

# Diretta Setup Guide

## About Diretta

Diretta is a network audio protocol designed for **high-quality network audio playback**.

In a traditional network audio system, large blocks of audio data are transmitted over the network. These large data transfers can cause fluctuations in processing load and electrical current inside audio devices. Such fluctuations may introduce additional noise that can affect sound quality.

Diretta takes a different approach.

Instead of sending large chunks of audio data, Diretta transmits the audio stream as **small, precisely timed packets**. This allows the playback device to process the audio data in a more stable and predictable way, which helps reduce internal noise and improves playback performance.

A Diretta system consists of two main components:

- **Diretta Host** - The device that sends audio data over the network.
- **Diretta Target** - The device that receives the audio stream and outputs it to the DAC.

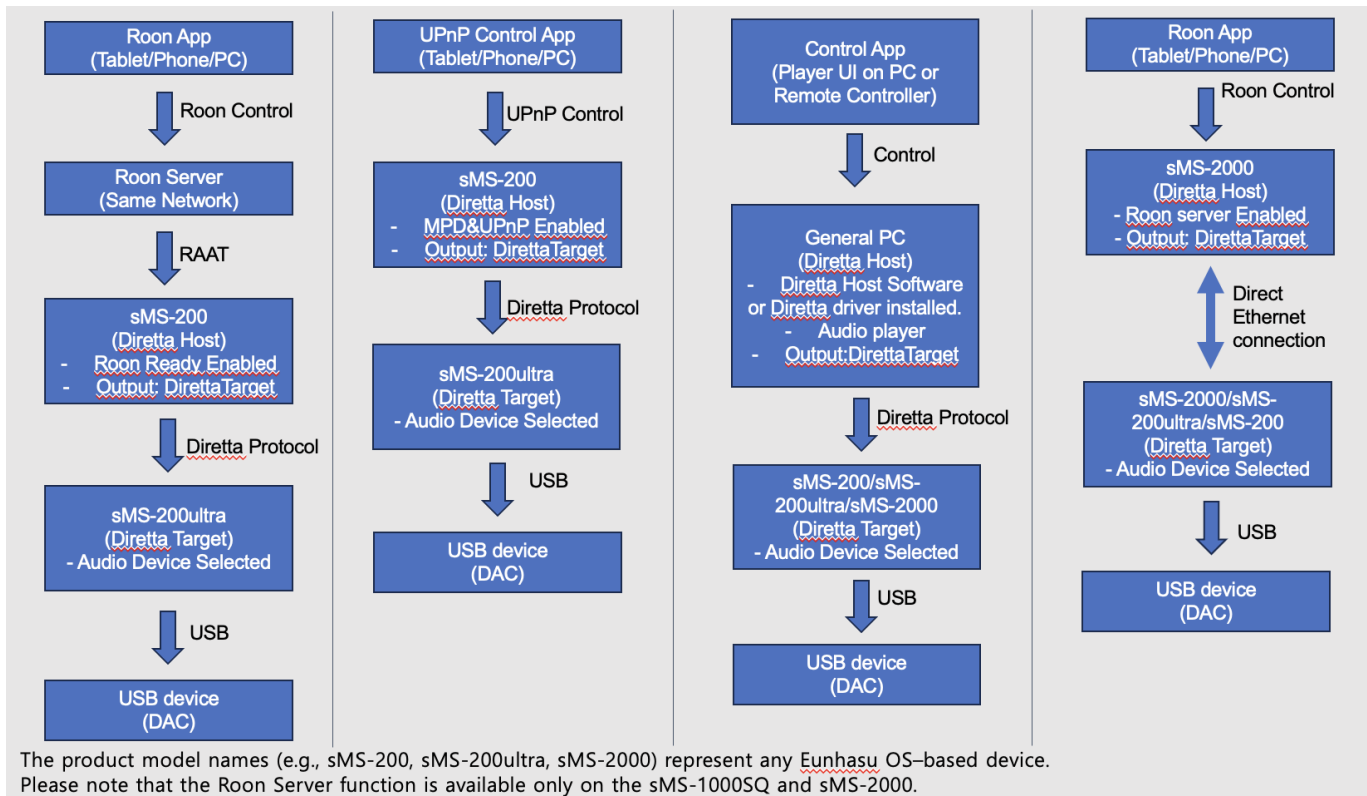
In most systems:

- The **music player runs on the Host device**
- The **Target device focuses only on audio playback**

This separation allows the playback device to operate with minimal processing load, which can help improve overall sound quality.

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## Diretta System Example



## What is MTU and Why Diretta Uses It

MTU (Maximum Transmission Unit) defines the maximum packet size that can be transmitted over a network.

In most networks, the default MTU value is **1500 bytes**.

Diretta allows the MTU size to be adjusted because larger packet sizes can sometimes improve transmission efficiency and reduce processing overhead.

However, MTU settings must match between devices in the network.

If the MTU values do not match, network communication problems may occur.

For this reason, MTU configuration options were added in later Eunhasu versions from 0.6.3 to allow advanced optimization of Diretta network performance.

It is recommended to first verify that Diretta operates correctly with the default MTU value of 1500 before changing the MTU setting.

In Eunhasu, the MTU value can be configured under System Config → Ethernet.

When increasing the MTU value, all devices on the network (Host, Target, switches, routers, etc.) must support the configured value.

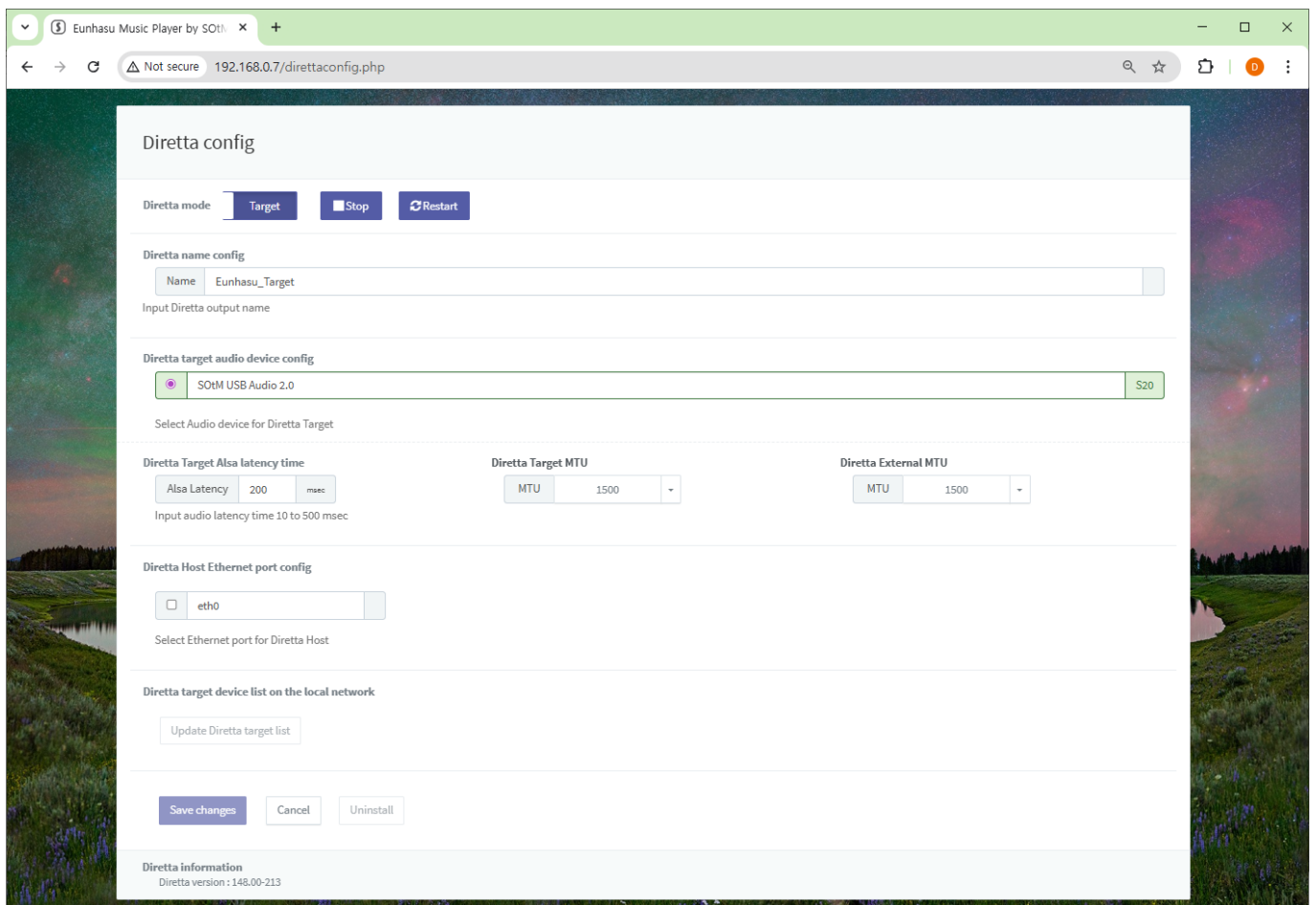
Jumbo Frame (extended MTU) should only be used in network environments that support it.

Additionally, the maximum supported MTU value may vary depending on the device model.

- SMS-2000, SMS-1000SQ : supports MTU up to 9014
- SMS-200, SMS-200ultra : supports MTU up to 1500

## How to configure Diretta Target

1. Open **Diretta Config**.
2. Set:  
Diretta Mode → Target
3. Select the **Target Audio Device**.
4. Click **Save Changes**.
5. Click **Start**.



## How to configure Diretta Host

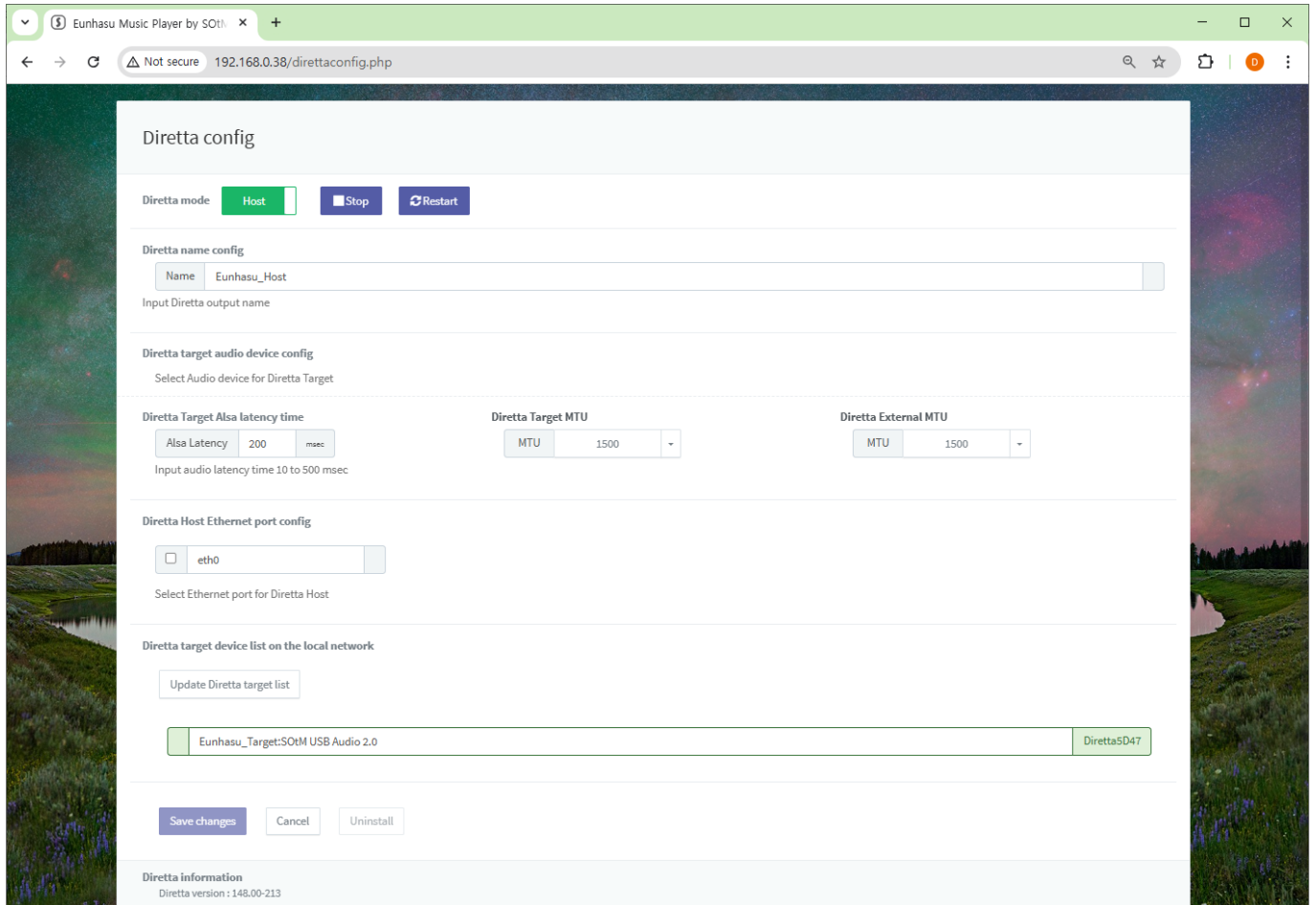
1. Open **Diretta Config**.

2. Set:

Diretta Mode → Host

3. Click **Save Changes**.

4. Click **Start**.



## Selecting the Diretta Audio Device

1. Open **Music Player Config**.

2. Select the **Diretta Target device**.

3. Click **Save Changes**.



## Using a Windows PC as a Diretta Host

Install the **Diretta ASIO driver**.

[https://docs.sotm-audio.com/lib/exe/fetch.php?media=undefined:sotmasiodriver\\_3\\_148\\_4.zip](https://docs.sotm-audio.com/lib/exe/fetch.php?media=undefined:sotmasiodriver_3_148_4.zip)

If using **MS Mode3**, install:

- [WinPcap](#)
- [Npcap](#)

Configure using **SotM ASIO Configure**.

**Diretta ASIO configure** [X]

Interface Ethernet:  [cancel]

Find IP:  [find]

Connect Target:  [update]

Preset Profile:  [default]

PCM Request:  DSD Type:  [debug]




ASIO Buffer:  FS X Depth:  [save]

Diretta Cycle:  Cycle =86/93Hz  
Follow Target

Target Latency:  msec

Phase:  Log:  [Config]

Occupied:   othr  -  [Status]

The screenshot shows a 'Debug' window with a log of audio data. The log entries are as follows:

```

16:39:14.995 Host : info rcv 2 0.0094 0.0094 0.0009 cy=10647243226
16:39:15.241 Host : info rcv 2 0.0045 0.0045 0.0013 cy=10642690064
16:39:15.497 Host : info rcv 2 0.0104 0.0104 0.0004 cy=10652446839
16:39:15.793 Host : info rcv 2 0.0084 0.0084 0.0004 cy=10653097291
16:39:16.040 Host : info rcv 2 0.0035 0.0035 0.0007 cy=10649194581
16:39:16.295 Host : info rcv 2 0.0094 0.0094 -0.0002 cy=10658951355
16:39:16.540 Host : info rcv 2 0.0045 0.0045 0.0002 cy=10654398194
16:39:16.796 Host : info rcv 2 0.0104 0.0104 -0.0007 cy=10664154969
16:39:17.042 Host : info rcv 2 0.0055 0.0055 -0.0004 cy=10660902710
16:39:17.297 Host : info rcv 2 0.0113 0.0113 -0.0013 cy=10671309937
16:39:17.551 Host : info rcv 2 0.0074 0.0074 -0.0012 cy=10669358582
16:39:17.798 Host : info rcv 2 0.0035 0.0035 -0.0009 cy=10666106324
16:39:18.098 Host : info rcv 2 0.0104 0.0104 -0.0019 cy=10677164002
16:39:18.343 Host : info rcv 2 0.0065 0.0065 -0.0017 cy=10675212647
16:39:18.588 Host : info rcv 2 0.0007 0.0007 -0.0011 cy=10668708130
16:39:18.845 Host : info rcv 2 0.0065 0.0065 -0.0019 cy=10677164002
16:39:19.090 Host : info rcv 2 0.0016 0.0016 -0.0015 cy=10672610840
16:39:19.345 Host : info rcv 2 0.0065 0.0065 -0.0021 cy=10679765809
16:39:19.591 Host : info rcv 2 0.0016 0.0016 -0.0017 cy=10675212647
16:39:19.848 Host : info rcv 2 0.0074 0.0074 -0.0025 cy=10683668519
16:39:20.147 Host : info rcv 2 0.0065 0.0065 -0.0026 cy=10684969422
16:39:20.393 Host : info rcv 2 0.0016 0.0016 -0.0022 cy=10680416260
16:39:20.638 Host : info rcv 2 -0.0032 -0.0032 -0.0015 cy=10673261292
16:39:20.895 Host : info rcv 2 0.0026 0.0026 -0.0021 cy=10679765809
16:39:21.140 Host : info rcv 2 -0.0032 -0.0032 -0.0013 cy=10671309937
16:39:21.396 Host : info rcv 2 0.0026 0.0026 -0.0020 cy=10677814454

```

Below the log is a configuration panel with the following settings:

- InterfaceMTU: 1500byte
- ActiveMtu: 1500byte
- StreamMTU: 1500byte
- MS Mode: DDS(mode3) (highlighted with a red box)
- PacketStreamSize: 1488byte
- Packets/1Cycle: 11ppc
- Profile: VarASIO
- Transfer Cycle: 93.835038Hz
- Feedback: 93.65 Hz
- Target Latency: 1000+200msec

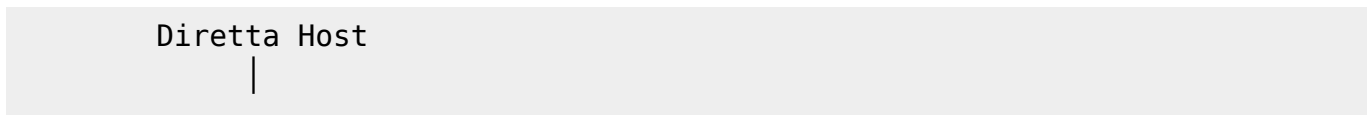
Buttons at the bottom include 'close', 'clear', and 'save log'.

## Direct Ethernet Connection Setup

Direct Ethernet connection allows the **Diretta Host and Diretta Target devices to be connected directly using an Ethernet cable** without passing through a router or network switch.

In some systems, this configuration may help reduce network traffic and interference, which can improve the stability of Diretta playback.

Example:





This setup is optional and typically used for advanced configurations.

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## Required Equipment

Before starting the setup, prepare the following:

- Ethernet crossover cable
- USB Ethernet dongle or USB Wi-Fi dongle (if the device has only one Ethernet port)

If the device has only one Ethernet port, a USB network adapter is required so the device can remain connected to the main network while using the other interface for the direct connection.

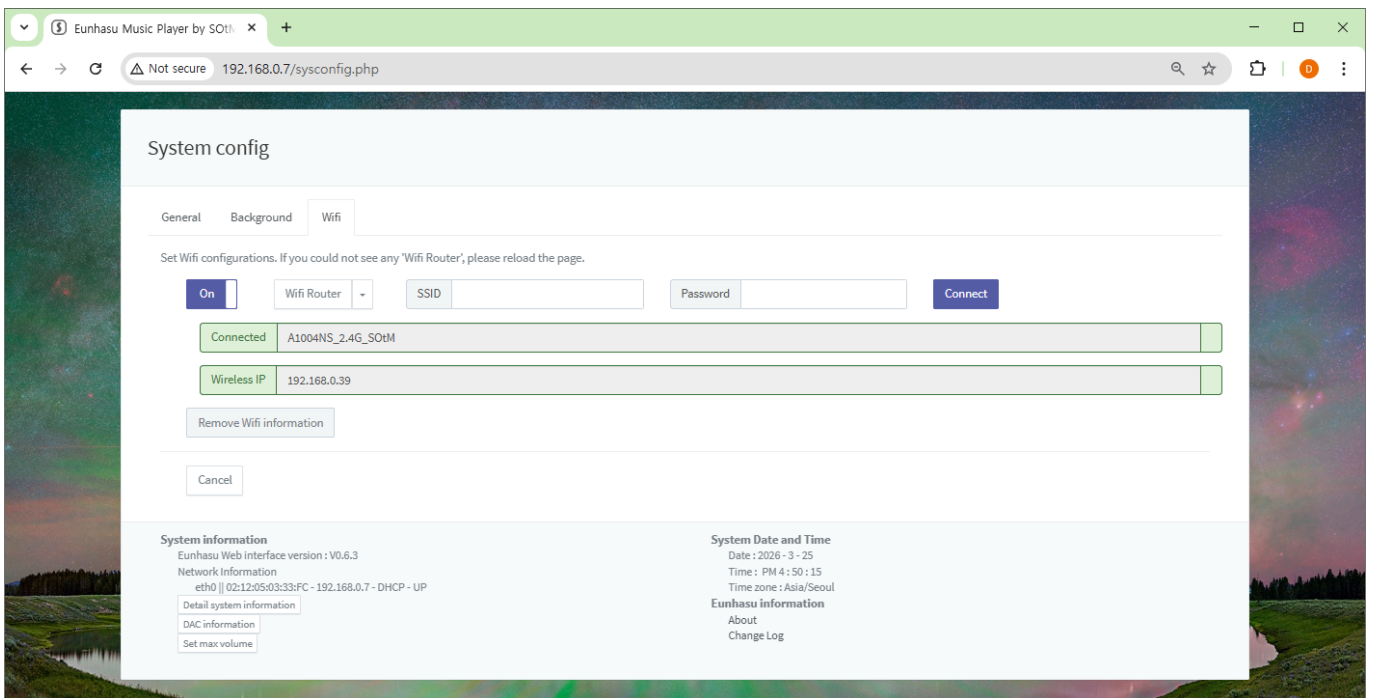
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## Setup Steps

1. Update both the **Diretta Host** and **Diretta Target** devices to the latest Eunhasu firmware.
2. If your device has only one Ethernet port, connect a **USB Ethernet adapter or USB Wi-Fi dongle**.
3. Open the **Eunhasu Web GUI** on the **Diretta Target device**.
4. Go to **System Config**.



5. If using a Wi-Fi dongle, connect the device to your network.



6. Access the Eunhasu Web GUI through the connected network interface.

7. Configure a **static IP address** on the Ethernet port that will connect directly to the Diretta Host.

Example:

IP Address xxx.xxx.xxx.nnn

Notes:

- The first three sections must match the Host network.
- The final number must be different from the Host device.

Network settings:

- Netmask: 255.255.255.0
- Gateway: leave empty
- DNS: leave empty



8. Click **Save & Reboot System**.

9. After rebooting, open the **Diretta Config** page on the Target device.

Configure:

- Diretta Mode → Target
- Select the **Diretta Target audio device**

Click **Save Changes**.

10. Click **Start** to activate **Diretta Target mode**.



## Important Notice

When configuring a **Direct Ethernet connection**, the Target device may temporarily connect to the network using **Wi-Fi or a USB Ethernet adapter** in order to access the Eunhasu Web GUI.

In this situation, the **Diretta Host may detect two Diretta Target devices**.

This occurs because the Target device becomes visible through two different network interfaces:

- the **direct Ethernet connection**
- the **Wi-Fi or USB Ethernet connection used for configuration**

Because of this, two Diretta Targets may appear in the Host device's Target list.

To avoid incorrect configuration:

- After finishing the Target setup, it is recommended **not to use the Wi-Fi or USB Ethernet interface used for configuration**.
- Use only the **direct Ethernet connection** between the Host and Target.

When the configuration is complete, **close the Eunhasu Web GUI browser window completely** to prevent accidental access through the temporary network interface.

## Configure the Diretta Host

11. Open the **Eunhasu Web GUI** on the **Diretta Host device**.

12. Go to **System Config**.

13. Configure a **static IP address** for the Ethernet port that will connect to the Target device.

Example:

IP Address xxx.xxx.xxx.nnn

Notes:

- The first three sections must match the Target network.
- The final number must be different from the Target device.

Network settings:

- Netmask: 255.255.255.0
- Gateway: leave empty
- DNS: leave empty



14. Click **Save & Reboot System**.

15. Connect the **Ethernet crossover cable** between the Host and Target devices.

## Enable Diretta Host Mode

16. Open the **Diretta Config page** on the Host device.

Configure:

- Diretta Mode → Host
- Select the Ethernet port used for the direct connection

Click **Save Changes**.

17. Click **Start** to activate **Diretta Host mode**.

After a short time, the **Diretta Target device should appear in the Target list**.



## Select the Audio Device

18. Open **Music Player Config**.

19. Select the **Diretta Target device** as the audio output device.

20. Click **Save Changes**.

21. Start the music player and control it using your smartphone or tablet.

## Troubleshooting

### Target not detected

- Check that Diretta is running
- Check network connections

### Playback stuttering

- Verify MTU configuration
  - Restart Diretta
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## References

- <https://www.sotm-audio.com/sotmwp/english/eunhasu-os-v0-6-3-alpha/>
- <https://www.sotm-audio.com/sotmwp/english/direttasettings/>
- <https://www.sotm-audio.com/sotmwp/english/how-to-set-up-a-direct-ethernet-connection-between-diretta-host-and-target-eunhasu-v0-5-9/>

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<https://docs.sotm-audio.com/> - **SOTM docs**

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