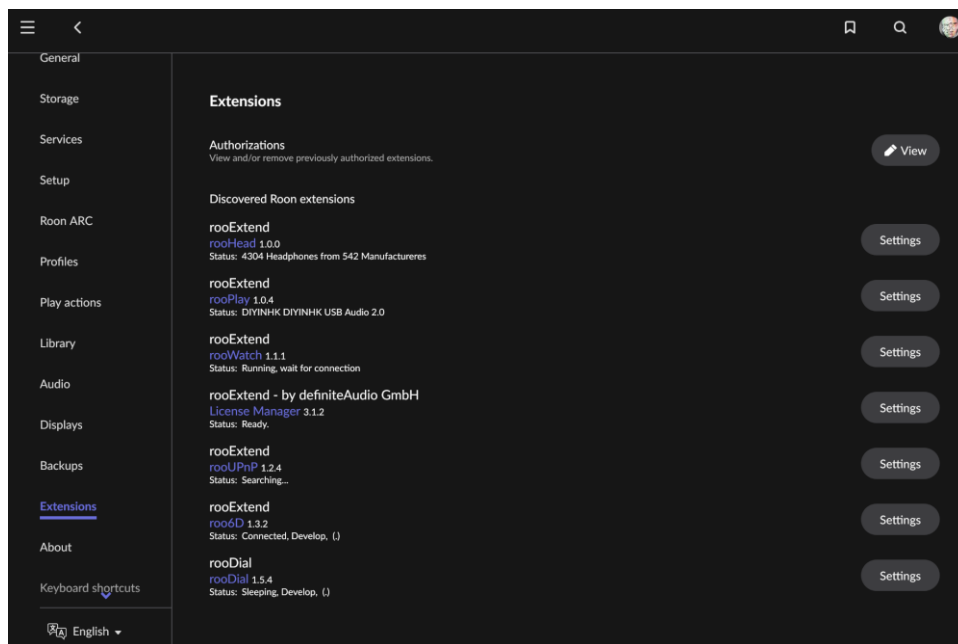


Figure 5 - rooExtend extensions after activation

The Roon Extensions are activated once after the first start of rooExtend. The process does not have to be repeated after a power failure or restarting rooExtend.

After activation, the red LED on the front of the rooExtend-Box flashes evenly every two seconds and shows that all Roon Extensions are now active (see chapter: "Meaning of the flashing signals of the red LED").

Preparing to use the Roon Extensions

The individual Roon Extensions provided by the rooExtend-Box still require certain preparations in order to function optimally. These preparations are described below.

Prepare rooDial

rooDial enables the use of a Microsoft Surface Dial as a control device for Roon.

Note:

To operate the Microsoft Surface Dial, the Bluetooth antenna must be plugged into the rooExtend-Box before the rooExtend-Box is powered on via the USB-C power supply cable.

The Microsoft Surface Dial communicates with the rooExtend-Box via Bluetooth. To establish the Bluetooth connection, the Microsoft Surface Dial must be paired once with the rooExtend-Box. There is a small button on the underside of the Microsoft Surface Dial (under the batteries).



Figure 6 - Microsoft Surface Dial from below

Press on this button until a white light starts flashing on the opposite side of the batteries. After some time, the lamp goes out and the Microsoft Surface Dial is paired with rooExtend. This is confirmed by the word **Connected** in the status line of the Roon Extension rooDial.

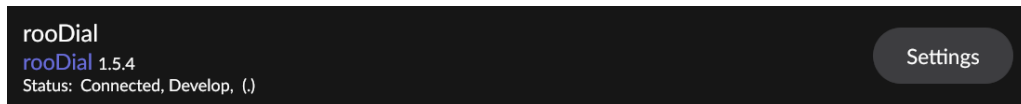


Figure 7 - Connected Microsoft Surface Dial Display

Note:

The Microsoft Surface Dial must not be connected to any other PC or device before connecting it to rooExtend. A previous connection causes the Microsoft Surface Dial to fail to connect to rooExtend.

You will find further help in the chapter: "Microsoft Surface Dial Connection Issues".

After successfully connecting the Microsoft Surface Dial to rooExtend, click the **rooDial** Settings button and select the Roon Zone that you want to control with the Microsoft Surface Dial. The name of the selected zone then appears in the status line of rooDial. In Figure 7, the status bar shows **Develop** as the name of the zone.

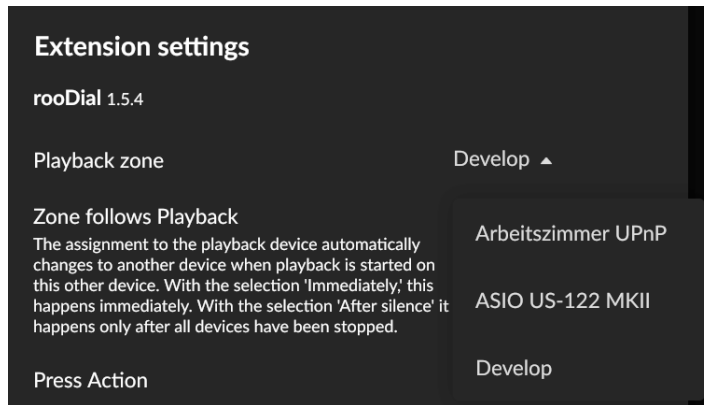


Figure 8 - Playback Zone Setting for the Microsoft Surface Dial

The rooDial settings offer various options for adapting the different gestures of the Microsoft Surface Dial (press, double press, etc.) to your own needs. More on this can be found in the chapter: "Using rooDial". Clicking on the **Save** button activates the chosen settings.

Note:
The Microsoft Surface Dial has a power saving function that switches off the Bluetooth connection to rooDial after a certain period. Rotating or pressing the Microsoft Surface Dial re-establishes the connection. This can take up to two seconds. During this time the response of the Microsoft Surface Dial is somewhat delayed.

Prepare roo6D

roo6D enables the use of a SpaceMouse® Wireles as a control device for Roon.

Note:
Instead of the USB antenna, the 3Dconnexion Universal Receiver must be plugged into the USB socket of the rooExtend-Box when operating the SpaceMouse® Wireless, before the rooExtend-Box is powered on via the USB-C power supply cable.

After turning on the power switch on the SpaceMouse® Wireless, the status bar of roo6D displays **Connected** .



Figure 9 - Connected SpaceMouse® Wireless Display

After successfully connecting the SpaceMouse Wireless to rooExtend, click on the **Settings** button of roo6D and select the Roon Zone you want to control with the SpaceMouse® Wireless. The name of the selected zone then appears in the status bar of roo6D. In Figure 10, the status bar shows Develop as the name of the zone.

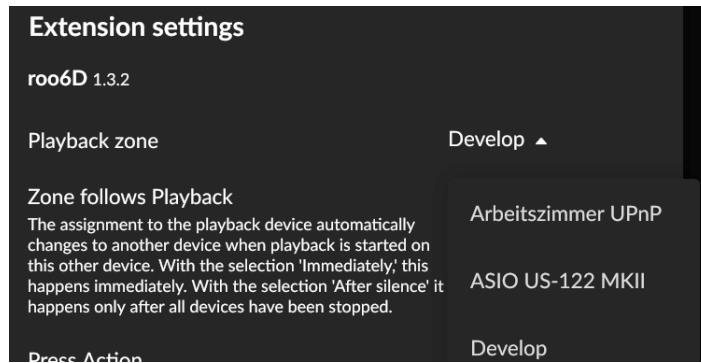


Figure 10 - SpaceMouse® Wireless Playback Zone Setting

The roo6D settings also offer various options for adapting the different gestures of the SpaceMouse® Wireless (press, pull, rotate, etc.) to your own needs. These options are self-explanatory and will not be described further here. Clicking on the **Save** button activates the chosen settings.

Prepare rooNuimo

rooNuimo enables the use of the Nuimo Control from the manufacturer SENIC as a control device for Roon. The Nuimo Control device is no longer available for purchase but occasionally used ones can be found on e-Bay.

Note:

Used Nuimos may have outdated firmware that does not work properly with rooNuimo. In this case, please contact info@definiteAudio.de to upgrade the firmware.

By default, rooExtend is set to operate the Microsoft Surface Dial. To enable operation with the Nuimo click on **Settings of rooExtend**.



Figure 11 - rooExtend Settings

In the dialog that opens, select **rooNuimo** as the controller instead of rooDial.

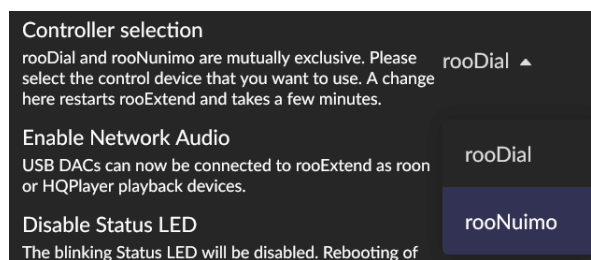


Figure 12 - Selecting the Nuimo as the ECU

After clicking on **Save**, rooExtend is restarted and after about ten seconds the Roon Extension rooNuimo appears instead of the Roon Extension rooDial.

In the meantime, turn on your Nuimo. Once rooNuimo has started, the Nuimo will automatically pair with the rooExtend-Box.

Now click on **rooNuimo's settings** to set the zone to control. In Figure 13, the status bar shows Develop as the name of the zone.

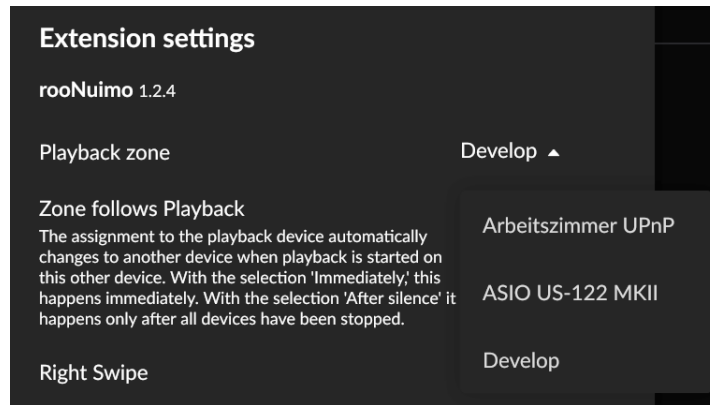


Figure 13 - Nuimo Playback Zone Setting

The settings of rooNuimo offer various options to adapt the different gestures of the Nuimo (press, touch, long touch, swipe, etc.) to your own needs. These options are self-explanatory and will not be described further here. Clicking on the **Save** button activates the chosen settings.

Prepare rooWatch

With rooWatch, Roon can be controlled via an Apple Watch. rooWatch consists of two parts, the Roon Extension rooWatch in the rooExtend-Box and the rooWatch app, which is installed from the Apple Watch app store.

Note:

In order to operate rooWatch optimally, the rooWatch app should not be started before several other settings have been made on the Apple Watch.

The following steps must be carried out on the Apple Watch to set up rooWatch:

1. Open the **App Store** on your watch.
2. Search for rooWatch and install the app.
3. Open the **Settings** (gear icon) on the Apple Watch.
4. Tap **General**.
5. Tap **Start automatically**.
6. Turn off **Start audio apps automatically**.
7. Go back to **Settings**.
8. Select **Wi-Fi**.
9. Enable WiFi and connect your Apple Watch to your WiFi.
10. Go back to **Settings**.
11. Select Siri and activate Siri with one of the three switches (**Look out for Hey Siri, ...**).
12. Find **Use with Siri** and tap it.
13. Activate **rooWatch**.
14. Go back to the Applications and launch rooWatch.

Connect to rooWatch manually

The rooWatch app should then automatically connect to the rooWatch Roon Extension. In rare cases, this connection is not made. If this happens, proceed as follows:

1. In Roon, open Roon Extensions with **Settings/Extensions**. For the Roon Extension **rooWatch**, click **Settings**.

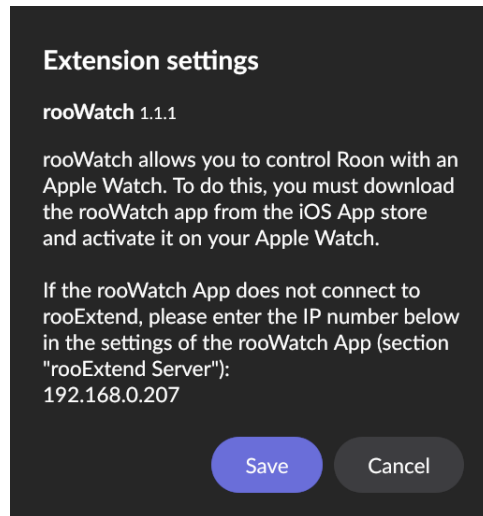


Figure 14 - RooWatch Settings

2. Make a note of the IP number displayed in the last line (here 192.168.0.209).
3. Click **Cancel**
4. Open the rooWatch app on your Apple Watch and tap **Dismiss**
5. Swipe your finger down from the top of your Apple Watch. The Options menu appears.
6. Swipe your finger from bottom to top until you see the **rooExtend Server** field at the bottom.
7. Enter the **IP number** noted under point 2 and tap **Done** on the top right of the Apple Watch.

The rooWatch app is now connected to the rooWatch Roon Extension and can be used to control Roon (see chapter: "Using rooWatch").



Figure 15 - rooWatch with a connected Apple Watch

Several Apple Watches can be connected to rooWatch and each watch can control its own Roon Zone, e.g. a family member's Apple Watch can control the zone in the study and your Apple Watch can control the zone in the Living room.

Selection of the zone to be controlled

To choose which Roon Zone you want to control on your Apple Watch, swipe your finger from top to bottom on the Apple Watch. The options menu appears. Here you can make further settings in addition to the zone to be controlled.

Prepare and use rooUPnP

With the Roon Extension rooUPnP you can run UPnP devices together with Roon. rooUPnP works with FLAC and MP3 streams, depending on what your UPnP device is capable of. FLAC streams can be transmitted to your UPnP devices with a quality of up to 24/192.

To use rooUPnP, you must first enable Squeezebox support in Roon via **Settings/Setup**.

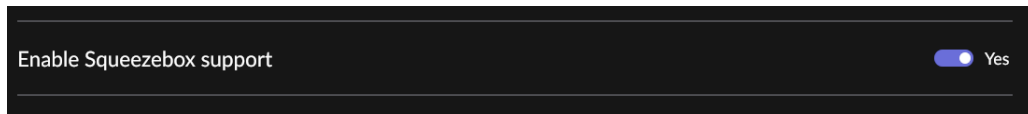


Figure 16 - Squeezebox Support Enabled

Next open **Settings/Audio** in Roon. After a while your UPnP devices will appear in the **Squeezebox** section.

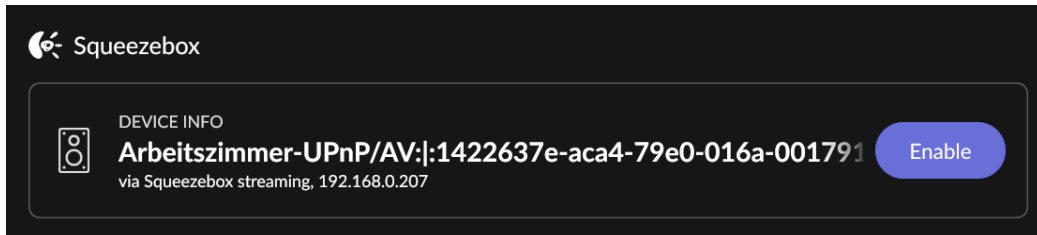


Figure 17 - UPnP Device Found by rooUPnP

Now click on **Enable** and enter a name for each of your UPnP devices. After that, the UPnP devices can be used with Roon like any other audio device.

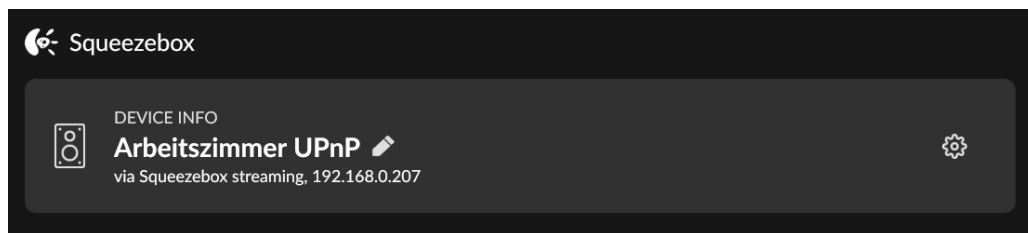


Figure 18 -UPnP device enabled

Next, in Roon, open the Roon Extensions page via **Settings/Extensions**. Click **rooUPnP Settings** to set the audio quality for your UPnP devices. Any UPnP device found will be displayed here. You can open its settings by clicking on the + in front of the device name.

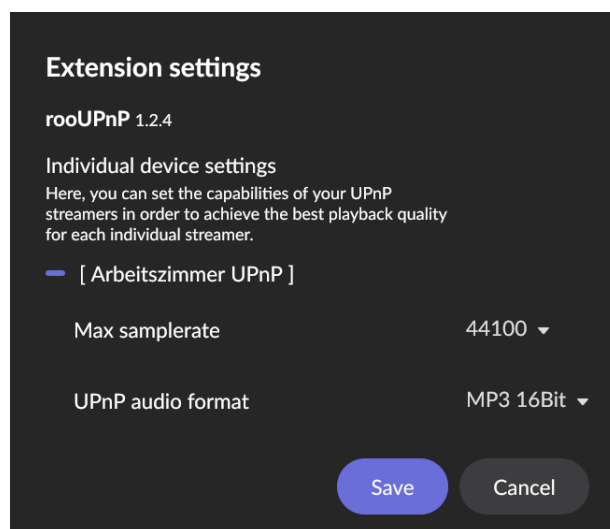


Figure 19 - Audio Quality Setting for UPnP Devices

You can set the maximum sample rate for each UPnP device and also have the choice between **MP3** and **FLAC**. FLAC is basically bit perfect. If you select the **Transparent** option, Roon will send the FLAC stream directly to your device. With all other options, Roon first decodes the FLAC stream within rooUPnP and then encodes it again in the target format. In terms of sound quality there should be no difference.

Note:

Not all UPnP devices that can play FLAC files are also able to play FLAC streams. The difference lies in the length information in the FLAC header. FLAC files have a fixed length, FLAC streams are inherently unlimited. Almost all UPnP streamers can handle MP3 streams, because it is the streaming format of Internet radio stations. Newer UPnP streamers can usually also handle FLAC streams, but some older devices cannot. With those, only MP3 can be used as the playback format via rooUPnP.

Prepare rooControl

rooControl is designed to switch audio devices with a trigger input (3.5mm jack plug) on or off.

Note:

rooControl can only be used if you have connected an Amazon Basics - USB HUB with the model number HU9002V1EBL to the USB socket of the rooExtend-Box. If this special USB HUB is not connected, the Roon Extension rooControl will not be displayed in Settings/Extensions.

To prepare rooControl for operation, first open **Settings/Extensions** in Roon and click on **rooControl Settings**.



Figure 20 - The Roon Extension rooControl

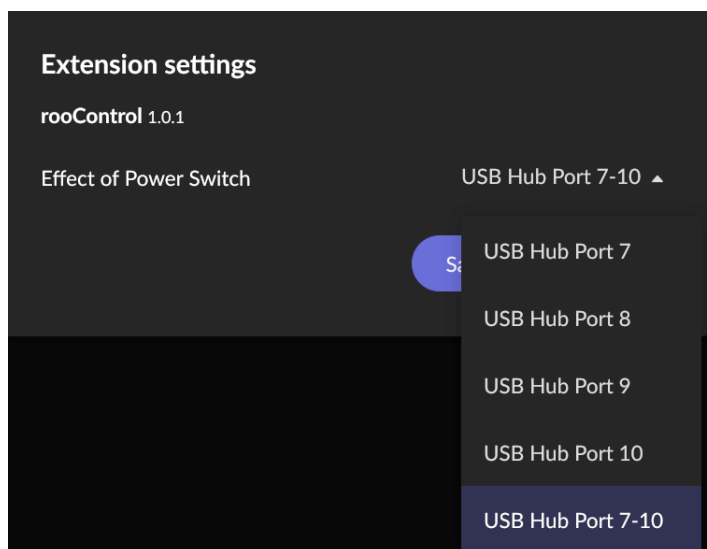


Figure 21 - Settings of rooControl

In the rooControl settings you can select which ports of the USB HUB you want to use for controlling the trigger signal. **Ports 7-10** are available. Alternatively, all four ports can be used simultaneously. After selection, click **Save**.

Next, assign rooControl to one of your audio devices. As a result of this assignment, a blue or red power button becomes visible above the volume control of the assigned audio device. To make the assignment, look for the device to which rooControl should be assigned in Roon **Settings/Audio**. From there, click the **gear icon** and then click **Device Setup**.



Figure 22 - Opening Device Setup

In the device setup that opens, click on **External source control**, then on **rooControl: Power rooExtend** and finally on **Save**. The assignment is now established and rooControl can be used.

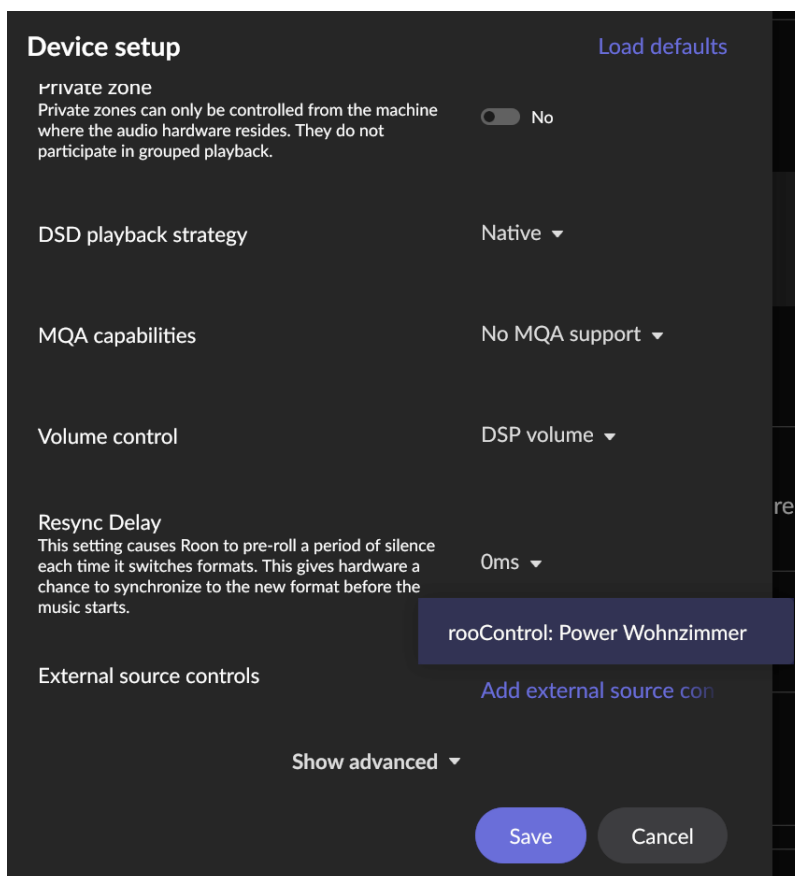


Figure 23 - Device setup for connecting rooControl

Prepare rooPlay

The Roon Extension rooPlay allow you to play audio signals coming from a **turntable**, an **Apple device** or a **CD-ROM drive** via Roon. Users of the DSPs integrated in Roon and users of room correction filters inside of Roon are able to play these audio sources with their preferred DSP corrections.

In addition, rooPlay offers the playback of various audio test signals that are firmly integrated in rooPlay.

To play audio CDs via Roon (without ripping them to the hard drive first) you need a CD-ROM drive with a USB port, such as the **Apple Superdrive** (CD-ROM drives from other manufacturers can also be used). The playback speed of all CD-ROM drives is regulated in such a way that they work almost silently.

Note:

USB CD-ROM drives often require more power than the USB-2 port of the rooExtend-Box can deliver. If your USB CD-ROM drive does not work properly connected directly to the rooExtend-Box (eg you have problems loading the CD or playing it), please use a USB hub with its own power supply (see chapter: "Fehler! Verweisquelle konnte nicht gefunden werden.").

To use Roon with analogue (turntable) or digital input signals, you need a USB audio interface that is compatible with USB Audio Class 2. This is the case with almost all USB audio interfaces today. An example of an inexpensive USB audio interface is the **Behringer UFO202**, which even has a phono preamp for connecting turntables directly. The **RME ADI-2 Pro FS** or even better **RME ADI-2/4 Pro** (with phono preamplifier) audio interfaces are recommended for users with the highest demands. All these audio interfaces can also be used as Roon playback devices (see chapter: "Using USB DACs with the rooExtend-Box").

All audio signals are forwarded by rooPlay to Roon for playback as a lossless FLAC stream.

In addition, a USB memory stick can be connected (see chapter: "Record audio from audio interface as FLAC"). In this case the audio signal from the audio interface is recorded during playback and saved as a FLAC file on the USB memory stick.

To be able to use these options, a special radio station for rooPlay must be set up in Roon under My Live Radio. This lengthy procedure only needs to be carried out once. Please proceed as follows:

In the Roon open **Settings/Extensions**, click the Roon Extension **Settings** button **rooExtend**. At the bottom of the page, under the "System state" heading, you will find the IP number of your rooExtend-Box (in the example below: 192.168.0.207). Make a note of this number and click **Cancel**.

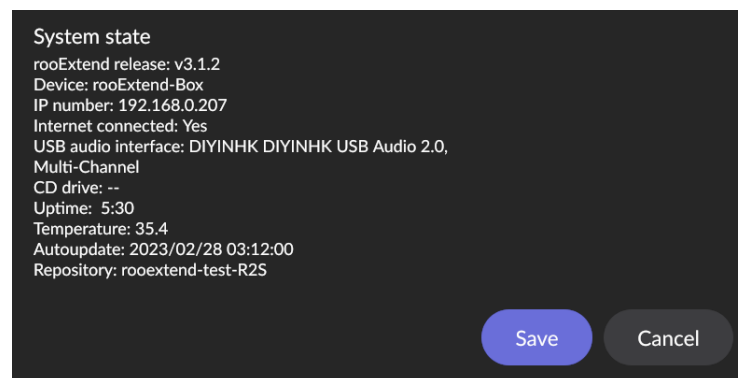


Figure 24 - Displaying the IP Number of the rooExtend-Box

Now open the browser on your PC and enter **http://[IP number]/images/R-Play.jpg** in the URL line. Please enter the noted IP number of your rooExtend-Box instead of "[IP number]". In the example above, this would be: "http://192.168.0.207/images/R-Play.jpg". This icon will appear in the browser:



Figure 25 - rooPlay Icon

Now select this URL in the browser and copy it to the clipboard (CTRL+C for Windows).

Back in Roon open **My Live Radio**.



Figure 26 - My Live Radio

Now click on **+ Add station** and in the selection that appears, click **Add station URL**.

In the URL line of the box that now opens, enter **http://[IP number]/audio**, replacing [IP number] with the IP number of your rooExtend-Box as above. Figure 27 shows the input according to the example URL.

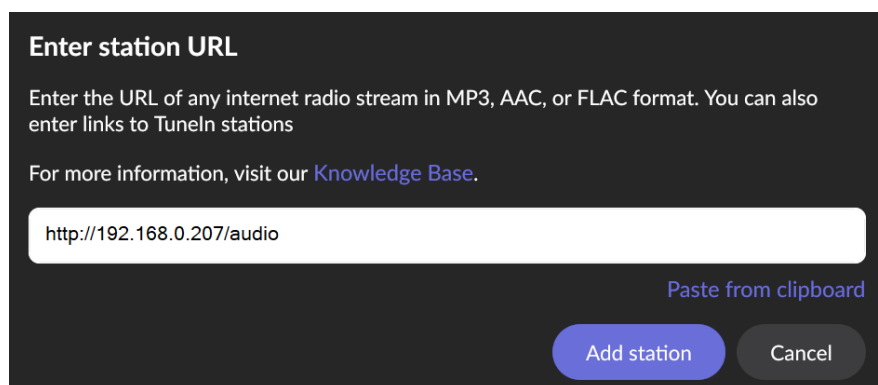


Figure 27 - Entering the RAdiosder URL of rooExtend

Once entered, click **Add Station**.

On the page that opens, first click the **Add Image** button (see: Figure 28).

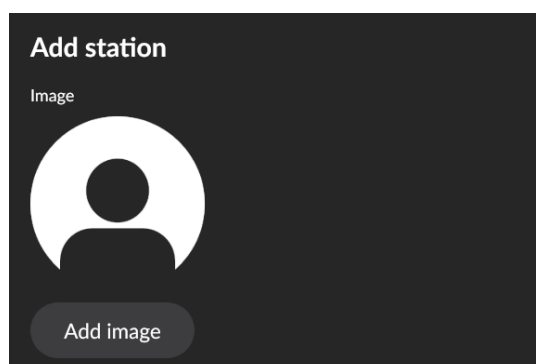


Figure 28 - Adding the radio function icon

Click **Paste URL from clipboard** in the upcoming dialog (see: Figure 29)

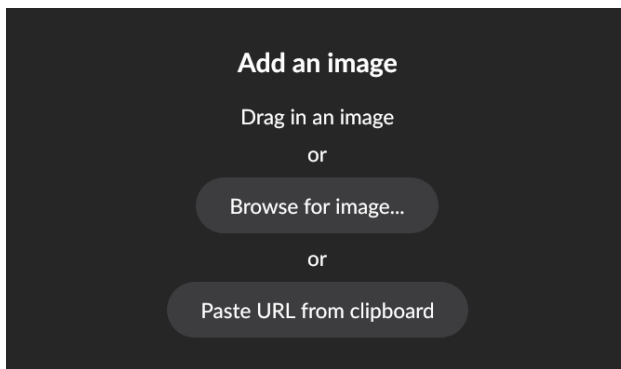


Figure 29 - Insert URL of the icon

If you have done everything correctly so far, the logo will now appear at the top of the page (see: Figure 30)

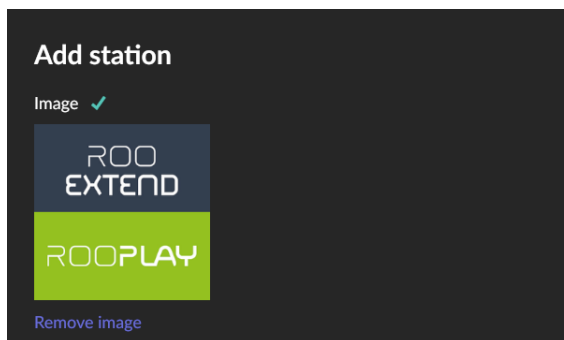


Figure 30 - Inserted logo

Please fill in the remaining fields as shown in Figure 31 .

Note:

Please ensure that the **NAME** field is filled out exactly as shown in Figure 34. Please also note that it is case-sensitive. Please leave the **STREAM URL** field unchanged.

After filling in the fields, click on the button **Add station** and you have finished creating the radio station.

Add station

Image ✓

ROO
EXTEND

ROOPLAY

Remove image

NAME

rooExtend ✓

DESCRIPTION

Local Radio Station for rooPlay ✓

WEBSITE

BROADCAST LOCATION

rooPlay

FREQUENCY

BAND

LANGUAGES

STREAM URL

http://192.168.0.207/audio

Copy Paste

Add station Cancel

Figure 31 - Filling the fields of the rooPlay radio station

Testing the created rooPlay radio station

To check if the rooPlay radio station was created correctly, select **Settings/Extensions** in the Roon menu. Next click the **rooPlay Settings** button.

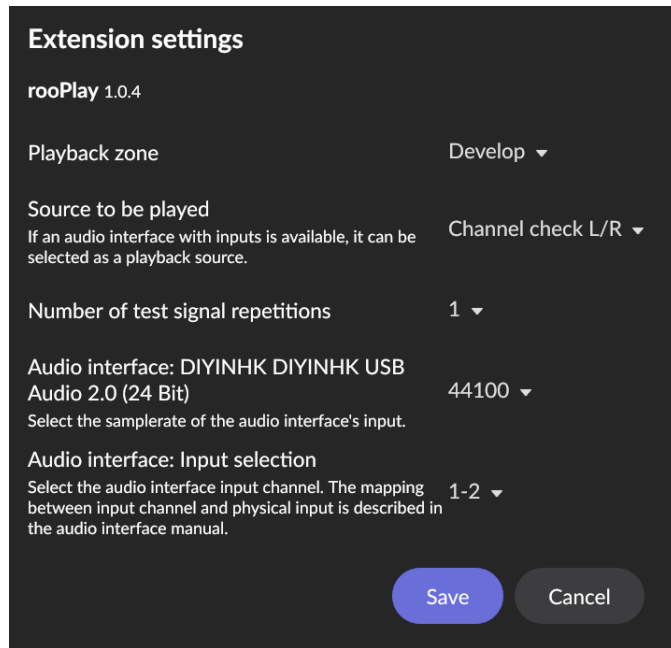


Figure 32 - The settings of rooPlay

Select your Roon playback device as **playback zone** and the **Channel check L/R** test signal as **Source to be played** (see: Figure 32). Leave the other settings as they are and then click the **Save** button. Shortly afterwards the test signal will start in the playback zone you have selected. If you hear the speaker say "Channel Check, Left Channel, Left Channel, Left Channel, Channel Check, Right Channel, Right Channel, ..." then the rooPlay radio station setup was successful.

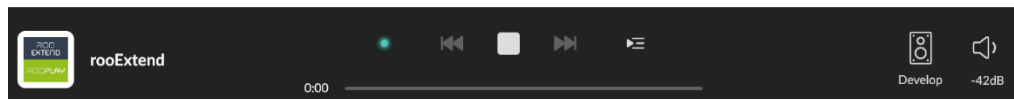


Figure 33 - View of Roon during playback of the rooPlay radio station

Create additional radio stations (optional) for playback from the audio interface

Playback via rooPlay from Apple devices or from CD-Rom starts automatically (see chapter: "Using rooPlay").

To start playback from the audio interface, on the other hand, you first must open the **rooPlay settings** and select the audio interface for playback (see chapter: "Playback from an audio interface"). If this is too cumbersome for you in the long run, you have the option of creating additional radio stations for the audio interface – e.g. one for playing LPs – which you can then start just as easily as any other radio station.

The chapter "Prepare rooPlay" basically explained how to create a radio station for rooPlay. To create the radio station for your audio interface, proceed in almost the same way. The only difference is that you have to give the radio station a different name (e.g. Turntable) and the URLs to use are different.

Instead of **http://[IP number]/images/R-Play.jpg**, enter either **http://[IP number]/images/R-LP.jpg** or **http://[IP number]/images/R-CD.jpg** depending on which icon you want to display.

For the URL you use to create the radio station for the audio interface, instead of **http://[IP number]/audio** enter the URL **http://[IP number]/audio/?playbackSource=interface&interfaceSampleRate=48000**.

The specified sample rate must be selected in such a way that your audio interface supports it. For example, the Behringer UFO 202 only supports sample rates up to 48000. You can see the supported sample rate in the **rooPlay settings** in the **Audio Interface** dropdown box (see chapter: "Playback from an audio interface").

If you are using an audio interface with multiple inputs (as is the case with the RME ADI-2 pro FS, for example), the URL for creating the radio station is extended by an additional parameter and then looks like this:

[http://\[IP number\]/audio/?playbackSource=interface&interfaceChannel=x-y&interfaceSampleRate=48000](http://[IP number]/audio/?playbackSource=interface&interfaceChannel=x-y&interfaceSampleRate=48000)

Instead of the yellow values **x-y**, the channel number of the input to be selected must be entered. With the ADI-2 (see: Figure 34 Block diagram of the RME ADI-2 Pro FS audio interface) this is e.g. **1-2** for the analog input, **3-4** for the AES input, and **5-6** for the coaxial or optical input.

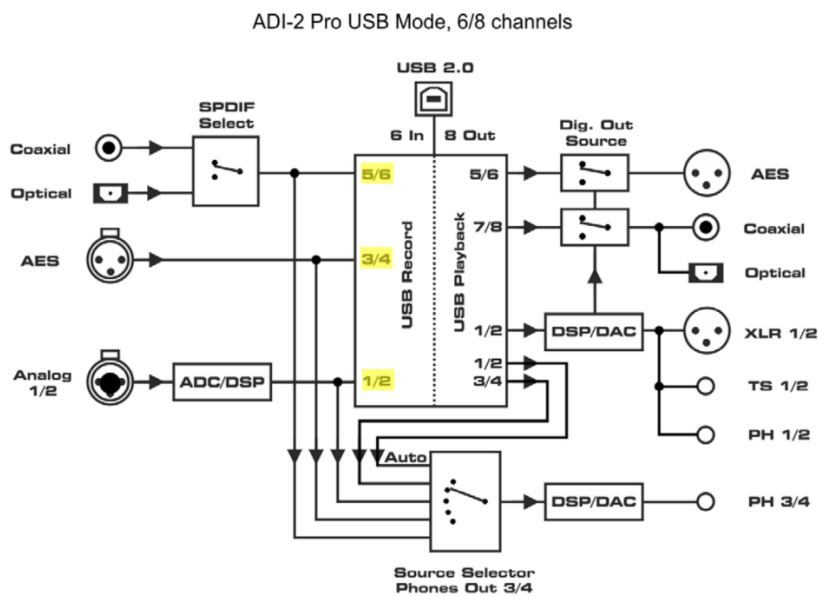


Figure 34 Block diagram of the RME ADI-2 Pro FS audio interface

Figure Figure 35 shows an example of what a radio station for a turntable can look like.

Sender bearbeiten

Bild

ROO
EXTEND

Bild entfernen

NAME

Turntable

BESCHREIBUNG

WEBSEITE

SENDERSTANDORT

Via RME ADI-2 Pro FS

FREQUENZ

BAND

SPRACHEN

STREAM URL

http://192.168.0.208/audio?playbackSource=interface&interfaceSampl

Kopieren Einfügen

Speichern Abbrechen

Figure 35 - Example of a radio station with audio interface for the turntable

Prepare rooHead

rooHead is a Roon Extension that creates reference quality equalizers for over 4000 headphones. The equalizers are calculated according to the scientific findings of the HARMAN company. With rooHead, these equalizers can now be easily used by any Roon user.

With rooHead, music sounds through your headphones as if it had been played with a calibrated system in a reference listening room.

rooHead calculates its headphone equalizers as ZIP files that you can load into Roon's Convolution DSP with just a few mouse clicks.

These are the main features of rooHead:

- Support for more than 4000 headphone types.
- Create the best possible sound.
- Ease of use: just select the headphone manufacturer and type.
- Extended frequency range up to 96kHz without clipping at 22kHz like other equalizers.
- Customizable bass boost and tilt without loss of quality to suit personal taste or listening experience (see: [HARMAN Presentation Slides](#)).
- Optionally calculated level correction so that the sound of the headphones can be compared with and without an equalizer at the same volume.

Create headphone equalizers

Opening the **rooHead Settings**, you have the option of selecting the manufacturer and the type of headphone in the upper part of the dialog. There are more than 4000 headphones in the database and new models are constantly being added to it.



Figure 36 – rooHead settings: selection of the manufacturer and type of the headphone

Individual settings can be made in the lower part of the dialog. This is sometimes necessary because the standard equalizers are tailored to the taste of the masses (see: [HARMAN presentation slides](#)). During its research, HARMAN found, for example, that older listeners prefer a boost to the treble and experienced listeners prefer less bass boost.

Both are able to be adjusted with the settings for “**Bass boost/cut**” and “**Tilt of the target curve**”.

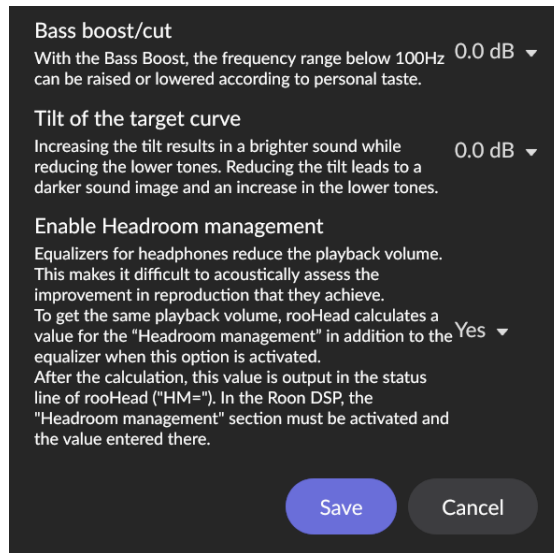


Figure 37 – rooHead settings to adapt the listener preferences

The range in which the bass boost/cut can be fine-tuned is between -3.0dB and +3.0dB. It is recommended to start with 0.0dB and then see whether you prefer more or less bass. To do this, you can rename the generated equalizers from "rooHead.zip" to match your settings - e.g., "rooHead -2 0.zip".

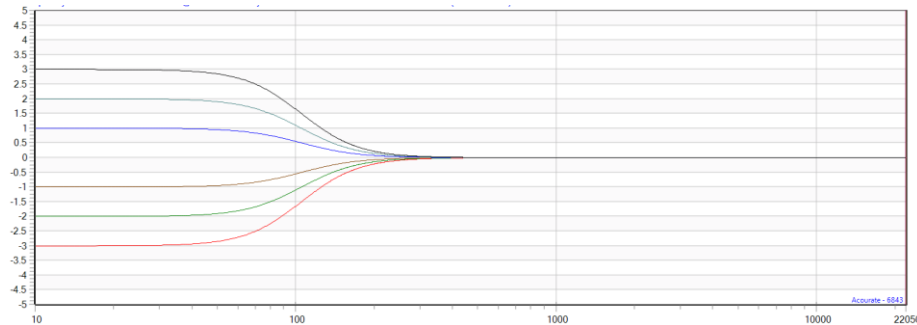


Figure 38 – rooHead Bass boost/cut

The tilt of the target curve can also be adjusted between -3.0dB and +3.0dB. The higher the value, the brighter audio will be perceived. At values less than 0dB, the audio becomes darker.

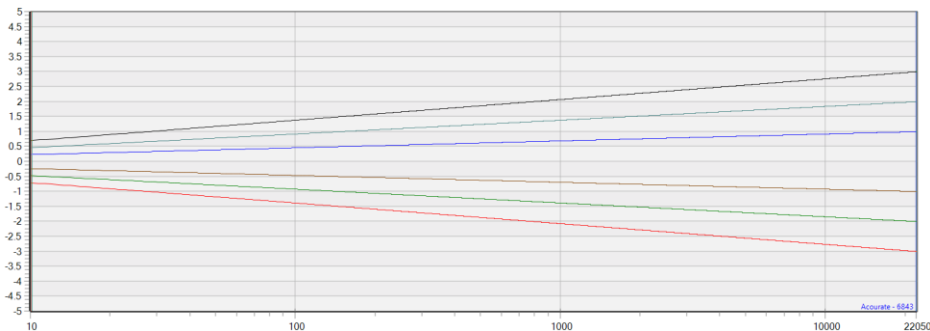


Figure 39 – rooHead Tilt

Note:
Both setting options are meant to fine-tune the sound. For most listeners, the optimum will be with both values at 0.0dB.

The setting for "Enable Headroom management" allows you to compare playback with and without an equalizer at the same volume. It makes sense to set this setting to "Yes" especially when trying out the headphone equalizers for the first time.

Prepare rooAIDJ

rooAIDJ stands for **Artificial Intelligence Disk-Jockey**, a completely new and revolutionary way to explore music.

With the **rooAIDJ-App (iOS)** you can chat and even speak to find and select music in Roon. rooAIDJ will suggest artists, albums or tracks in conversation with you. It's as easy as talking to a human DJ. At the end of the conversation, you can select music that can be played in Roon with one click.

Note:

To use rooAIDJ you need a MAC, an iPhone, an iPad, an Apple TV or an Apple Watch. Android devices are currently not supported.

To start up **rooAIDJ** for the first time, proceed as follows:

- Look for the free **rooAIDJ-App** in the Apple App Store and install it on your Apple device.
- Next start Roon **on your Apple device** and select the menu item **Settings/Extensions**.
- Click on the blue text **rooAIDJ**.

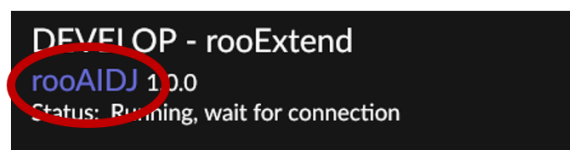


Figure 40 – Open Safari to start the rooAIDJ-App for the first time

- Your browser opens with the following message:

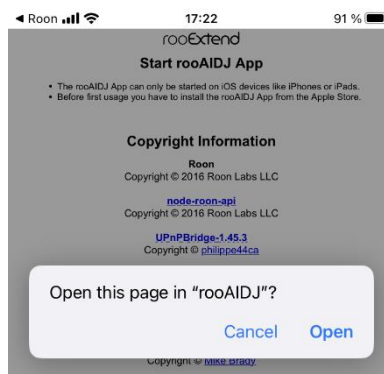


Figure 41 – Starting the rooAIDJ-App for the first time

- Select **Open** to start **rooAIDJ** for the first time:

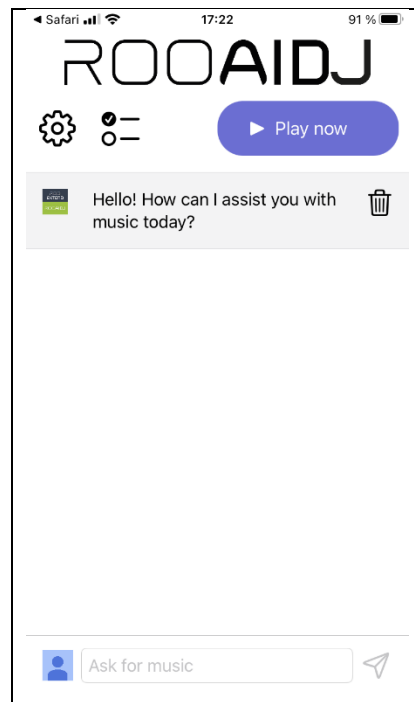


Figure 42 – rooAIDJ-App on the iPhone

rooAIDJ-App connects to the IP address of the rooExtend-Box. Therefore, when you start the App again, it will again automatically connect to the rooExtend-Box. The steps shown here only need be carried out once unless the IP address of your rooExtend Box changes.

You can find more about using **rooAIDJ** in the chapter "Using **rooAIDJ**".

Note:

If the IP address of your rooExtend-Box changes for whatever reason, these steps must be carried out again.

Prepate rooADi

With its DACs and ADCs of **the ADI-2 family** (ADI-2 DAC, ADI-2 Pro, ADI-2/4 Pro) - they are referred to here as ADI-2 DACs - the company RME offers state of the art devices in terms of measurement. They are therefore often referred to as "measuring devices" instead of "HiFi ADC/DAC".

Roon offers "Device Volume" as an option when setting up the ADI-2 DACs, but unfortunately it doesn't work.

With the latest firmware update of the ADI-2 DACs, the so-called "ADI2 Remote App" can be used. Not only device volume can be adjusted via USB with it, but also all other parameters. Fortunately, RME has published the protocol used here. This enabled the Roon extension **rooADi** to be developed for adjusting the device volume via Roon.

Note:

In order to use rooADi, the ADI-2 DAC must be connected to the rooExtend box via USB directly or via an USB hub.

To start up **rooADi** for the first time, proceed as follows:

- Connect your ADI-2 DAC to your rooExtend box via USB.

- Open Roon and activate your ADI-2 DAC by giving it a name in Roon in the **Settings/Audio** menu (here: “ADI-2”).

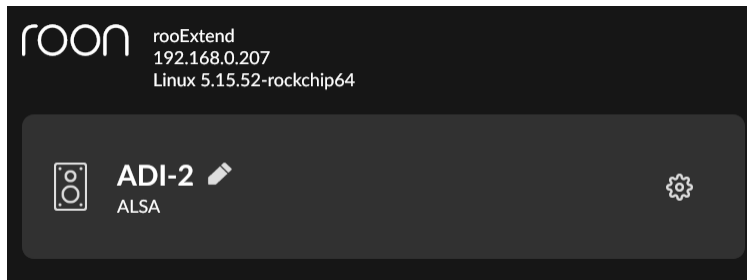


Figure 43 – Activating the ADI-2 DAC

- Then click on the gear icon and select **Device setup**.
- Select **rooADI: Volume** as the volume control.

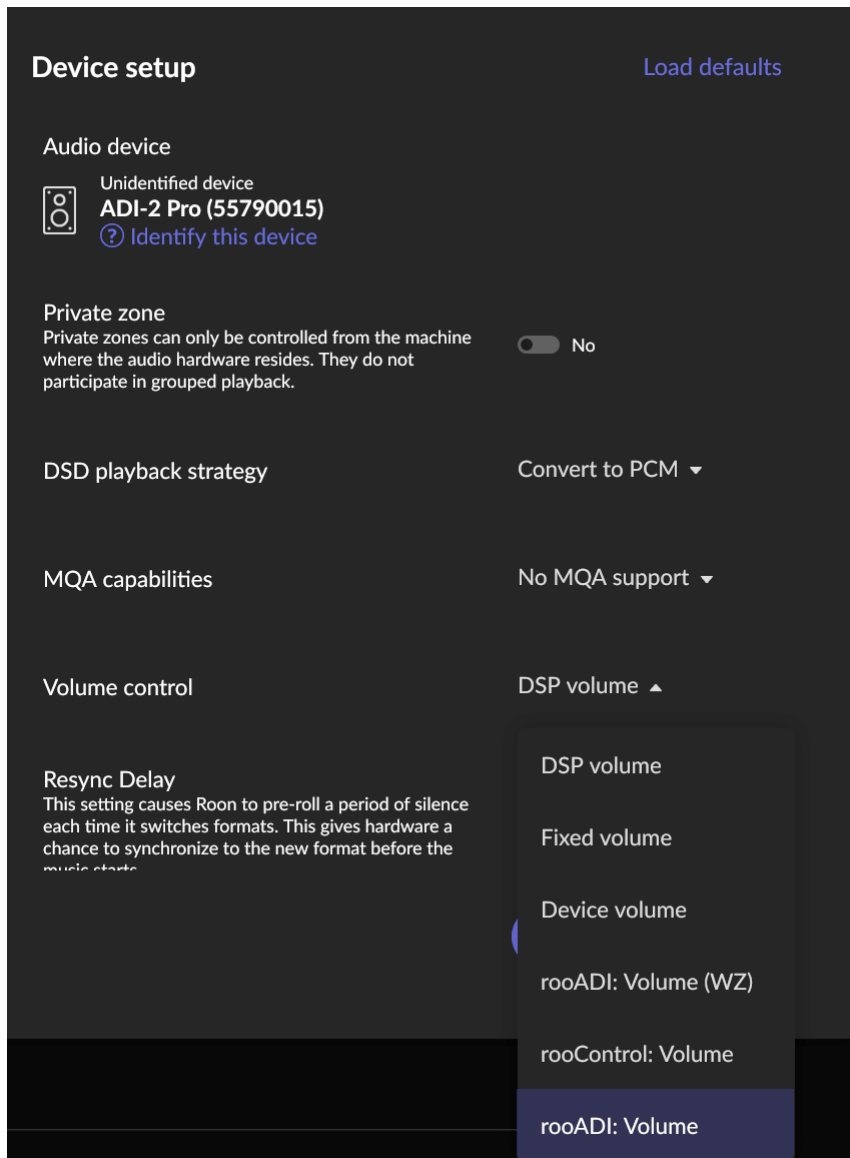


Figure 44 – Selection of the rooADI: Volume

- Click **Save** when finished.

If you have selected the ADI-2 as the playback device, the volume set on the ADI-2 will now appear in Roon below the speaker symbol.

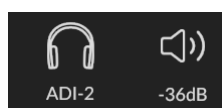


Figure 45 – Display of the volume set on the ADI-2

Licensing the Roon Extensions of the rooExtend-Box

All Roon Extensions that come with the rooExtend-Box are free to try out for sixty days. The sixty days run from the first use of the rooExtend-Box. After the sixty days, you can decide which of the Roon Extensions you want to use in the future.

In addition to individual licenses, a bundled license is also offered at a discounted price compared to the cost of each of the individual licenses. It includes rooDial, roo6D, rooWatch, rooUPnP and rooPlay.

Note:

When operating several rooExtend-Boxes at the same time (see chapter: "Multiple rooExtend-Boxes with one Roon CoreCore"), you should not use a bundled license, but individual licenses. The reason for this is that the Roon Extension rooUPnP may only be active once in a network, since several rooUPnP Roon Extensions running in parallel hinder each other.

The use of the Roon Extension rooControl and the use of USB DACs with Roon is possible without purchasing a license.

Buy licenses

For the Roon Extensions of the rooExtend-Box, you can purchase a license code for a small fee on the website <https://rooExtend.de>. You have the choice between annual or lifetime licenses.

Figure 46 shows the rooPlay checkout dialog, which you fill out for payment. In the top selection you decide which type of license you would like to purchase, i.e., **“Per Year”** or **“Lifelong”**. In addition to your name and e-mail address, your date of birth is required as an input. Payment can be made by credit card or PayPal. We recommend using **PayPal** for simplicity.

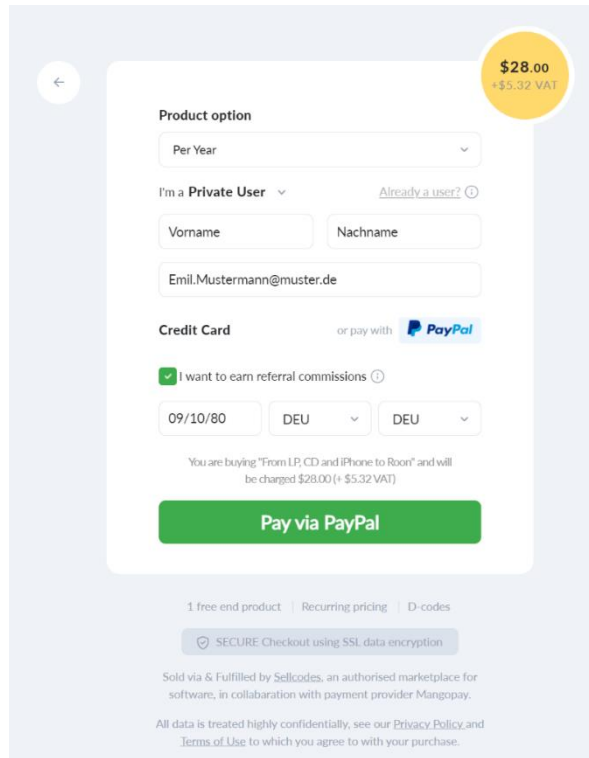


Figure 46 - Example of rooPlay's checkout dialog

The license key will be displayed in your browser immediately after purchase. You can copy it from here (CTRL+C in Windows) and paste it directly into rooExtend's License Manager to unlock the associated Roon Extension. You will also receive an e-mail confirmation of the purchase with an attached invoice as a PDF, which also contains the license key to be on the safe side. Figure 47 shows a sample of this invoice.

Buyer:		Seller: Definiteaudio Gmbh Germany DrCWO https://sellcodes.com/DrCWO Info@definiteaudio.de DE254963094		
Receipt for «From LP, CD and iPhone to Roon»		License: 1 free end product Product option: Life Long Invoice Number: INV-00097437		
CHARGING DATE	LICENSE KEY	ITEM PRICE	VAT	TOTAL
July 31st, 2022	610F2A70-9D4C-4CEC-9E2D-E	\$58.00	\$11.02	\$69.02
GRAND TOTAL:				\$69.02

Figure 47 - Sample invoice with license key

As the licenses are sold internationally, all amounts are shown and billed in US dollars.

Activate license

To unlock the Roon Extension for which you purchased the license key, open the menu in Roon and select **Settings/Extensions**. Then click on the **Settings** button of the **rooExtend License Manager**. In the dialog box you will see a section with all the Roon Extensions included in the rooExtend-Box (see: Figure 48).



Figure 48 - Roon Extensions for Licensing

Clicking on one of the blue + symbols in front of the Roon Extensions opens the associated licensing dialog. Figure 49 shows the **rooPlay** licensing dialog as an example.

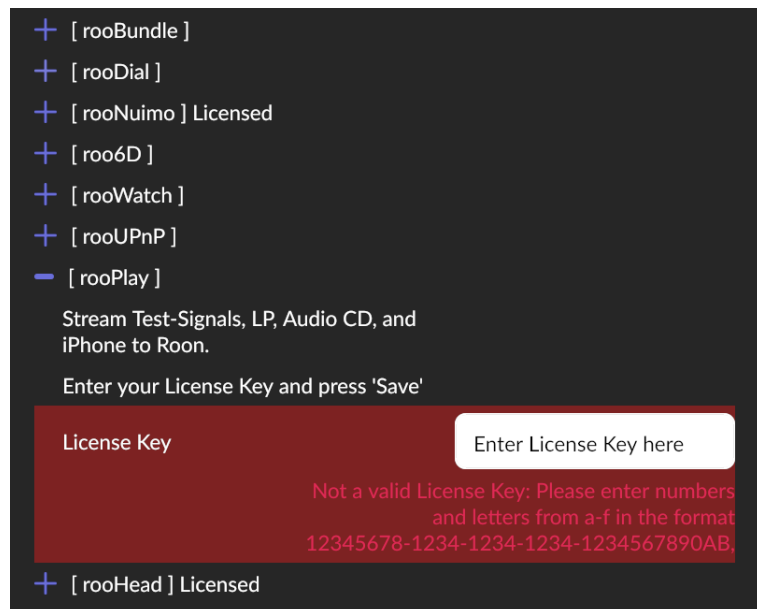


Figure 49 - rooPlay licensing dialog

Copy the purchased license key into the field indicated above and then press the blue **Save** button. The associated Roon Extension will then be launched and ready to run.

If you open the settings of the **rooExtend License Manager** again, the Roon Extension now appears as **Licensed**.

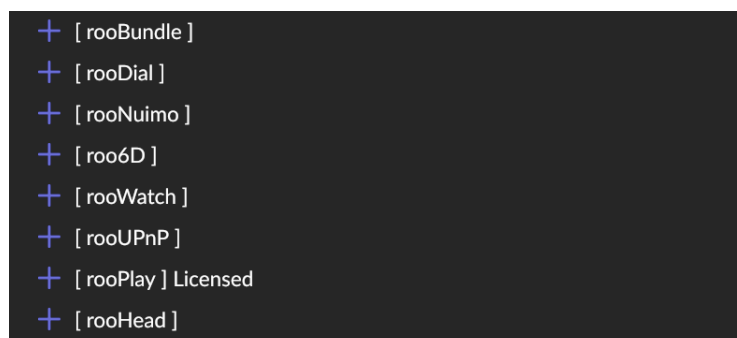


Figure 50 - Licensed Roon Extension rooPlay

For licensing the bundle license, proceed as shown in Figure 49 for rooPlay. Instead of rooPlay, open the rooBundle licensing dialog. Figure 51 shows the **settings** of the rooExtend License Manager after licensing the bundle license.

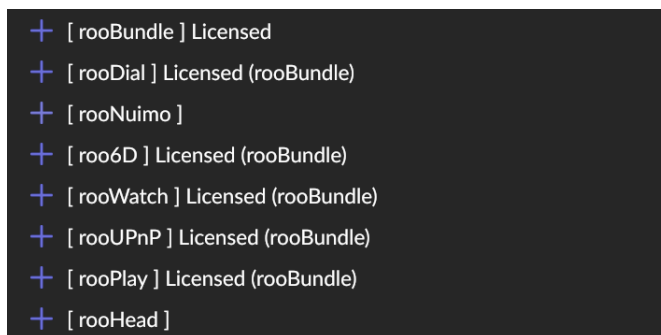


Figure 51 - Licensed Roon Extensions by bundle license

More settings in the rooExtend License Manager

In addition to the option of entering license keys for the Roon Extensions, the License Manager offers several other optional settings.

This includes the setting for network audio (see chapter: "Using USB DACs with the rooExtend-Box ") or the settings for selecting the SENIC Nuimo as a Roon control device (see chapter: "Prepare rooNuimo"). You can also assign a name for the rooExtend-Box (See chapter: "Multiple rooExtend-Boxes with one Roon CoreCore").

In addition to some self-explanatory settings (see Figure 52), the language setting for the Roon Extensions should also be noted. **English**, **German**, **French** and **Spanish** are supported as languages. If the language setting is set to **Automatic**, an attempt is made to determine the language based on the geodata of your Internet provider.

The system status is displayed in the lower part of the dialog. Here you can see, among other things, the release number of rooExtend, the IP number of the rooExtend-Box and whether an audio interface or a CD-ROM drive was detected.

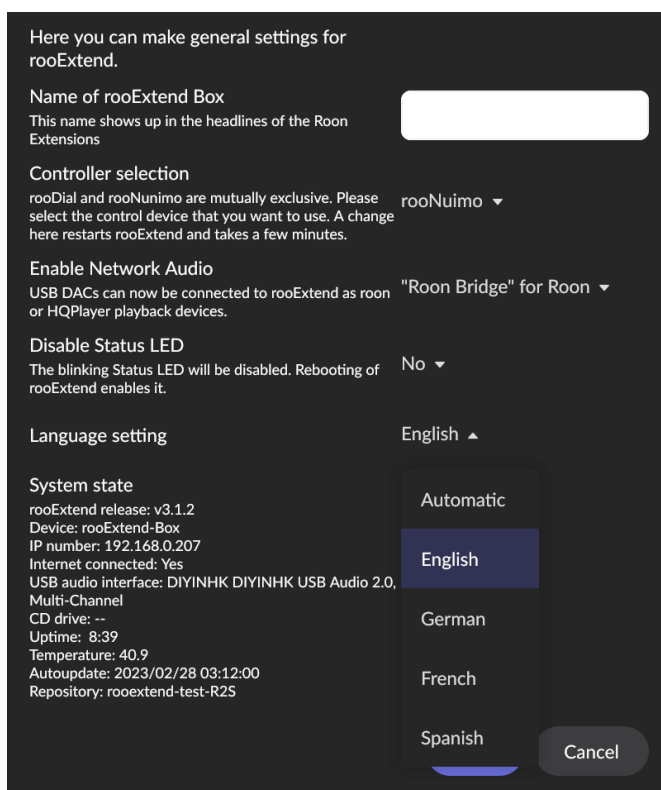


Figure 52 - Additional Settings in the rooExtend License Manager

Using the Roon Extensions of the rooExtend-Box

The Roon Extensions provided by the rooExtend-Box integrate seamlessly into Roon after performing the initial settings (see chapter: "Installation"). Therefore, no further settings usually have to be made to the individual Roon Extensions during operation.

Using rooDial

With rooDial you can control not only the volume of a Roon Zone but also specific actions such as play and stop. Each gesture is defined in the rooDial settings, which you can access in the Roon menu via **Settings/Extensions**.

In the **settings** of rooDial (see: Figure 53), you can assign the actions in Roon that are performed when the Microsoft Surface Dial is pressed, double-pressed, triple-pressed, long-pressed and rotated.

Only one Microsoft Surface Dial can be used with each rooExtend-Box. However, the simultaneous operation of rooDial and roo6D is possible with a single rooExtend-Box (see chapter: "Using a USB-Hub with the rooExtend-Box"). Information on the operation of several rooExtend-Boxes with your Roon Core can be found in the chapter: "Multiple rooExtend-Boxes with one Roon CoreCore"

Note:

Please note that in the rooDial settings, the zone that you want to control with the Microsoft Surface Dial must be selected as the playback zone.

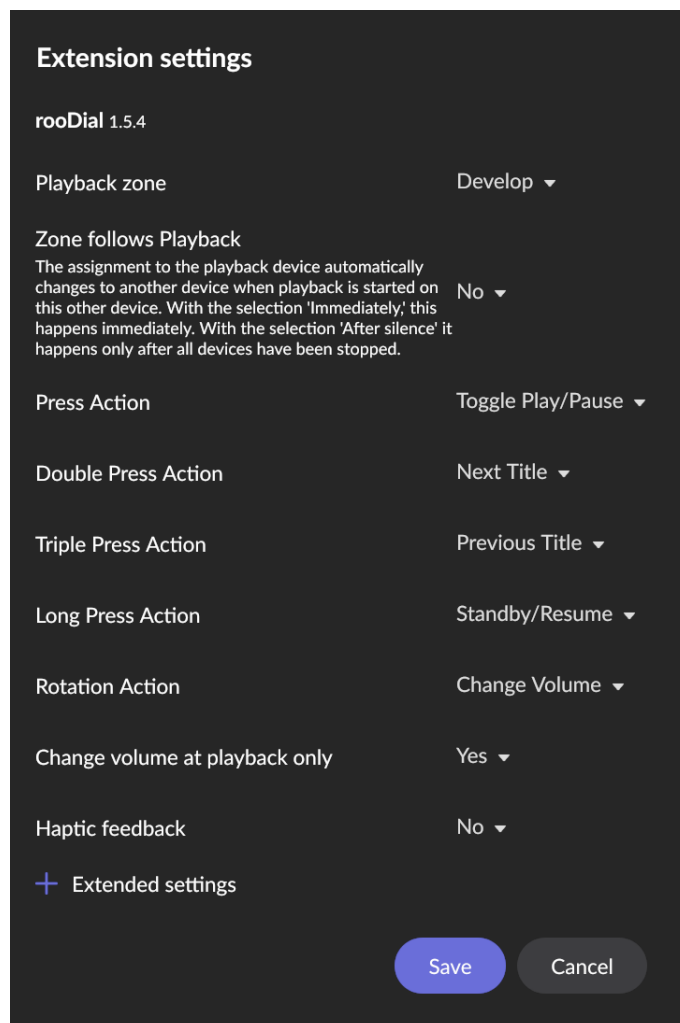


Figure 53 - Settings of rooDial

Using roo6D

With roo6D you can control not only the volume of a Roon Zone but also specific actions such as play and stop. Each gesture is defined in the rooDial settings, which you can access in the Roon menu via **Settings/Extensions**.

In the **settings** of roo6D (see: Figure 54) you can assign the actions in Roon that are performed during the different movements of the button of the SpaceMouse® Wireless.

In addition to the functions offered by rooDial, roo6D can also be used to start a radio station and a playlist with a gesture of the button.

Pushing the button to the right or left always fast forwards or rewinds in the current track.

Only one SpaceMouse® Wireless can be used with each rooExtend-Box. However, the simultaneous operation of rooDial and roo6D is possible with a single rooExtend-Box (see chapter: "**Fehler! Verweisquelle konnte nicht gefunden werden.**"). Information on the operation of several rooExtend-Boxes with your Roon Core can be found in the chapter: "Multiple rooExtend-Boxes with one Roon CoreCore"

Note:

Please note that in the settings of roo6D, the zone that you want to control with the SpaceMouse® Wireless must be selected as the playback zone.

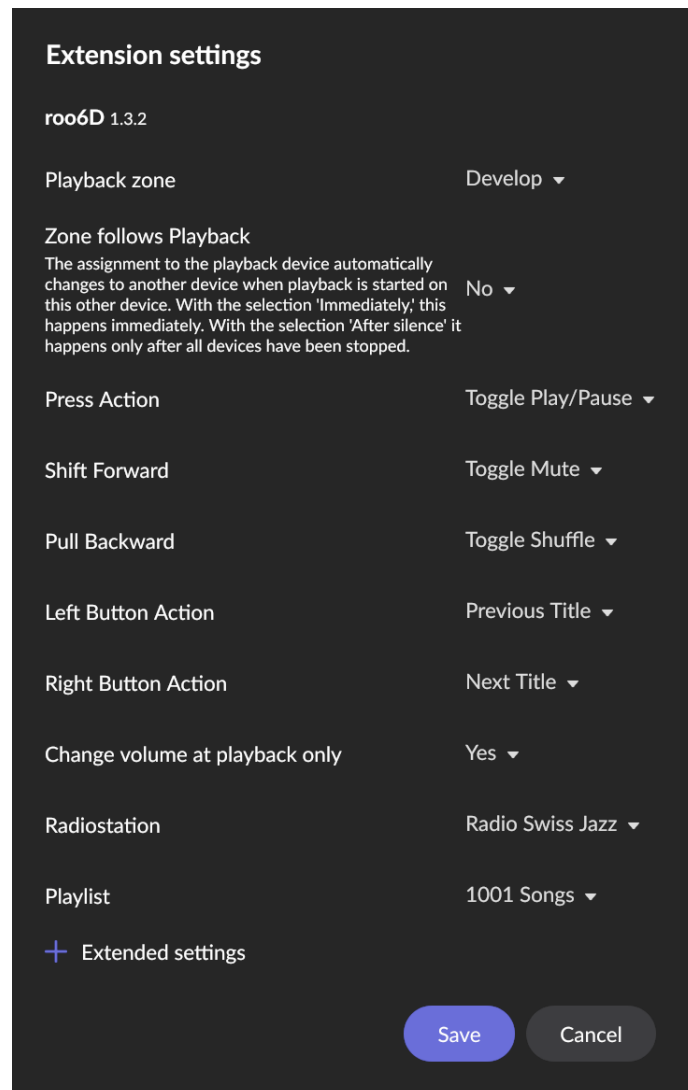


Figure 54 - Settings of roo6D

Using rooNuimo

The SENIC Nuimo is the control device that offers the most possibilities. Turning the ring on the Nuimo changes the volume, which is also shown on the Nuimo display. In addition, the Nuimo has a touch-sensitive surface. The surface supports swipe gestures and can be touched left, right, and down or long touched. In addition, the surface can also be pressed, which toggles stop/play. You can also start a radio station or a playlist here.

This allows you to configure your Nuimo in the way that feels best for you personally.

Exactly one SENIC Nuimo can be used per rooExtend-Box. However, the simultaneous operation of rooNuimo and roo6D with one rooExtend-Box is possible (see chapter: "**Fehler! Verweisquelle konnte nicht gefunden werden.**"). Information on the operation of several rooExtend-Boxes with your Roon Core can be found in the chapter: "Multiple rooExtend-Boxes with one Roon CoreCore"

Note:

Please note that in the settings of rooNuimo, the zone that you want to control with the SENIC Nuimo is always selected as playback zone.

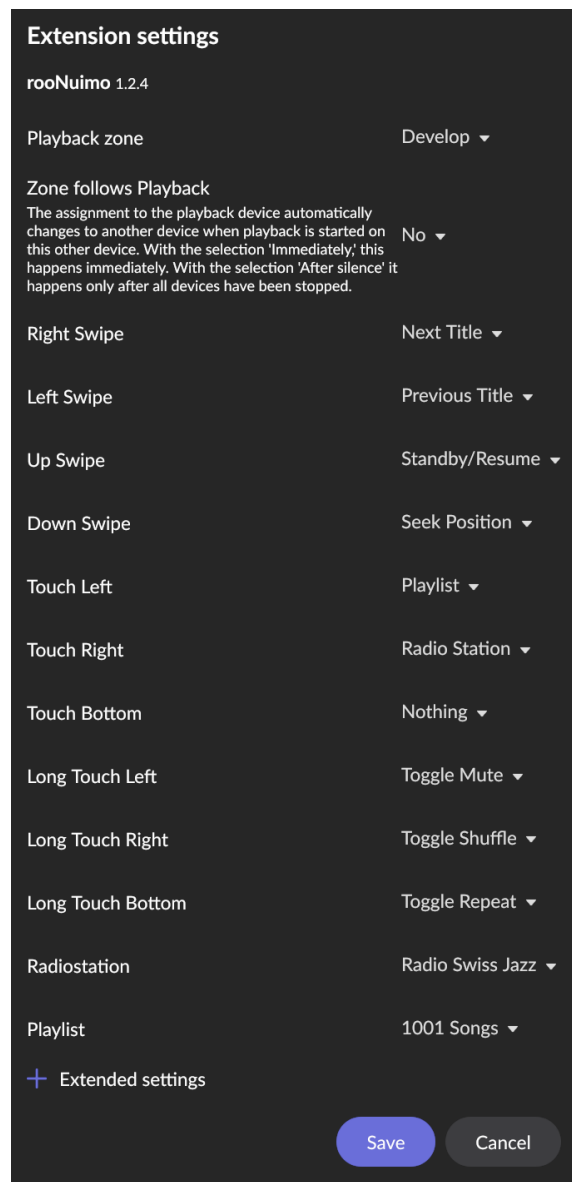


Figure 55 - RooNuimo Settings

Using rooWatch

After setting up rooWatch as described in the chapter "Prepare rooWatch", rooWatch is easy to use. If you have selected a zone in the rooWatch app (see: chapter: "Selection of the zone to be controlled") in which playback is currently running, you will see the cover art of the album played on the Apple Watch.

The rooWatchApp supports the following functions and gestures:

- Turning the crown changes the **volume**. The current volume is displayed on the Apple Watch screen.
- Swiping your finger down opens the **Options menu**. Here you can change the settings. Tapping on the top left will bring you back.
- Swiping your finger up opens the the **Roon Queue**. It shows the queue with the upcoming titles. Tapping on the top left will bring you back.
- A short tap in the middle switches between **play and pause**.
- Long touch in the middle opens the **actions menu**. This allows the following functions: Shuffle: On/Off, Loop: On/Off, Transfer Zone, Standby/Resume. Tapping on the top left will bring you back.
- Double-tap in the middle opens the **Browse menu**. Here you can access your Roon library, playlists, radio stations, genres, and various other settings.

Using rooControl

If you now click on the speaker icon of the associated audio device, you will see a blue power button (active), which changes color to red (inactive) when clicked.

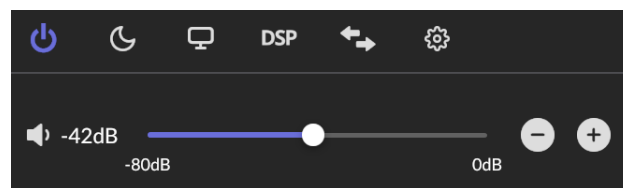


Figure 56 – Active Trigger Signal

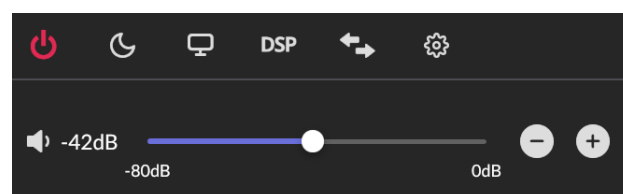


Figure 57 – Inactive trigger signal

Now you can connect the USB port(s) assigned in Figure 21 to the trigger input of your audio devices for example via a **DZYDZR 3.5mm** control cable to turn them on and off via Roon.



Figure 58 – Control Cable for Connecting the USB Port to the trigger Input Trig

Using rooPlay

After setting up rooPlay as described in the chapter "Prepare rooPlay", rooPlay is easy to use.

Playback from Apple devices

As with all Apple devices, you must first connect the Apple device to your rooExtend-Box. To do so, select the external loudspeaker rooExtend in the connection menu of your Apple device.

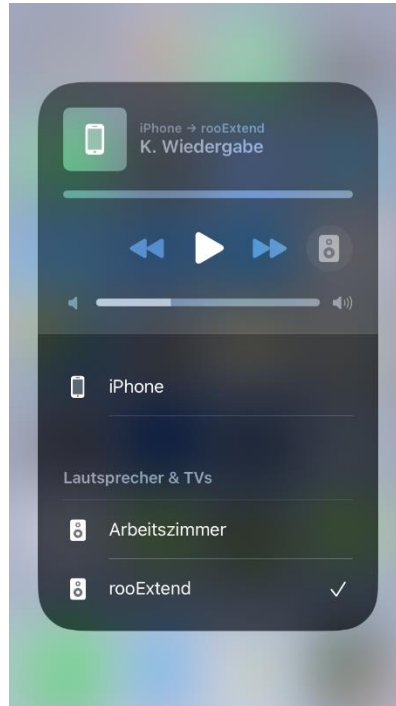


Figure 59 - iOS 16 Connection Menu

If you then start audio playback on your Apple device, Roon will automatically start playing the rooPlay radio station (see: Figure 33 - View of Roon during playback of the rooPlay radio station). After a short delay (between three and ten seconds) you will hear the audio playback via the playback zone selected in rooPlay. You can stop playback via the Apple device or via the Roon **stop** button. The volume of the playback zone is controlled by Roon. The volume control on your Apple device has no function in this operating mode.

Playback from CD

If a CD-ROM drive is connected to your rooExtend-Box via USB (see chapter: "Prepare rooPlay"), all you need to do is insert a CD and, if needed, to close the CD drive tray.

The drive now tries to recognize your audio CD (only normal Redbook audio CDs are supported) and then starts reading the audio CD. The speed of the CD-ROM drive is reduced as much as possible to prevent annoying drive noise.

Playback of the rooPlay radio station starts automatically in Roon (see: Figure 33) and after the loading time (approx. 25 seconds) you can hear the audio from the CD via the playback zone selected in rooPlay. The stop button in Roon stops playback and ejects the audio CD.

There are two methods to control CD playback (next track, previous track):

In the first method (the easy one), use one of the Roon Extensions rooDial, roo6D, rooNuimo or rooWatch. They all support CD playback. If you select the Next Track or Previous Track gesture with one of those control devices while a CD is playing, you will jump to the next or previous track on the CD.

For the second method, open the Roon menu **Settings/Extensions** and then click on the rooPlay **Settings** button. During playback of an audio CD, you will see **commands for the CD drive** in the last line.

Here you can now jump to the next or previous title (see: Figure 60). The ejection of the CD can also be controlled here. the selected command is actioned by pressing the **Save** button.

Note:

During the time it takes to switch to the next or previous track, rooPlay mutes playback, which you can see in Roon by a small cross on the loudspeaker symbol in the playback zone. After successfully changing the track, mute is removed, and the cross disappears.

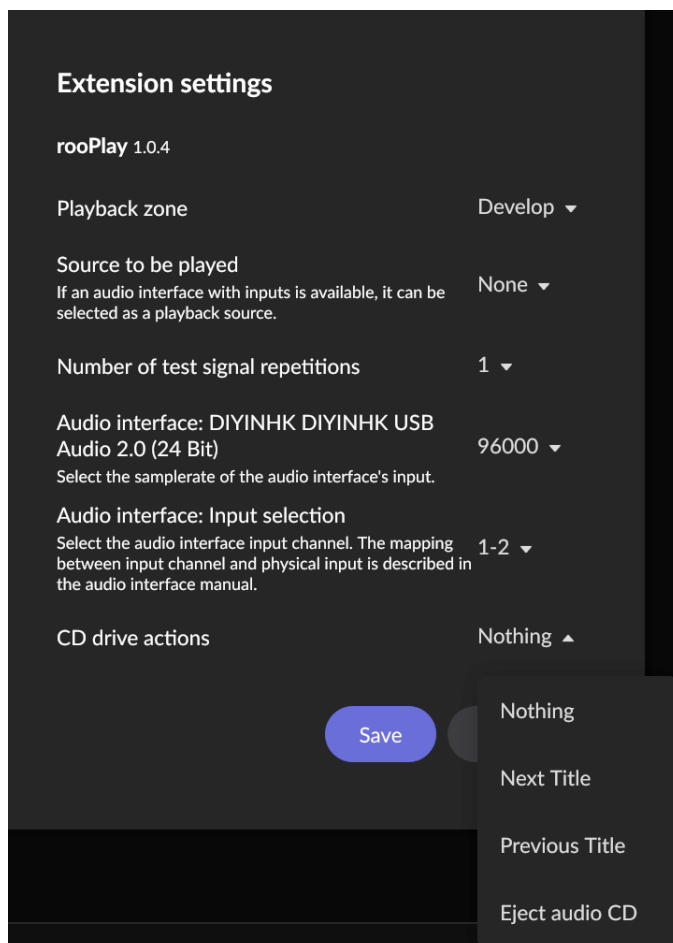


Figure 60 - CD Playback Control

Note:

The CD drive commands are only visible in the rooPlay settings when CD playback is running.

Playback from an audio interface

There are two methods to start playback from an audio interface.

The first way (the easy one) is to configure your own radio station for the audio interface (see chapter: "Create additional radio stations (optional) for playback from the audio interface"). Once you have done that, you can, for example, simply start playing from your LP by starting the LP radio station you set up. This works in the same way as with playback from any other radio station.

The second method is through the rooPlay Roon Extension **settings**, which you can see in Figure 61. The audio interface recognized by rooPlay is displayed there and you can choose the sampling rate for your audio interface. For audio interfaces with more than two channels (two channels = stereo), you can also select which of the inputs should be used by rooPlay.

In **Playback zone**, set the zone for rooPlay audio playback. Click the **Save** button and playback will begin.

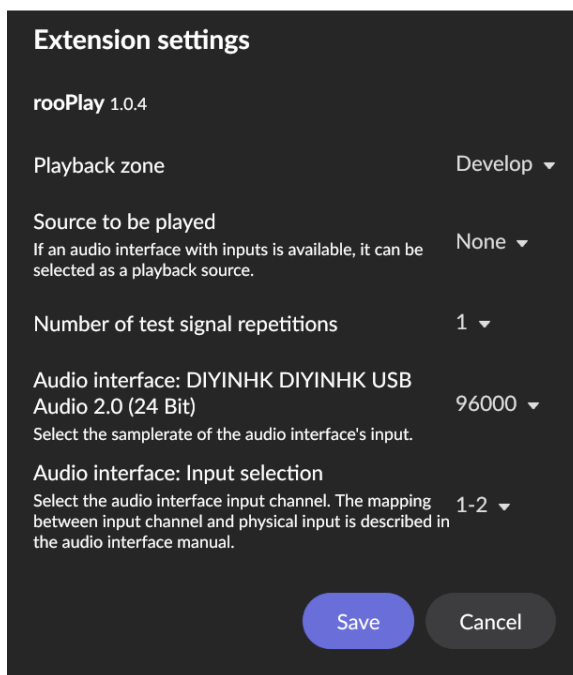


Figure 61 - Settings for the audio interface in rooPlay

Note:
If the audio interface did not show up in the rooPlay settings, it is not compatible with USB Audio Class 2 and cannot be used.

Note:
Playback from the audio interface via Roon is clearly time-delayed and is therefore not suitable for playback of picture-synchronous television sound.

Record audio from audio interface as FLAC

Audio that is fed into rooPlay via an audio interface (e.g., from a turntable) can be recorded on a USB memory stick at the same time as playback. With this function it is possible to easily digitize LPs in the highest audio quality during playback.

Everything will be recorded in the FLAC file in between starting the radio station of rooPlay to stopping the radio station. The FLAC file is recorded in the quality that your chosen audio interface offers (up to 24/192).

Each start of the rooPlay radio station creates a new FLAC file on the USB memory stick. The file names are: Recording_xx.flac where xx stands for a number that increases with each recording.

Note:
The USB memory stick used must be formatted in either FAT32 or NTFS to be accepted by rooPlay.

You can plug in the USB memory stick at any time. While recording, the status bar of the rooExtend License Manager shows that a recording is taking place (see: Figure 62).



Figure 62 - Display while recording on USB memory stick

When the recording is finished, a message is displayed that the USB memory stick can be removed.

Using rooHead

After the settings have been made, click on "**Save**" and observe the outputs in the status line of rooHead. After completion of the calculation is complete, the following will be displayed:

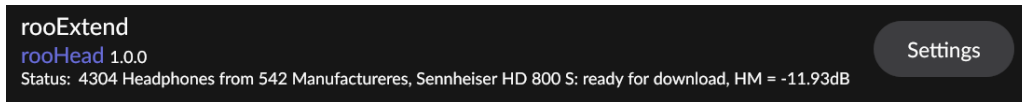


Figure 63 – Status bar of rooHead after equalizer calculation

Please note the number at the end of the status line (here: **-11.93**). It will be required later for setting up the Headroom adjustment correction.

A click on the blue word **rooHead** starts the download and a ZIP file named **rooHead.zip** will appear in the download folder of your PC or MAC.

Note:

The download folder of Windows 10 PCs cannot be accessed from within Roon. You must therefore copy the ZIP file to a directory that Roon can access.

Now select the playback zone in Roon in which your headphones are located and open the volume control and click on the word "DSP".

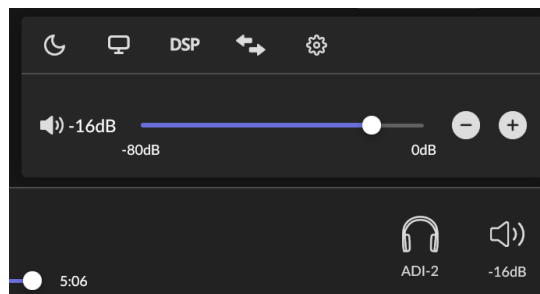


Figure 64 – Open the Roon DSP

Then click on "Add Filter" in the left column and then on "Convolution". With the button "Browse..." find the rooHead.zip file and select it. Figure 45 shows the Roon screen after loading the equalizer.

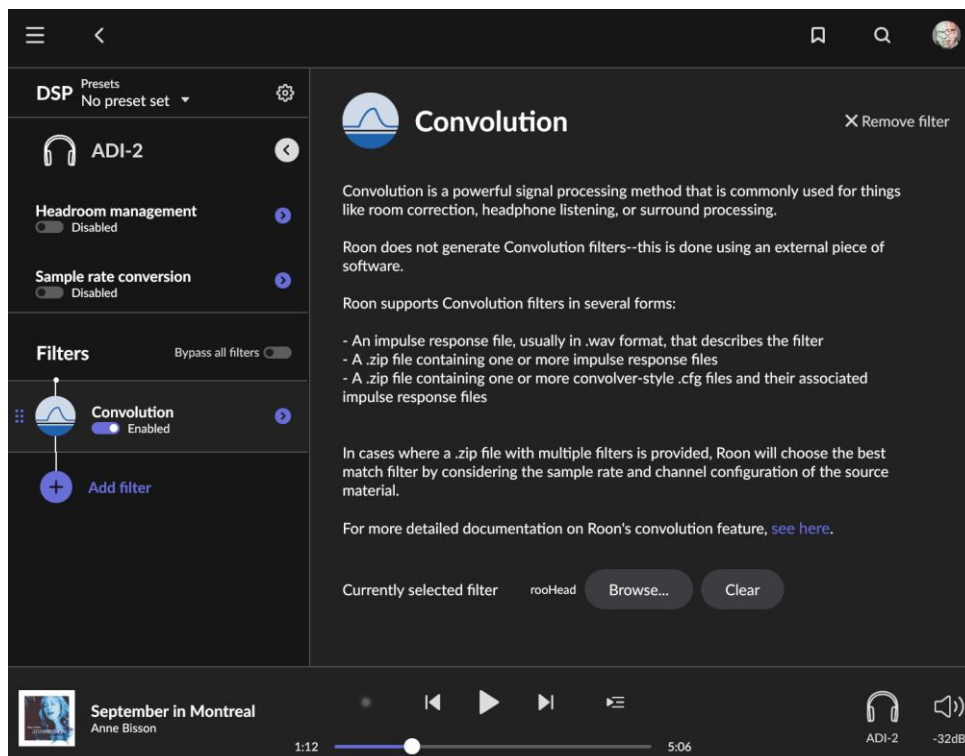


Figure 65 – Display in Roon after loading the equalizer

To complete the setup, activate the "Headroom correction" and set the value for the headroom that you noted earlier (in this example, **-11.93**). You should also check the "**Show clipping indicator**" option.

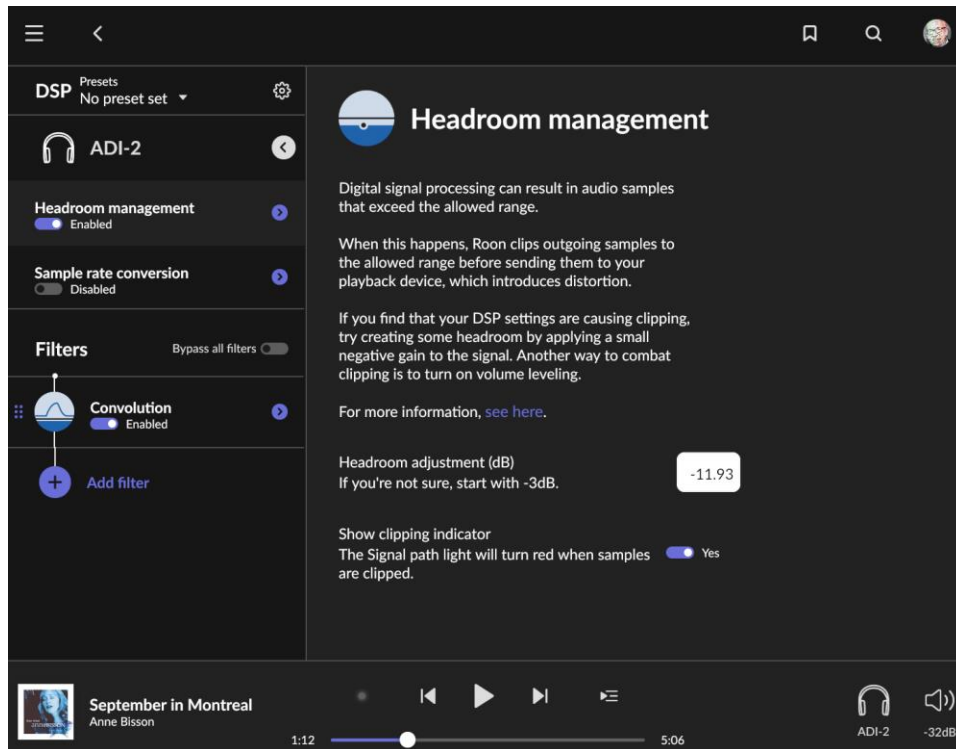


Figure 66 – Display in Roon after activating Headroom adjustment.

The equalizer is now active, and you can start playing the music. To compare playback with and without the equalizer, turn "**Bypass All Filters**" **on** or **off** (see the left column in Figure 66 above).

Using rooAIDJ

The **rooAIDJ-App** can be used right after its first successful start (see chapter: "Prepare rooAIDJ").

The **rooAIDJ-App** offers an a field at the bottom edge for inputting chat with **rooAIDJ**. The chat requests are sent by touching the arrow to the right of the input field or by pressing Return on a connected keyboard.

After tapping the input field, the virtual keyboard opens and requests or commands for **rooAIDJ** can either be typed in or spoken using the microphone symbol (see: Figure 67).

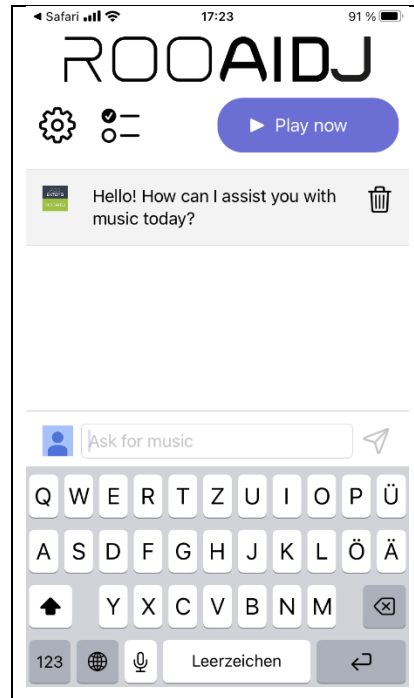


Figure 67 – rooAIDJ-App with keyboard

Figure 68 shows an example of how a chat with **rooAIDJ** might look like. Questions about albums, genres or any other questions can also be entered to **rooAIDJ**.

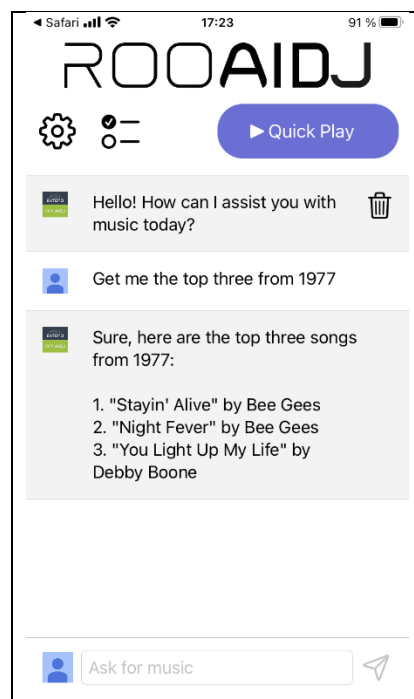


Figure 68 – rooAIDJ-App with chat

Touching the blue Quick Play button at the top right, the **rooAIDJ-App** shows the playback zones available in Roon. Touch one of them and the tracks will be played in the corresponding playback zone. At the same time, the queue appears in the **rooAIDJ-App** with some self-explanatory control options (see: Figure 69). Dragging the playlist down you can return to chat with **rooAIDJ**. Touching the rooAIDJ logo at the top will bring up the queue again.

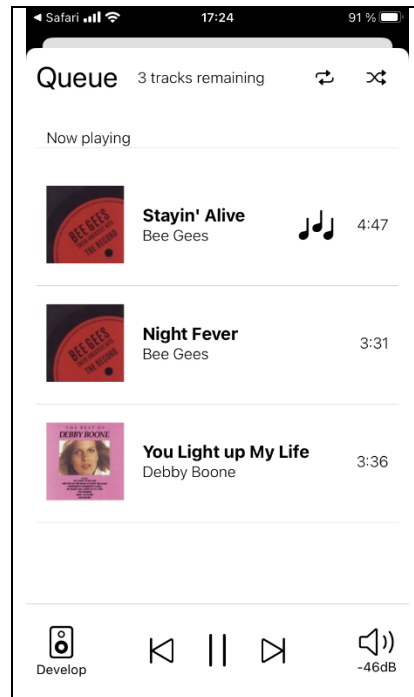


Figure 69 – rooAIDJ-App with Queue

If required, the content of the playlist can be saved to a local playlist in the **rooAIDJ-App**. These playlists can be opened using the list icon left of the Quick play button (see: Figure 68).

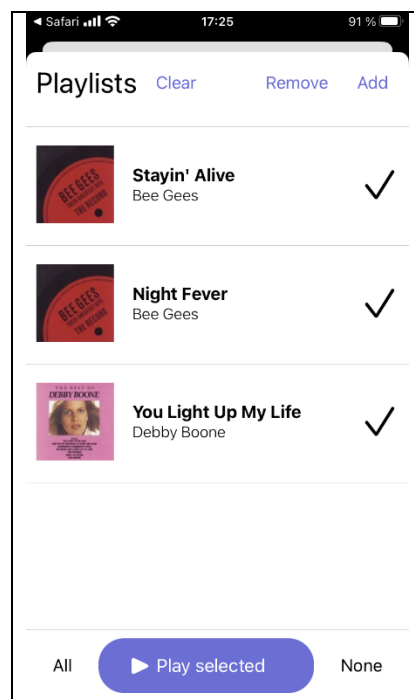


Figure 70 – rooAIDJ-App with Playlist

On the far left of the main screen you can select the gear icon to access, a number of additional settings (see:Figure 71).

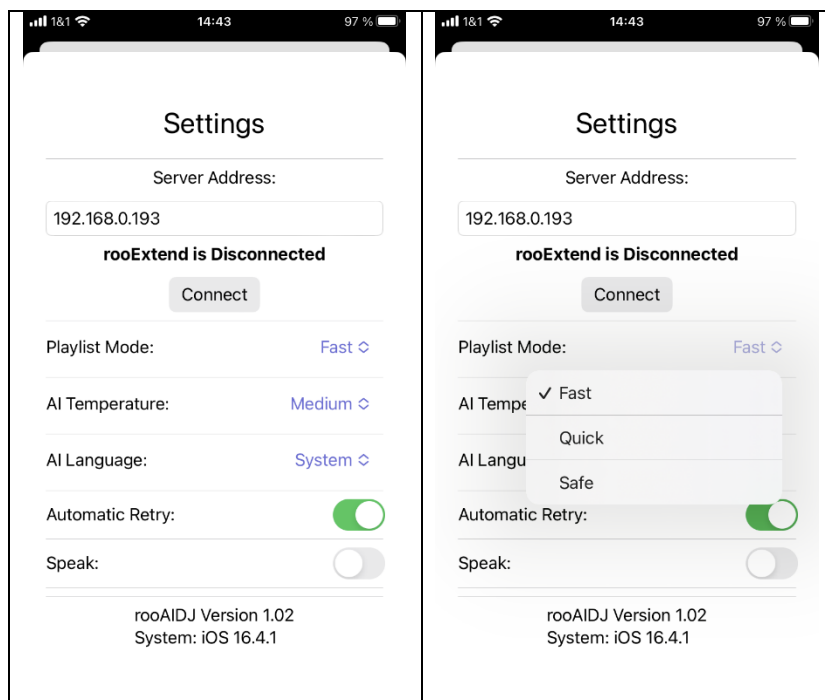


Figure 71 – rooAIDJ-App settings

At the top of this screen, you can see the IP address of the rooExtend-Box that was set correctly by the rooAIDJ setup procedure (see chapter: "Prepare rooAIDJ") which does not need to be changed.

Playlist Mode:

The **rooAIDJ-App** uses OpenAI's ChatGPT in the background. The answers from ChatGPT are based on natural language and do not follow any formal specification. If the Playlist Mode **Quick** is activated, **rooAIDJ** tries to interpret the output to determine the artist, album, and the name of the track. In most cases this works well, however not always without errors. If it worked the text "**Quick Play**" on the blue play button will be shown.

The Playlist Modes **Fast** and **Safe** come into play if the output could not be interpreted. In Playlist Mode **Fast**, ChatGPT is prompted to deliver a formatted list, which usually works more reliably than **Quick** but takes a little longer to commence playback. A formal list is requested in Playlist Mode **Safe**. This always works reliably but sometimes takes a long time.

AI Temperature:

Generated text with a lower temperature is more focused and conservative, while generated text with a higher temperature is more creative and varied.

AI Language:

By default, the system language of the Apple device is used to communicate with ChatGPT. This this can be manually overridden in the AI Language setting.

Automatic Retry:

If the interpretation of the outputs of ChatGPT by **rooAIDJ** did not work, after pressing **Quick Play** the query is carried carried out again automatically if **Automatic Retry** is activated.

Speak:

ChatGPT outputs are translated to spoken words and played by the speaker of your Apple device.

Note:

rooAIDJ uses a commercial license from ChatGPT for which definiteAudio GmbH must pay monthly fees depending on usage. To prevent excessive use, the length of the chats is limited to a maximum of 10 questions and answers. After that, the chat history will be deleted, and a new chat can be started.

These fees are outside the control of definiteAudio GmbH. definiteAudio GmbH reserves the right to adjust the prices for rooAIDJ if this becomes economically necessary.

Using rooADI

After successfully setting up **rooADI** (see chapter: "Prepate rooADI"), you can use the rooADI settings to determine how the volume setting in Roon affects the ADI-2. To do this, first open in Roon **Settings/Extensions**. You will find the Roon extension **rooADI** there.



Figure 72 – rooADI settings

The status line shows which ADI-2 DAC was found. In addition, the two Pro models show which Basic and CC mode they are in. These two modes have a strong impact on the DAC's signal source selection that can be done in the settings.

To make further settings, click **Settings**. With the two Pro DACs you can determine which of the outputs the volume setting in Roon affects. With the ADI-2 DAC, the three outputs Line, Headphones and IEM can be selected.

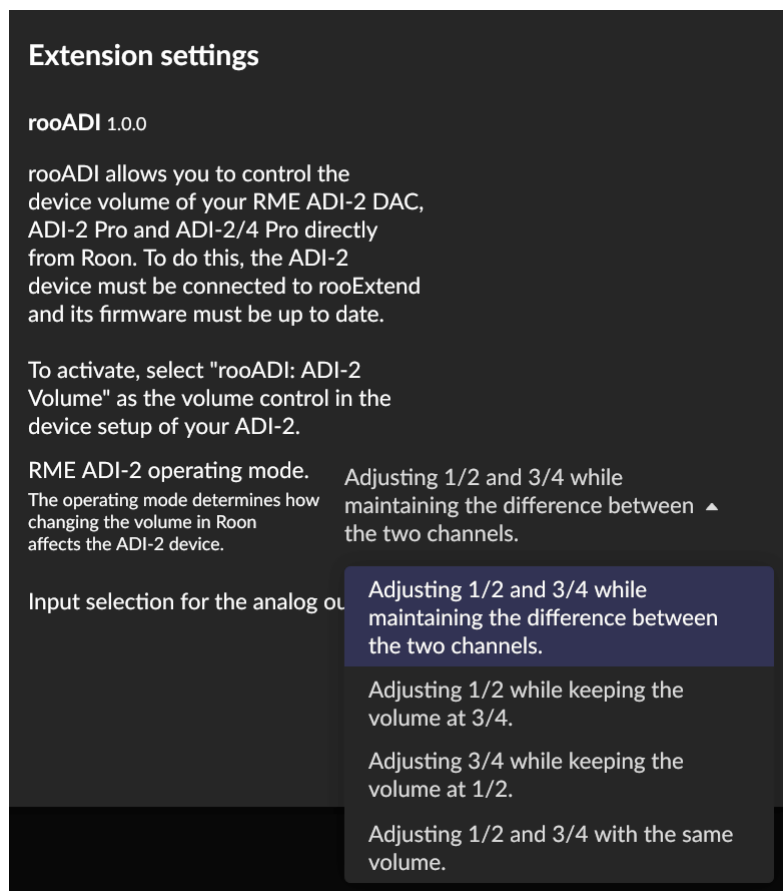


Figure 73 – Connection between Roon Volume and DAC Volume (here ADI-2 Pro FS)

Depending on the Basic and CC mode settings on the ADI-2 DAC, the possible signal source can be selected. Further information can be found in the manuals of the individual DACs ([ADI-2 DAC](#) Chapter 31, [ADI-2 Pro](#) and [ADI-2/4 Pro](#) each Chapter 17)

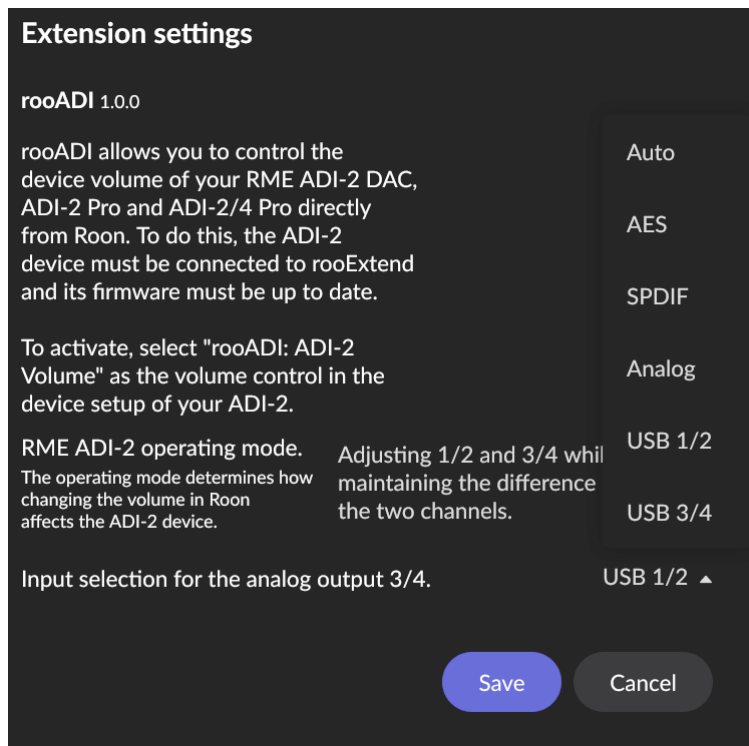


Figure 74 – Source selection

The implementation of device volume setting is bidirectional. This means that when you turn the knob on the ADI-2 DAC, the volume displayed in Roon also changes. The same applies when adjusting the volume using the remote control of the ADI-2 DAC.

Changing the volume in Roon causes the device volume to be adjusted for the channel selected in the settings. If you select the mute function in Roon, this will also be transferred to the ADI-2 DAC.

Note:

All ADI-2 DACs offer an "Auto Ref Level" setting. If this is set to "ON" in the DAC, you can change the volume over a wide range from Roon without losing bits of resolution (as with the DSP volume). Therefore the dynamic range of the DAC chips is less influenced. Everyone may decide for himself whether this "theoretical" advantage leads to a noticeable improvement in sound in practice.

Note:

When using the device volume, the ADI-2 DACs offer the option for correct loudness control when used in conjunction with "Auto Ref Level". This can also be used with rooADI.

Using USB DACs with the rooExtend-Box

In addition to the Roon Bridge®, the Network Audio Adapter (NAA) for the HQPlayer from Signalyst is also integrated in the rooExtend-Box. The rooExtend-Box can therefore be used as a Roon playback device or as a HQPlayer playback device for USB DACs. Operation as a playback device is always possible, even without licensing any Roon Extension of the rooExtend-Box.

For all USB DACs that support USB Audio Class 2, rooExtend can be used as a Roon playback device and is automatically displayed in the Roon menu **Settings/Audio**.

Note:

Many USB DACs appear to have a working device volume in roon, but this is often not the case. If you have such a DAC where volume control does not work with device volume, please use DSP volume instead.

The choice of whether to activate Roon Bridge (default setting), the NAA or both is made in the settings of the rooExtend License Manager (see: Figure 75). In addition to choosing between the Roon Bridge and the NAA, the function can also be completely deactivated.

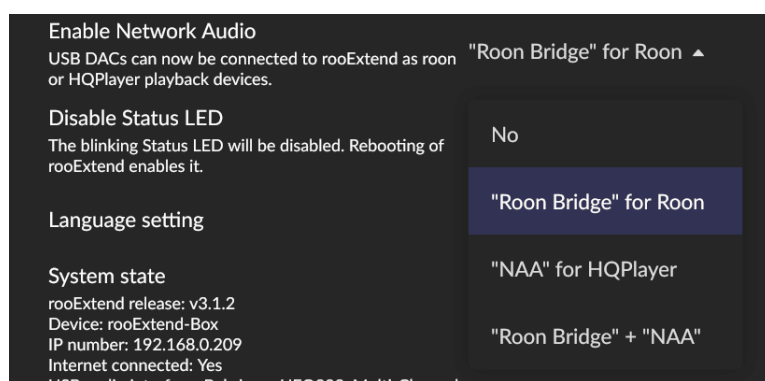


Figure 75 - Selecting Network Audio

Using Bluetooth speakers and headphones with the rooExtend-Box

The rooExtend-Box not only makes USB DACs usable with Roon, but also Bluetooth speakers and Bluetooth headphones!

There are two ways to do this:

1. Plug a **"USB Bluetooth 5.2 Audio Adapter"** from **ZEXMTE** into the USB socket of the rooExtend-Box. This is recognized by Roon as an audio device (in Roon: **Settings/Audio**). After connecting to a Bluetooth speaker or Bluetooth headphones, Roon music can be easily played to these devices. Since the USB Bluetooth 5.2 audio adapter from ZEXMTE also supports **APT-X-HD**, a high-quality transmission up to 96kHz sampling rate is possible as far as supported by the connected Bluetooth device.
2. Plug a **"FiiO BTA30 Pro"** box into the USB socket of the rooExtend-Box. This is recognized by Roon as an audio device (in Roon: **Settings/Audio**). After connecting to a Bluetooth speaker or Bluetooth headphones, Roon music can be easily played to these devices. The FiiO BTA30 Pro supports Sony's **LDAC codec** and thus enables lossless data transmission to all SONY headphones.

Using a USB-Hub with the rooExtend-Box

It may be necessary to have more than one USB slot to use multiple features of the rooExtend-box at the same time.

By connecting a USB HUB, you can use the following devices simultaneously with the rooExtend-Box::

- Bluetooth antenna for rooDial or rooNuimo
- 3Dconnexion Universal Receiver for roo6D
- CD-ROM drive for rooPlay
- Audio interface for rooPlay
- USB memory stick for recording audio for rooPlay
- USB DAC for playback of audio via the Roon Bridge
- Several trigger cables for rooControl.

A simple USB-2 HUB is suitable for connecting multiple devices.

The disadvantage of a simple USB HUB, however, is that the USB socket of the rooExtend-Box must supply all the power required by the equipment. This can quickly lead to an overload of the socket and thus to a malfunction of the rooExtend-Box.

It is therefore highly recommended to use a powered USB 2 or USB 3 HUB that has its own power adapter to power the devices.

Note:

The Amazon Basics USB 3 HUB with model number HU9002V1EBL meets all requirements for rooExtend and is the only USB HUB that can be used for rooControl.

If the use of rooControl is not important, any active USB 2 or USB 3 HUB with its own power supply unit can be used.

Note:

If you disconnect the rooExtend-Box from its power supply (USB-C plug) and you have connected a powered USB HUB, the USB hub must also be disconnected from the power supply.

When switching on, make sure that the powered USB hub is supplied with power first, before the rooExtend-Box is connected to its power supply.

Appendix

Meaning of the flashing signals of the red LED

Depending on the operating state of the rooExtend-Box, the red LED on the front emits flashing signals. The signals have the following meaning:

- The red LED lights up relatively dimly all the time:
The rooExtend-Box is trying to load the firmware immediately after power on.
- The red LED shows a double flash approx. 1 second apart:
The rooExtend-Box is initializing its firmware.
- The red LED is dark:
The firmware is initializing and the rooExtend Roon Extensions are loading.
- The red LED is on for one second every two seconds:
The Roon Extensions are loading and waiting for user activation. To do this, go to **Settings/Extensions** in Roon and then click the **Enable** button of the rooExtend License Manager.
- The red LED flashes every two seconds:
The rooExtend License Manager is activated and rooExtend is ready to use.
- The red LED flashes every two seconds: All rooExtend extensions are activated and rooExtend is ready for use.
- The red LED flickers during operation:
If, for example, the SpaceMouse or the SurfaceDial is used, the red LED flickers and thus indicates the activity of the input devices.
- The red LED lights continuously:
The firmware is updating (between 2:00am and 4:00am local time). Please ensure that rooExtend is not switched off or loses power in this state!

Microsoft Surface Dial Connection Issues

There are situations, especially if the Microsoft Surface Dial has already been connected to another device or PC, in which it can no longer be connected to rooExtend. To re-connect to rooExtend, proceed as follows:

- Turn off the device(es) to which the Microsoft Surface Dial was previously connected.
- Remove the batteries from the Microsoft Surface Dial and reinsert them after about 30 seconds.
- Unplug the USB-C power cable from the rooExtend-Box.
- After about 30 seconds, plug the USB-C power cable back into the rooExtend-Box.
- Reset the rooExtend-Box to its factory settings (see chapter: "The Service Page").
- Open Roon and select **Settings/Extensions** from the menu.
- Wait until the Roon Extension rooDial becomes visible.
- Check if the status bar of rooDial says *unpaired*. If not, you must reset the rooExtend-Box (chapter: "The Service Page").
- Now try again - as described in chapter "Prepare rooDial" - to establish the connection between the Surface Dial and the rooExtend-Box.

Firmware update for the rooExtend-Box

The rooExtend-Box checks daily between 2:00 a.m. and 4:00 a.m. local time for new firmware updates and installs them automatically. This means that the rooExtend-Box must not be switched off during this time and must maintain its connection to the Internet.

To force the rooExtend-Box to check for an update outside these times locate the small hole behind the USB socket on the right side of the rooExtend-Box. Press the button in this hole with a pointed object.

This initiates the search for an update. If an update is found, the Roon Extensions of the rooExtend-Box disappear from Roon and the red LED on the front of the rooExtend-Box starts to light up continuously (see chapter: "Meaning of the flashing signals of the red LED").

Note:

Never disconnect the rooExtend-Box from its power supply during a firmware update. This can lead to irreparable damage of the rooExtend-Box.

The Service Page

The rooExtend-Box has an HTML Service Page for specific system-related settings and to provide support logs. The HTML Service Page only exists in English and is irrelevant for the normal operation of the rooExtend-Box. However, it must be called up for servicing and for implementing the simultaneous operation of several rooExtend-Boxes (see chapter: "Multiple rooExtend-Boxes with one Roon CoreCore").

You can open the HTML Service Page with your browser by entering the IP number (***http://[IP number]***) of your rooExtend-Box. The IP number can be found in the settings of the rooExtend License Manager in the lower part of its **settings** dialog (see chapter: "More settings in the rooExtend License Manager").

In the upper part of the HTML Service Page you have the option of reinstalling the Roon Bridge if necessary or changing the network name of the rooExtend-Box, which is recommended when operating several rooExtend-Boxes at the same time (see: Figure 76).

rooExtend

Reinstall Roon Bridge

Roon Bridge is already preinstalled on rooExtend and updates by its own.
Usually there is no need to reinstall Roon Bridge.
However, Roon asked us to offer a reinstallation option with a customizable download link.

<http://download.roonlabs.com/builds/roonbridge-installer-linuxarmv8.sh>

Reinstall Roon Bridge and shutdown rooExtend

Set hostname

If more than one instance of rooExtend is running, it may make sense to have different names for them on the network. Here you can change the hostname of your rooExtend instance. You can use number e.g. "rooExtend-1" for your instances.

rooExtend

Set network name and shutdown rooExtend

System Info

rooExtend release: v3.0.1
Gerät: NaoPi R2S
IP-Nummer: 192.168.0.209
Internetverbindung: Ja
USB Audio-Interface: DIYINHK DIYINHK USB Audio 2.0, Multi-Channel
CD-Laufwerk: --
Betriebsdauer: 2 days, 18:37
Temperatur: 35.4

Figure 76 – Upper part of the HTML Service Page of the rooExtend-Box

In the lower part you see copyright information and at the bottom of the page a number of buttons giving access to various log information.

Copyright Information

Roon
Copyright © 2016 Roon Labs LLC

[node-roon-api](#)
Copyright © 2016 Roon Labs LLC

[UPnPBridge-1.45.3](#)
Copyright © [philippe44ca](#)

[rocket-nuimo-node](#)
Copyright © [Paul Bates](#)

[roon-extension-itroxs](#)
Copyright © [Boris Schaedler](#)

[shairport-sync](#)
Copyright © [Mike Brady](#)

[mplayer](#)
Copyright © [Philip Langdale](#)

Show System Log
Show Update Log
Show Service Info
Show Sound Interface

Reset to factory defaults and shutdown rooExtend

Shutdown rooExtend

Figure 77 - Lower part of the HTML Service Page of the rooExtend-Box

With the button **Reset to factory defaults and shutdown rooExtend** all individual settings that you have made for the rooExtend-Box will be deleted. Any pairing to a Microsoft Surface Dial will also be removed, so that you have to re-pair the Microsoft Surface Dial to the rooExtend-Box after this operation (see chapter: "Prepare rooDial").

Multiple rooExtend-Boxes with one Roon CoreCore

If you run multiple Roon zones in your house, it may make sense to use several rooExtend-Boxes with your Roon Core.

For such a configuration to work without issues, the rooExtend-Boxes must be given different network names, and a name should be assigned to each of the rooExtend-Boxes in the License Manager in order to be able to distinguish between the Roon Extensions of the individual rooExtend-Boxes.

Note:

When operating several rooExtend-Boxes at the same time, you should not use a bundled license, but individual licenses (see chapter: "Activate license"). The reason is that the Roon Extension rooUPnP may only be active once in a network, since several rooUPnP Roon Extensions running in parallel hinder each other.

Changing the network name

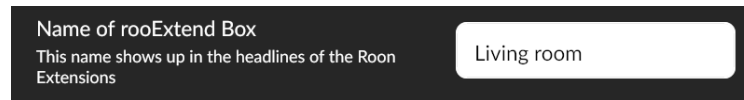
First put the first rooExtend-Box into operation (see chapter: "Installation"). Then open the HTML service page of this rooExtend-Box (see chapter: "The Service Page") and change the network name of **rooExtend** to e.g. **Living room**. Now click the **Set network name and shutdown rooExtend** button.

Next open the **Settings/Extensions** in the Roon menu and wait for about twenty seconds until the Roon Extensions of the rooExtend-Box reappear.

The network name that you entered will be offered for selection when playing audio from Apple devices (see chapter: "Playback from Apple devices").

Change the name of the rooExtend-Box

In the second step, open the settings of the rooExtend License Manager. In the field “**Name of rooExtend-Box**” enter the name that should appear as a prefix in front of the Room Extensions and click on **Save**. In this way you can distinguish for which Room Extension on which rooExtend-Box you are currently doing settings (see: Figure 78).



The screenshot shows a dark-themed settings window. At the top, it says "Name of rooExtend Box" followed by a smaller text "This name shows up in the headlines of the Room Extensions". To the right of this text is a white text input field containing the text "Living room".

Figure 78 - Setting the name of the rooExtend-Box

The result looks like Figure 79 after changing the name of the rooExtend-Box.

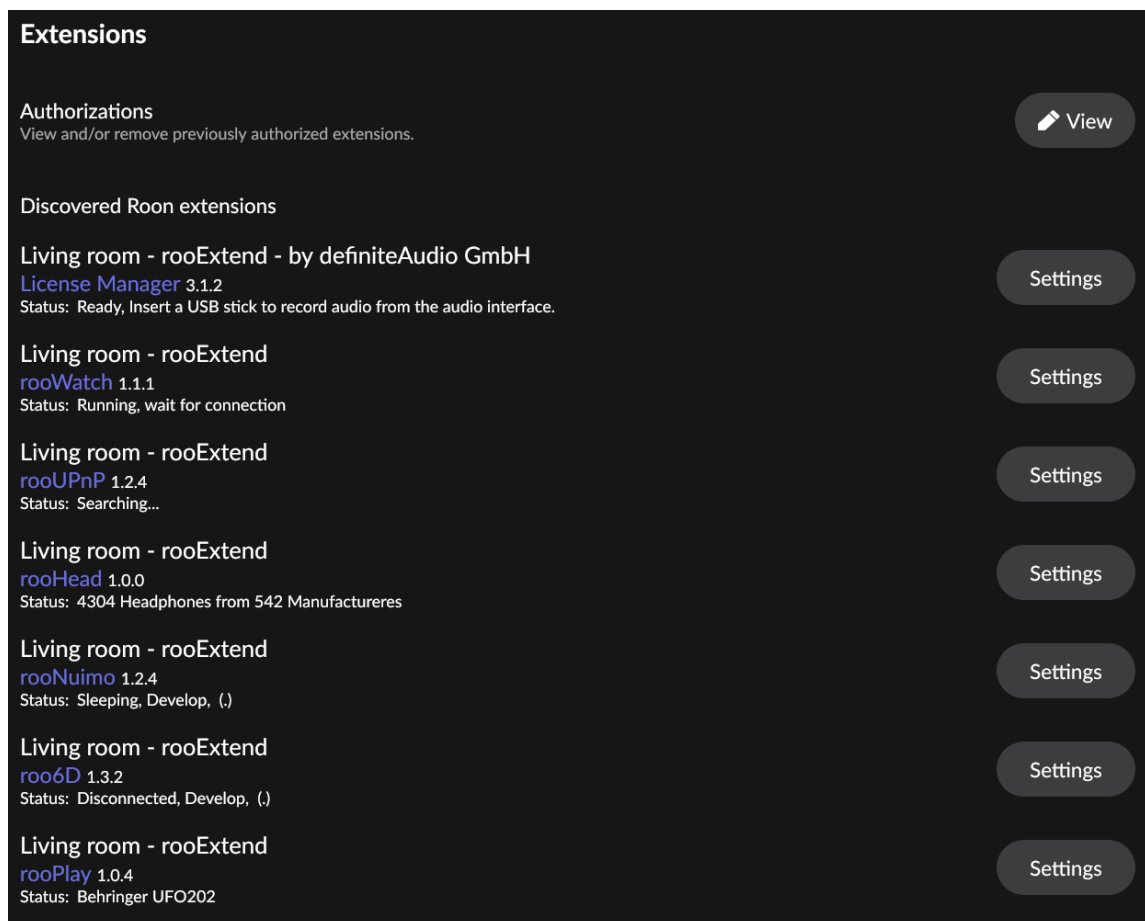


Figure 79 - rooExtend Room Extensions preceded by name

After these changes, disconnect your rooExtend-Box from the power supply and do the same with your other rooExtend-Boxes but with different names.

After setting up all your rooExtend-Boxes, they can be powered on again.

Using Siri with rooWatch

If you have set up rooWatch as described in the chapter "Prepare rooWatch", rooWatch is able to control Roon to a certain extent with the voice input function Siri

Note:

Siri support is still an experimental feature. definiteAudio GmbH does not guarantee that it will always work as expected.

Here are some examples of voice commands that you are welcome to try or use in your day-to-day operations. In order for this to work, the rooWatch app must be active (visible) on the Apple Watch.

- Play Easy on me
- Play Adele
- Play Knowing me knowing you by ABBA
- Play the song Knowing me knowing you by ABBA
- Play the album Dark side of the Moon
- Play Jazz on rooWatch

Change history

V3.3.1

- New Roon Extension rooADI (Siehe Kapitel: "Prepate rooADI"):

V3.2.0

- New Roon Extension rooAIDJ (see chapter: "Prepare rooAIDJ"):

V3.1.1

- New Roon Extension rooHead (see chapter: "Prepare rooHead"):

V3.0.3

- Fix: USB DAC without ADC

V3.0.2

- Fix: FLAC Recording

V3.0.1

- Support of Bluetooth speakers and headphones (see chapter: "Using Bluetooth speakers and headphones with the rooExtend-Box)
- Fixes:
 - Recording to USB stick from audio interface is now possible
 - Bug in Updater fixed. Now it only checks for updates once a night.
 - Accidental double start of Shairport-Sync has been removed

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