

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:

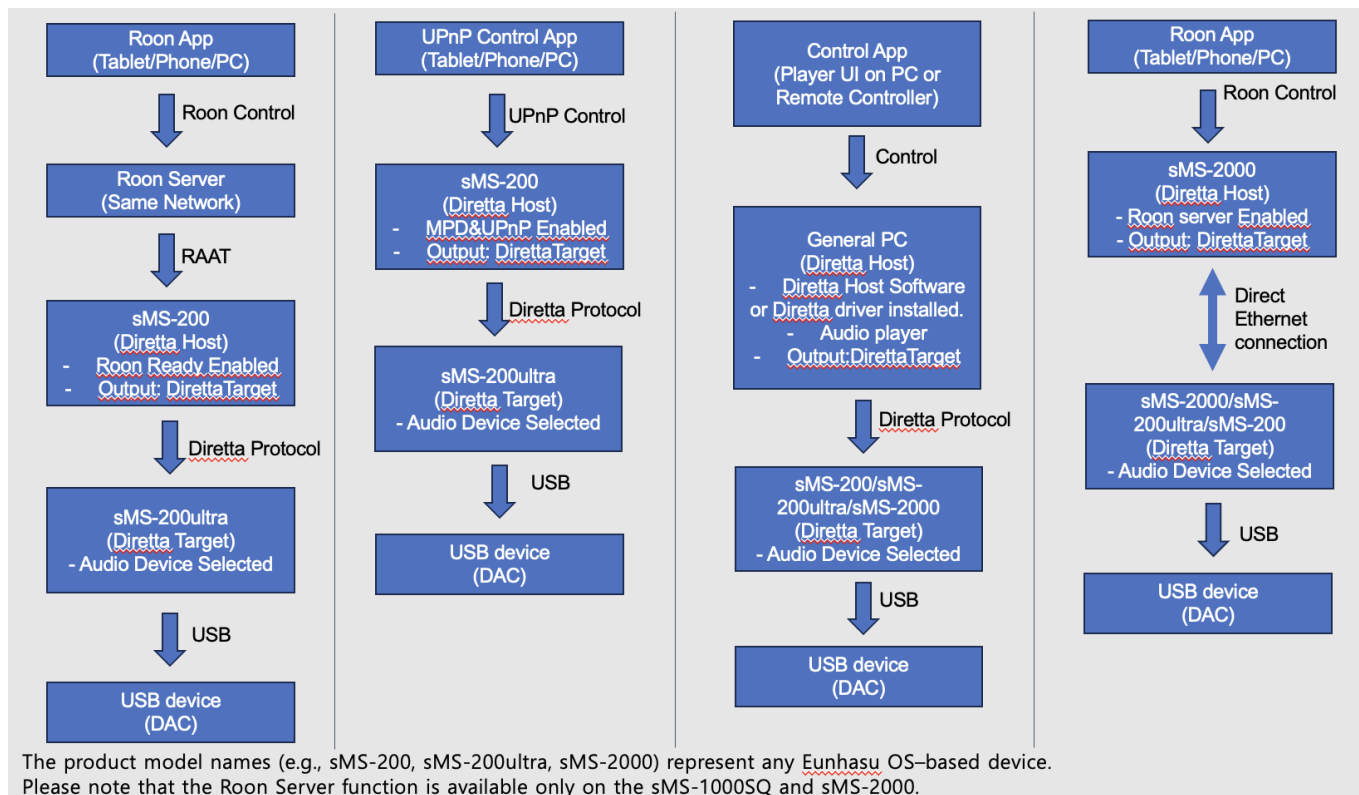
- **Diretta Host** - The device that sends audio data over the network.
- **Diretta Target** - The device that receives the audio stream and outputs it to the DAC.

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.

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**
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How to Configure MTU for Jumbo Frame (sMS-2000 / sMS-1000SQ)

The following steps describe how to increase the MTU value to use Jumbo Frame on sMS-2000 / sMS-1000SQ.

1. First, verify that music playback works correctly via Diretta with the default MTU value of 1500.
 2. Go to System Config → Ethernet and set the MTU value to either 4088 or 9014. (Only configure this in a network environment that supports jumbo frames.)
 3. Click Save & Reboot to restart the system.
 4. After rebooting, go to the Diretta Config page and configure the following :
 - Diretta Target MTU : Set this to the same value as, or lower than, the MTU value configured in System Config.
 - Diretta External MTU : Set this to the same MTU value configured on the Diretta Host device (such as a PC or another Eunhasu device).
 5. Complete the remaining Diretta settings, save the configuration, and start Diretta to begin playback.
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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**.

Diretta config

Diretta mode **Target** Stop Restart

Diretta name config

Name Eunhasu_Target

Input Diretta output name

Diretta target audio device config

SOTM USB Audio 2.0 S20

Select Audio device for Diretta Target

Diretta Targetalsa latency time

Alsa Latency 200 msec

Diretta Target MTU

MTU 1500

Diretta External MTU

MTU 1500

Input audio latency time 10 to 500 msec

Diretta Host Ethernet port config

eth0

Select Ethernet port for Diretta Host

Diretta target device list on the local network

Update Diretta target list

Save changes Cancel Uninstall

Diretta information

Diretta version : 148.00-213

How to configure Diretta Host

1. Open **Diretta Config**.
2. Set:

Diretta Mode → Host
3. Click **Save Changes**.
4. Click **Start**.

Diretta config

Diretta mode **Host** Stop Restart

Diretta name config

Name Eunhasu_Host

Input Diretta output name

Diretta target audio device config

Select Audio device for Diretta Target

Diretta Target ALSA latency time

Alsa Latency 200 msec

Input audio latency time 10 to 500 msec

Diretta Target MTU

MTU 1500

Diretta External MTU

MTU 1500

Diretta Host Ethernet port config

☐ eth0

Select Ethernet port for Diretta Host

Diretta target device list on the local network

Update Diretta target list

Eunhasu_Target:SOTM USB Audio 2.0 DirettaSD47

Save changes Cancel Uninstall

Diretta information

Diretta version : 148.00-213

Selecting the Diretta Audio Device

1. Open **Music Player Config**.
2. In the Audio Device section, select the **Diretta Target device** from the list. (The device name will appear as a Diretta Target.)
3. Click **Save Changes**.

MPD & UPnP config

Output name config

Name sMS-200-USB

Enter MPD output name

Audio device config

Eunhasu_Target:SotM USB Audio 2.0 DirettaSD47

DSD disable ☐ DoP ☐ Native DSD type 0 ☒ Native DSD type 2 ☐

Select Audio device and option. When you select Native DSD type 2, your DAC supports 32-bit DSD_U32_BE sample formats (e.g. XIMOS based USB DACs and Marantz/Kenwood DACs). Type 0 is for using 8-bit DSD_U8 format like the Botic driver for the BeagleBone Black.

MPD & UPnP feature config

Replay gain None ☐ OpenHome ☒ Library auto update ☒ Mixer type software ☐

Qobuz streaming config

ID or Email Password Format normal ☐

Enter your Qobuz ID & Password. And select Qobuz streaming format, 'Normal' is for MP3 and 'Lossless' is for FLAC.

Save changes Cancel Uninstall

MPD information

Zeroconfig name : sMS-200-USB
MPD version : 0.24.4-211
UPMPDCLI version : 1.9.6-210

Using a Windows PC as a Diretta Host

A Windows PC can be used as a Diretta Host to send audio data to a Diretta Target device.

1. Install the **Diretta ASIO driver**. Download and install the Diretta ASIO driver on the Windows PC.
https://docs.sotm-audio.com/lib/exe/fetch.php?media=undefined:sotmasiodriver_3_148_9.zip

2. Install Packet Capture Driver. (Optional) Depending on the Diretta mode, a packet capture driver may be required. Install one of the following :

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

This is required only when using specific Diretta modes such as MS Mode3.

3. Configure the Diretta ASIO Driver. After installation, run the SotM Diretta ASIO Configure program.

- Click the **Find** button.
- Select the Diretta Target device from the **Connect Target** list.
- Click **Save** to apply the configuration.

Diretta ASIO configure ✕

Interface Ethernet AUTO cancel

Find IP find

Connect Target Eunhasu_Target(SOtM USB Audio 2.0) update

Preset Profile Sync_Lowest default

PCM Request 32bit DSD Type MSB debug

ASIO Buffer 512 FS X Depth 6 save

Diretta Cycle ASIO Buffer

Target Latency 1000 msec Cycle =86/93Hz
Follow Target

Phase Normal Log disable Config

Occupied ☐ 0 othr 0 - 0 Status

S O t M
Ultimate High Performance Audio

Diretta

ASIO
COMPATIBLE

Debug
✕

```

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

```

InterfaceMTU	ActiveMtu	StreamMTU	MS Mode	PacketStreamSize	Packets/1Cycle
1500byte	1500byte	1500byte	DDS(mode3)	1488byte	X 11ppc
Profile	Transfer Cycle	Feedback	Target Latency		
VarASIO	93.835038Hz	93.65 Hz	1000+200msec	close	clear save log

DDS (Diretta Direct Stream)

DDS (Diretta Direct Stream) is a new streaming method introduced in Diretta version 148.00. DDS uses Direct Data Streaming for audio streaming and transfers audio data directly by Ethernet frame on Ethernet Layer 2 instead of IP layer processing. DDS is designed for "PURE audio stream" by minimizing protocol overhead, reducing unnecessary packet processing, and reducing software processing and CPU processing load. In Diretta, control communication uses IPv6/UDP while audio streaming uses DDS. DDS supports low latency and efficient streaming.

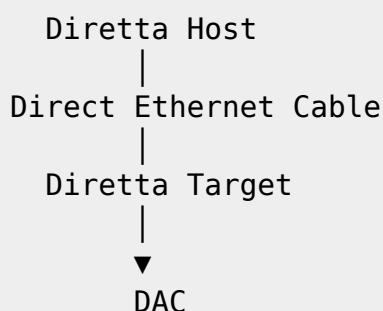
For more technical information about DDS, please refer to the link below. <https://www.diretta.link/dds/>

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.

Required Equipment

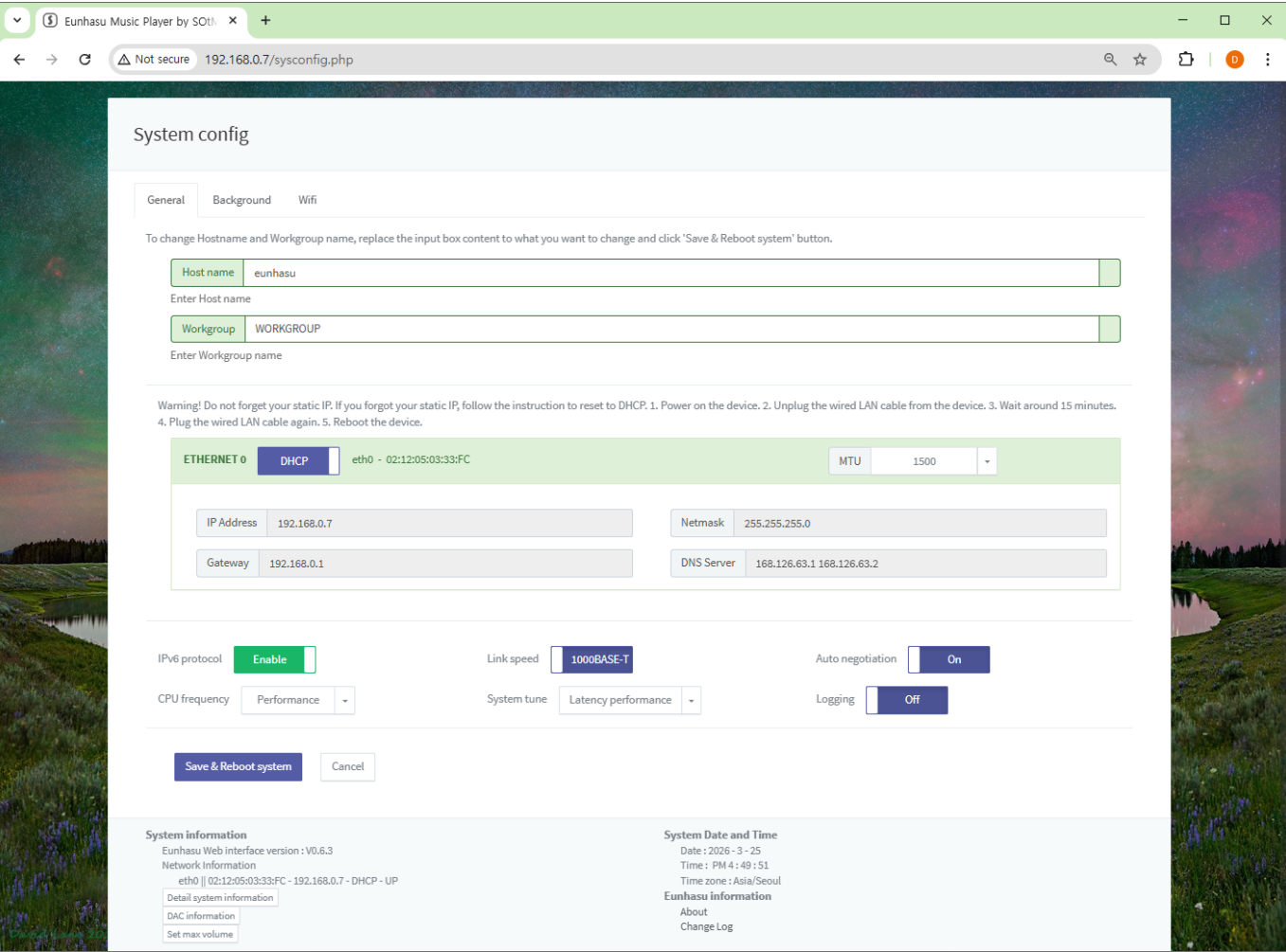
Before starting the setup, prepare the following:

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

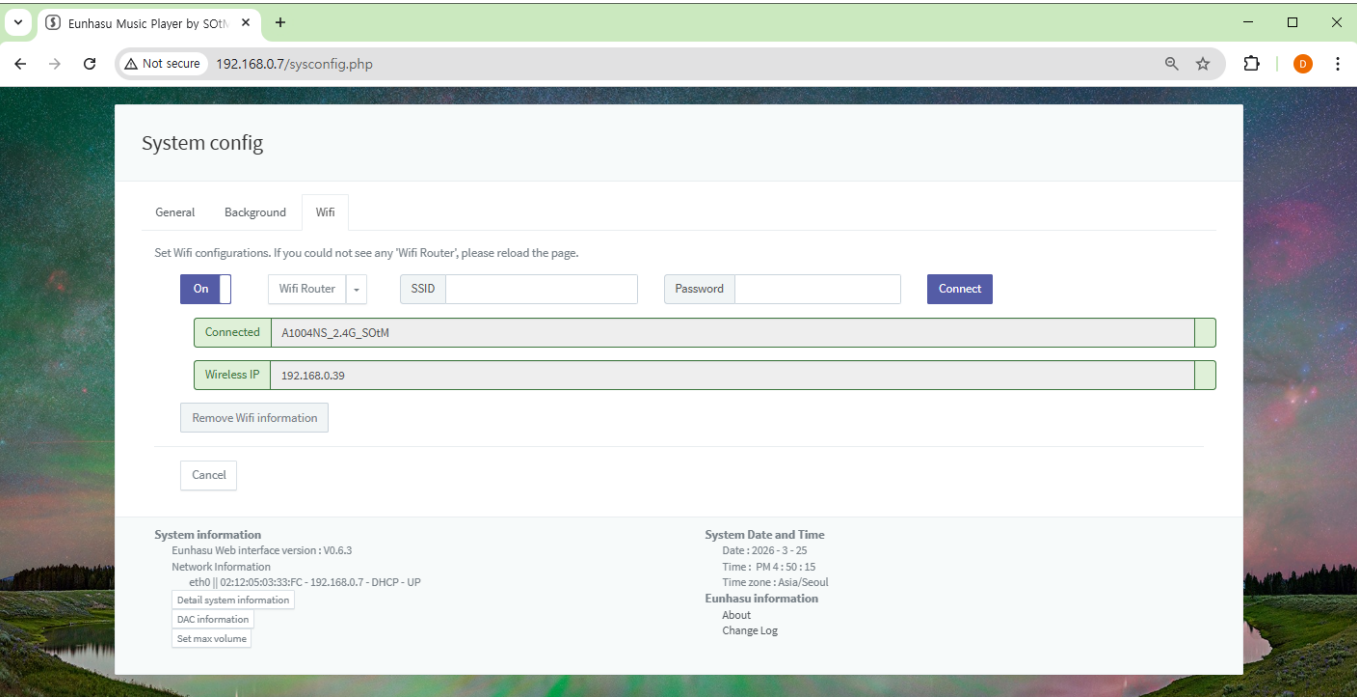
If the device has only one Ethernet port, a USB network adapter is required so the device can remain connected to the main network while using the other interface for the direct connection.

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

The screenshot shows a web browser window with the address bar displaying "192.168.0.39/sysconfig.php". The page title is "System config". There are three tabs: "General", "Background", and "Wifi". The "General" tab is active. Below the tabs, there is a warning message: "To change Hostname and Workgroup name, replace the input box content to what you want to change and click 'Save & Reboot system' button." Below this, there are two input fields: "Host name" with the value "eunhasu" and "Workgroup" with the value "WORKGROUP". Below these, there is a warning message: "Warning! Do not forget your static IP. If you forgot your static IP, follow the instruction to reset to DHCP. 1. Power on the device. 2. Unplug the wired LAN cable from the device. 3. Wait around 15 minutes. 4. Plug the wired LAN cable again. 5. Reboot the device." Below this, there is a section for "ETHERNET 0" with a dropdown menu set to "STATIC" and a MAC address "eth0 - 02:12:05:03:33:FC". Below this, there are four input fields: "IP Address" with the value "192.168.1.7", "Netmask" with the value "255.255.255.0", "Gateway" (empty), and "DNS Server" (empty). Below these, there are three sections: "IPv6 protocol" with a dropdown menu set to "Enable", "Link speed" with a dropdown menu set to "1000BASE-T", and "Auto negotiation" with a dropdown menu set to "On". Below these, there are three sections: "CPU frequency" with a dropdown menu set to "Performance", "System tune" with a dropdown menu set to "Latency performance", and "Logging" with a dropdown menu set to "Off". Below these, there are two buttons: "Save & Reboot system" and "Cancel". At the bottom, there is a footer section with "System Information" and "System Date and Time". The "System Information" section includes "Eunhasu Web interface version : V0.6.3", "Network Information" with "eth0 || 02:12:05:03:33:FC - 192.168.1.7 - STATIC - UP", "Detail system information", "DAC information", and "Set max volume". The "System Date and Time" section includes "Date : 2026 - 8 - 25", "Time : PM 4 : 54 : 38", "Time zone : Asia/Seoul", "Eunhasu Information", "About", and "Change Log".

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**.

Diretta config

Diretta mode ☐ Target

Diretta name config

Name

Input Diretta output name

Diretta target audio device config

☐ SOTM USB Audio 2.0

Select Audio device for Diretta Target

Diretta Target ALSA latency time

Alsa Latency msec

Input audio latency time 10 to 500 msec

Diretta Target MTU

MTU

Diretta External MTU

MTU

Diretta Host Ethernet port config

☐ eth0

Select Ethernet port for Diretta Host

Diretta target device list on the local network

Diretta information
Diretta version : 148.00-213

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

System config

General Background Wifi

To change Hostname and Workgroup name, replace the input box content to what you want to change and click 'Save & Reboot system' button.

Host name eunhasu

Enter Host name

Workgroup WORKGROUP

Enter Workgroup name

Warning! Do not forget your static IP. If you forgot your static IP, follow the instruction to reset to DHCP. 1. Power on the device. 2. Unplug the wired LAN cable from the device. 3. Wait around 15 minutes. 4. Plug the wired LAN cable again. 5. Reboot the device.

ETHERNET 0 **STATIC** eth0 - 02:14:05:C2:02:E0 MTU 1500

IP Address 192.168.1.38 Netmask 255.255.255.0

Gateway DNS Server

ETHERNET 1 **DHCP** eth1 - 00:E0:4A:68:2E:71 MTU 1500

IP Address 192.168.0.40 Netmask 255.255.255.0

Gateway 192.168.0.1 DNS Server 168.126.63.1 168.126.63.2

IPv6 protocol **Enable** Link speed **1000BASE-T** Auto negotiation **On**

CPU frequency Performance System tune Latency performance Logging **Off**

Save & Reboot system Cancel

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**.

Diretta config

Diretta mode: **Host** [Stop] [Restart]

Diretta name config

Name: Eunhasu_Host

Input Diretta output name

Diretta target audio device config

Select Audio device for Diretta Target

Diretta Target ALSA latency time: msec

Diretta Target MTU:

Diretta External MTU:

Input audio latency time 10 to 500 msec

Diretta Host Ethernet port config

☒ eth0 ☐ eth1

Select Ethernet port for Diretta Host

Diretta target device list on the local network

[Update Diretta target list]

Eunhasu_Target:SOTM USB Audio 2.0 DirettaSD47

[Save changes] [Cancel] [Uninstall]

Diretta information

Diretta version : 148.00-213

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
-

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/>

From:

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

Permanent link:

<https://wiki.sotm-audio.com/doku.php?id=diretta&rev=1778040637>

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