ANEMAN 2 User Manual

MERGING

INTRODUCTION

WHAT IS ANEMAN ?

Merging Technologies' Audio NEtwork MANager is an audio network tool that allows you to discover devices, manage connections and monitor the network. It is based on an open architecture that allows third parties to add their own modules, called Proxies, allowing for supporting their own devices.

This release offers support for the following list of devices:

- Merging HORUS, HAPI and ANUBIS, MERGING+NADAC, NADAC+PLAYER audio devices
- Merging MassCore, Merging VAD (MacOS driver), Merging MAD (Windows ASIO driver) and ALSA driver
- Merging ZMAN based devices (as of ANEMAN v1.2.2)
- Neumann MT 48
- Direct Out devices
- Ross Bach module based devices (e.g. Neumann AoIP speakers, etc…)
- Archwave's uNet module based devices (e.g. Genelec 8430A, WBS PreMo, etc…) **
- Stage Tech RIF67 **

(**: Please contact aneman@merging.com to get the proper Proxy)

SYSTEM REQUIREMENTS

ANEMAN has been certified under Windows 10 (64bit), Windows 11 (64bit) and Mac OS Ventura, Sonoma, Sequoia and above.

Minimum requirements:

CPU of 2GHz with 4GB of RAM and 200MB of available disk space
Network connection (compatible devices should be on the same network)
Web Browser (Google Chrome recommended)

CAUTION: MAKING CONNECTIONS WITH ANEMAN MAY CAUSE SIDE EFFECTS ON THE NETWORK AND MAY TEMPORARILY BREAK STREAMS.

ANEMAN 2 CONCEPTS

ANEMAN 2 is based on a Client/Server architecture. An ANEMAN Server runs on one computer on the network and one or multiple ANEMAN Web App User Interfaces access the Server through a web browser.

An ANEMAN Agent is started on as many computers on the network as needed, and these Agents make sure to run one single ANEMAN Server in Master mode on one single computer on the network. From there multiple Web App User Interface can access the single ANEMAN Server though the network, or locally on the same computer running the Server.

The ANEMAN Agent takes care of:

- Connecting to or launching an ANEMAN Server when it starts.
- Three modes are available for managing the ANEMAN Server launching, Master, Slave and Hybrid. Please see the details below.
- Opening the Web App on the computer it currently runs and connect it to the proper ANEMAN Server on the network.
- Offering various settings/options.

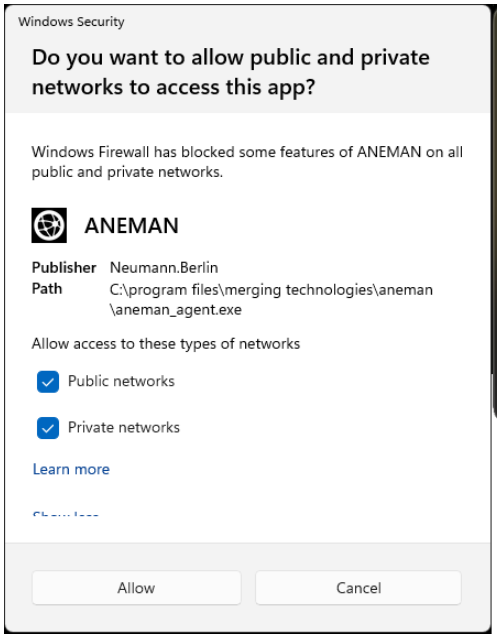
THE ANEMAN AGENT

After the ANEMAN Agent installation, please start the ANEMAN application. The ANEMAN Agent is then available in your taskbar.

By default in Hybrid mode, the Agent will look for an existing ANEMAN server on your network and will start one if none can be found. (see other Agent modes below).

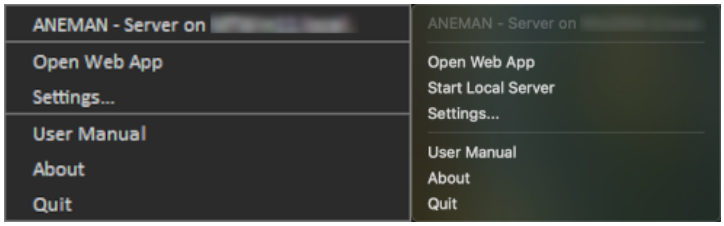
The Agent will then open the ANEMAN Webapp on your default browser (Google Chrome recommended) on that ANEMAN server.

IMPORTANT: the first time you start the Agent, Windows and MacOS will prompt you to allow ANEMAN on your network. Please allow access to your networks.



The ANEMAN agent can be used to view and configure the ANEMAN webapp.
There should only be one Server in the network.

ANEMAN AGENT MENU

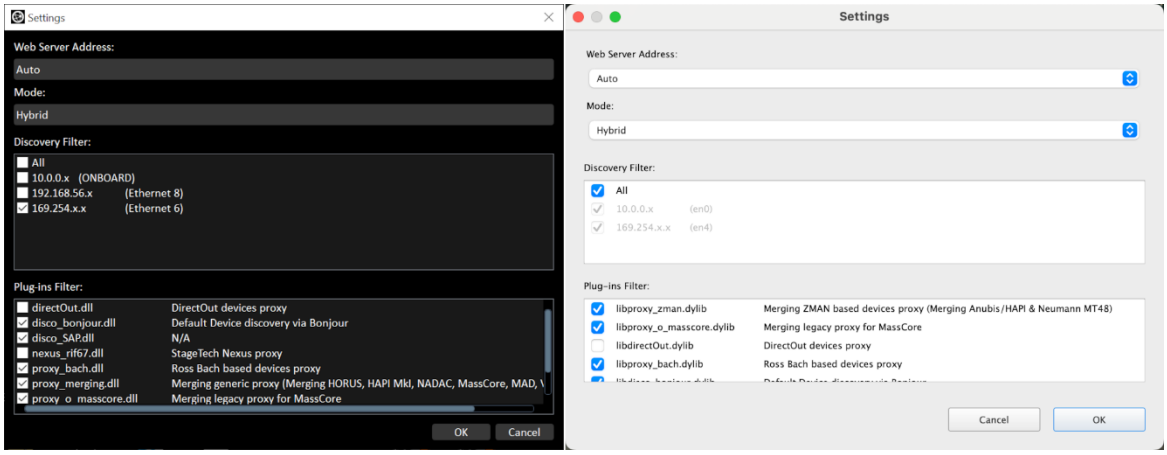


ANEMAN Server: Current ANEMAN Server name.
No Server Running: ANEMAN cannot find any server, whether the server has been stopped, and/or the running mode is set to Slave.

Open Web App: Opens the ANEMAN app in your default browser.

Start Local Server (Hybrid or Master mode only): Starts a server even if a server already exists or if an existing server stopped.

Settings



Web Server Address:

Allows for setting the Web Server IP Adress in case of multiple network adapter present on the computer running the ANEMAN server. This allows for accessing the ANEMAN server from another network than the AoIP network which is good practice.

Mode: Master - Slave - Hybrid (default)

- **Master**: When the Agent starts, it always starts an ANEMAN Server on the computer the Agent is running.

- **Slave**: When the Agent starts, it will search for an existing server on the network and will NOT start an ANEMAN Server if it does not find one.

- **Hybrid** (default): When the Agent starts, it will search for an existing ANEMAN Server on the network. If it can't find a server, it will start one.

To change the running Mode, you must Quit the Agent and restart it.

Discovery Filter (only active if the computer is hosting the ANEMAN server): Allow to select which Network Interface will be used for the Device Discovery (default: All)

Plug-ins Filter: Enable - Disable Aneman plug-ins.
Note: The Stagetech Nexus and the Archwave uNet plugins are only available on demand.
Please contact aneman@merging.com.

User Manual: Link to ANEMAN User Manual

About: ANEMAN version

Quit: Stops the Agent. If the ANEMAN Server is running on this computer, it will also stop the ANEMAN Server.

THE ANEMAN USER INTERFACE

ANEMAN's Web App user interface is composed of four main panels:

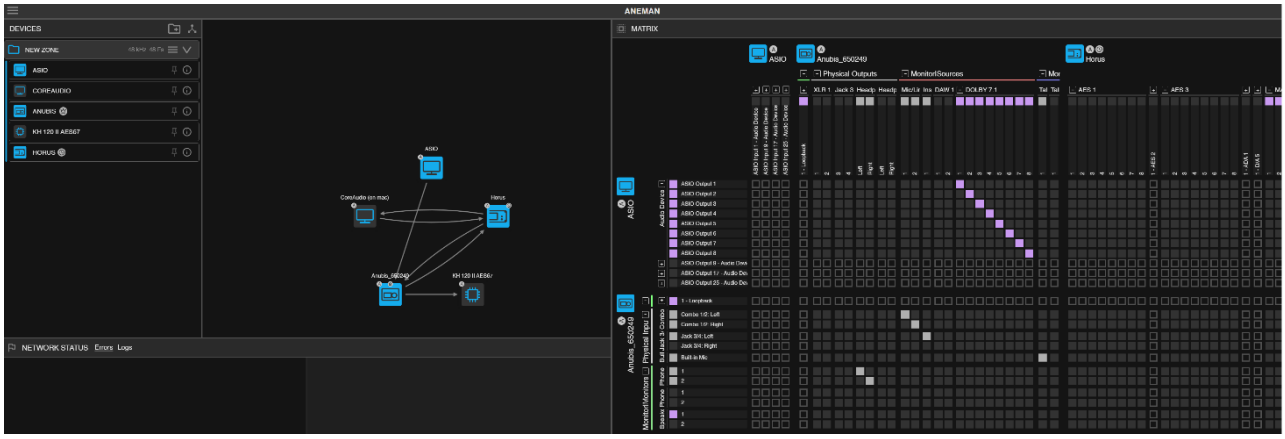
The DEVICES VIEW (top left): this view is a table listing the device on the network with basic information, and let the user manage different zones.

The WORLD VIEW (top center): this view allows you to discover devices and arrange them.

The MATRIX VIEW (right): selected devices will appear in the matrix view where the user can view, add, remove and monitor connections.

The NETWORK STATUS VIEW (bottom left): Logs tab displays any error and report the network activity.

Each one can collapse and un-collapse by clicking on its icon.



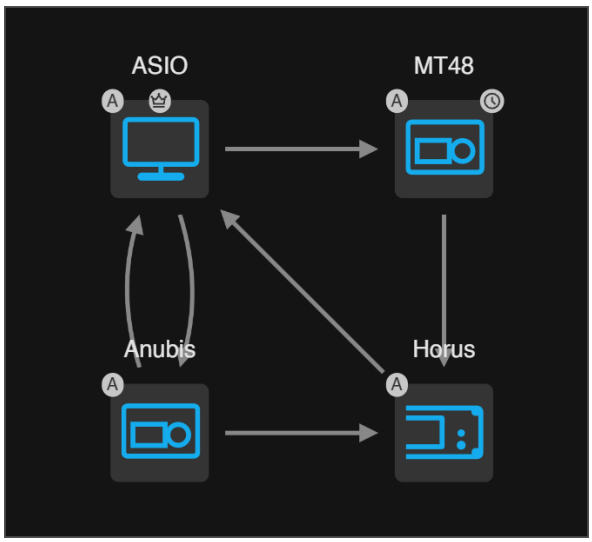
WEB APP SETTINGS

The Web app settings can be accessed by clicking on the Gear icon on the top right corner.

Size: Web page display size (60-120%).
Note: this setting comes in addition to your browser Zoom level.

Matrix Settings - Vertical IO: Inputs or Outputs. Sets Inputs or Outputs vertically in the Matrix view.

THE WORLD VIEW



Devices appear in the world view if they are discovered on the network and *pinned in the DEVICES VIEW or belong to a Zone.*

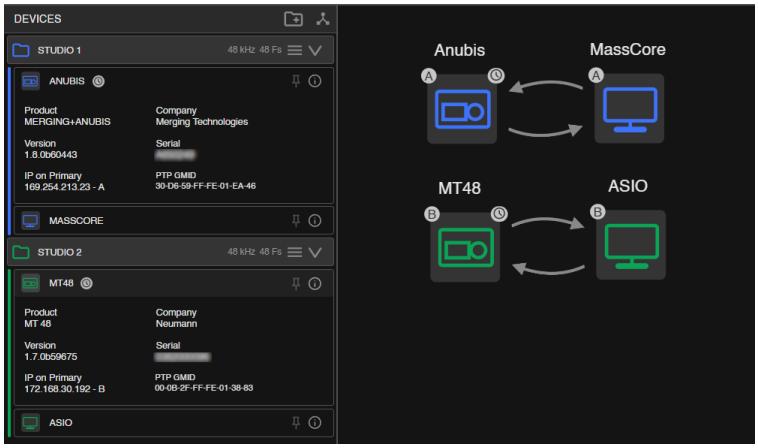
All RAVENNA devices will show in the World view but only supported devices will be fully controllable with the software.

MOVING

Clicking the background allows you to move the world view. Devices can be moved by left click dragging them and zooming is achieved via scrolling. Double clicking the background will reset the view to show all devices.

Holding CTRL draws a selection zone with the mouse left click.

SUBNETS

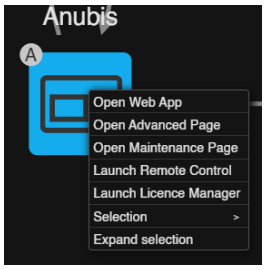


Each device shows a letter on its top left corner indicating a subnet. Devices of different subnets cannot generally be connected together.

This information is also available in the Devices view, in the Information section of the devices.

CONTEXTUAL MENU

Right clicking on the device opens a contextual menu where you can access the Web Services published by the device (for instance the basic and advanced webpage of a Horus).



Note: Remote Controller app and Merging License Manager must be installed on the computer hosting the ANEMAN server.

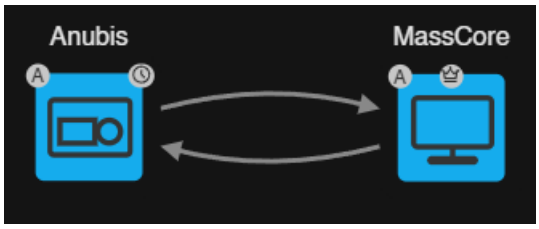
If a device is selected, Expand Selection will automatically select the device(s) connected to the selection.
If at least 2 devices are selected, the Selection > Circle / Grid will rearrange the devices visually.

ZOOM

To Zoom in the view, use your scrolling wheel, or touch pad scrolling function.
Double clicking the background will reset the view to show all devices.

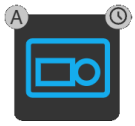
CONNECTIONS

When connections are made between devices, a link is present in the world view. This link is grey when everything is OK and red if one of the connections is broken.



WORLD VIEW INTERFACES INDICATORS

The Clock indicator shows who is the PTP Master



The Crown indicator shows who is Zone Master

The Letter indicator shows the device subnet

The yellow Recycle indicator shows the device is running in Maintenance mode.

THE DEVICES VIEW

The DEVICES VIEW is a table listing all discovered devices and previously pinned devices.

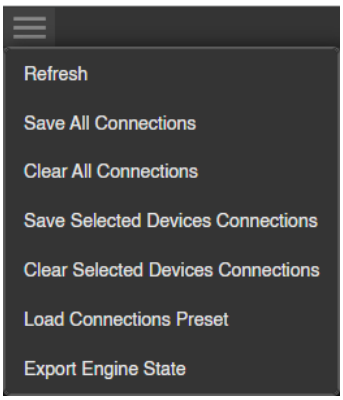
The Devices View allows for arranging and sorting Devices and allows for grouping them in Zones.

The order in the Devices View determinates the order the devices will appear in the Matrix View.

The Devices are named following its unique Bonjour/zeroconf device name.

GENERAL MENU

The General Menu is accessible on the top left corner of the screen.



Refresh: The Refresh button will rediscover all devices and update the list.

Save All Connections: Save the connection state for all devices currently displayed in a preset file.

Clear All Connections: This will remove every streamer and receiver of all devices on the network. This action can be used to «clean » a device that may badly respond to configuration.

Since it will clear all the Connections that exists over your network, this action must be confirmed.

Save Selected Devices Connections: This will save the connection state between the selected devices in a preset file.

Clear Selected Devices Connections: This will remove every streamer and receiver of the selected devices. This action can be used to «clean » a device that may badly respond to configuration.

Note: Clear All / Selected Connections will not clear the internal connection of the MERGING ANUBIS or NEUMANN MT 48.

Load Connections Preset: Saved connections configuration can be recalled by Load Preset.

Export Engine State: Export the current ANEMAN state as Json file.
If you think you find a bug or want assistance on a behavior of the software that you cannot understand, you can assist us in improving the software by sending the report generated.

Notes on Preset files

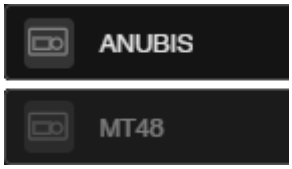
Recalling a preset will not overwrite existing connections, it may be necessary to clear all connections before performing a recall.

If you have saved a preset for selected devices or devices in a zone, loading a preset will only affect those devices.

Preset files are stored in C:\Users\YourUserName\AppData\Roaming\Merging Technologies\aneman\connections (Windows) Users>YourUserName>Library>Application Support>Merging Technologies>Aneman>connections (Mac)

The ANEMAN server only have access to the preset files that has been saved on the computer it is running on.

DEVICES



Present/online devices are displayed solid white.

Not present/offline devices are displayed greyed out (ghost devices).

The info button displays the device Product, Company, firmware version and serial number.

It will also display the PTP Domain, PTP GMID and the IP address(es), with Subnet indicator letter.

Pin: Devices discovered on the network will be placed in the Devices list.

If you want the Devices to appear in the World View and to remain present even when offline, click on its Pin Icon.

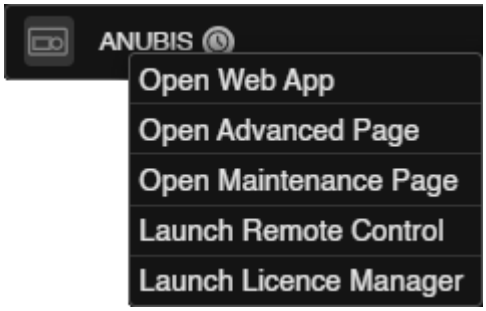
Pinned Device

Unpinned Device

To remove an offline device, click on its Pin icon to unpin it. The device will be immediately removed from the World view but will remain in the Devices view until you refresh the browser page.

Note: a device in a Zone cannot be unpinned. Please first remove it from the zone and if you want to unpin it.

Device contextual menu: right click on a device allows to open the device Web App, Advanced pages, Maintenance page (depending on the type of device).



Note: Remote Controller app and Merging License Manager must be installed on the computer hosting the ANEMAN server.

DEVICES VIEW INTERFACES INDICATORS

PTP Master icon: The PTP Master device shows a Clock icon.

Zone Master icon: Devices set as Zone Master shows a Crown icon.

Zone Master missing icon: The device set as Zone Master is not present.

ZONES

Zones allow you to arrange the devices on the network: by location, by function etc.

Zones can also be used to maintain a specific sample rates and/or frame sizes on all devices in the Zone.

Please note that the devices should be up to date as well, and the Auto sampling rate option in the devices should be turned off.

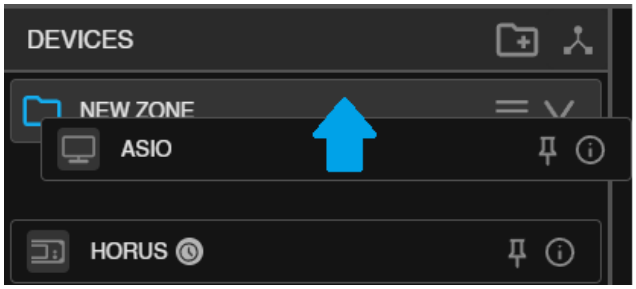
 The New Zone button located in the Devices top bar will create a new zone

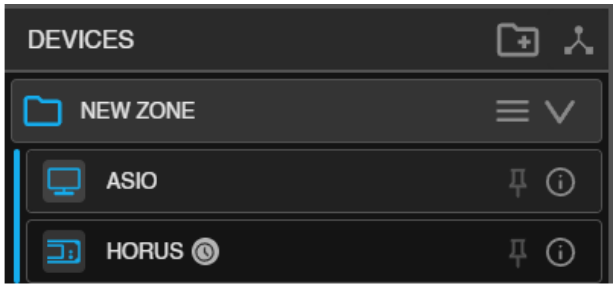
Zones can be collapsed / un-collapsed with the arrow icon 

If the Zone Master and/or sampling rate and/or frame size has been configured, it will be displayed in the Zone bar.

If the Zone Master previously set is missing, the crown icon will be greyed out in the Zone bar. 

To add a device in a Zone, drag it on the Zone bar to add (a line with the Zone color will be displayed while dragging the device in the Zone).



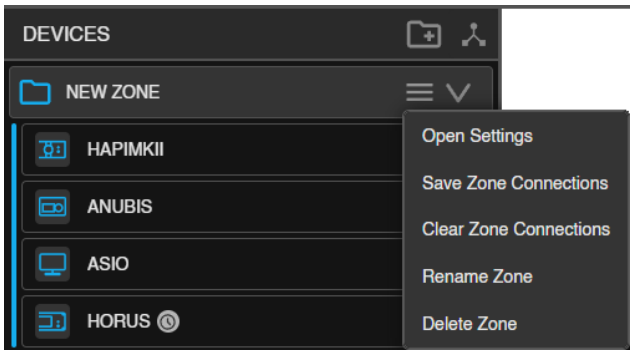


To remove device from a Zone, drag it outside of the zone (a light grey line will be displayed while dragging the device outside the Zone).

You can select one of the devices in the group to be the Zone Master in the Zone Settings (see below). Every other device in the zone will then be slaved:

- If the Master sample rate or frame size changes, the slaves will follow.
- If a Slave changes its sample rate or frame size, it will automatically be forced back to the zone's one.
- Specific sample rate and/or frame size can be set also in the Zone Settings.
  Every device in the Zone will automatically be forced back to the zone's one, if their sample rate or frame size has changed.

THE ZONE MENU



Open Settings: Open the Zone settings (see below)

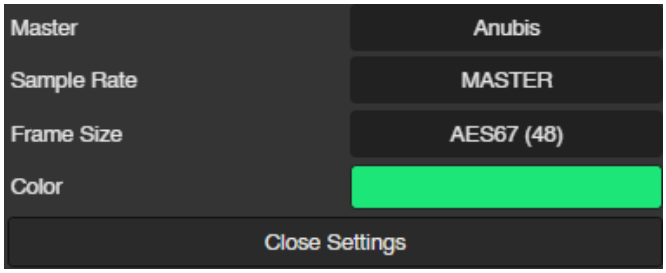
Save Zone Connections: Save the connection state between the Zone devices in a preset file.

Clear Connections: This will remove every streamer and receiver of all the devices in the zone.

Rename Zone: Rename the zone. You may also double click on the Zone name.

Delete Zone: Remove the zone and unassign its devices. Existing connections will not be removed.

ZONE SETTINGS



Master: Master Device Selection

Sample Rate:

- Follow the Master device sample rate (MASTER)
- Set a specific sample rate
- Disable the Zone sample rate control (FREE)

Frame Size:

- Follow the Master device frame size (MASTER)
- Set a specific frame size
- Disable the Zone frame size control (FREE)

Color: Color applied to the zone and its devices.

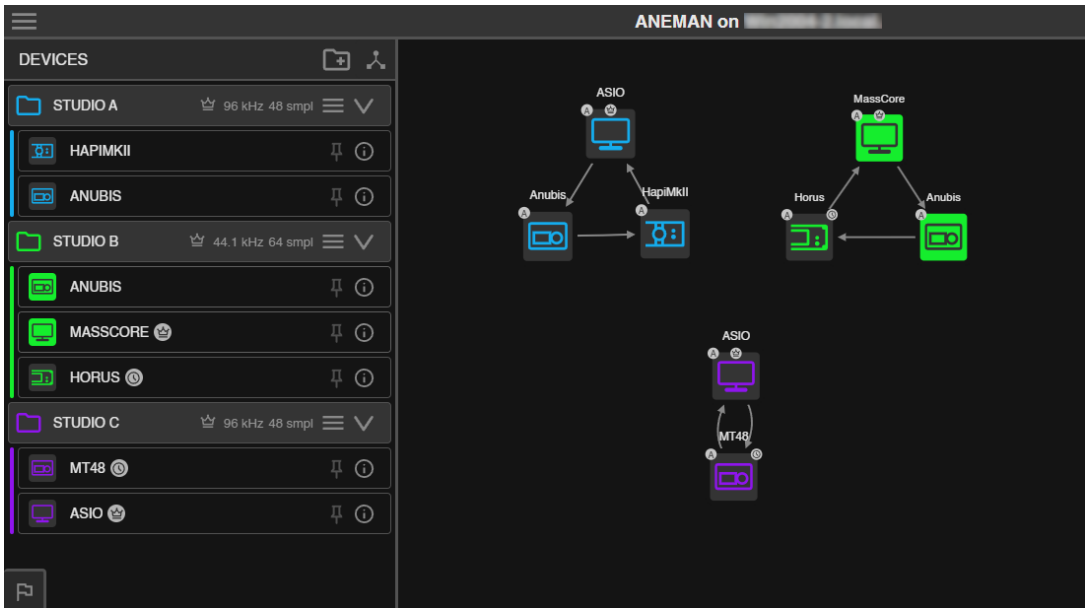
Notes:

Some devices may not be able to accommodate the sample rate or frame size of the zone and may therefore not be able to follow the Master in every case.

The Auto sample rate option in the devices may also interfere, it should be disabled if using ANEMAN.

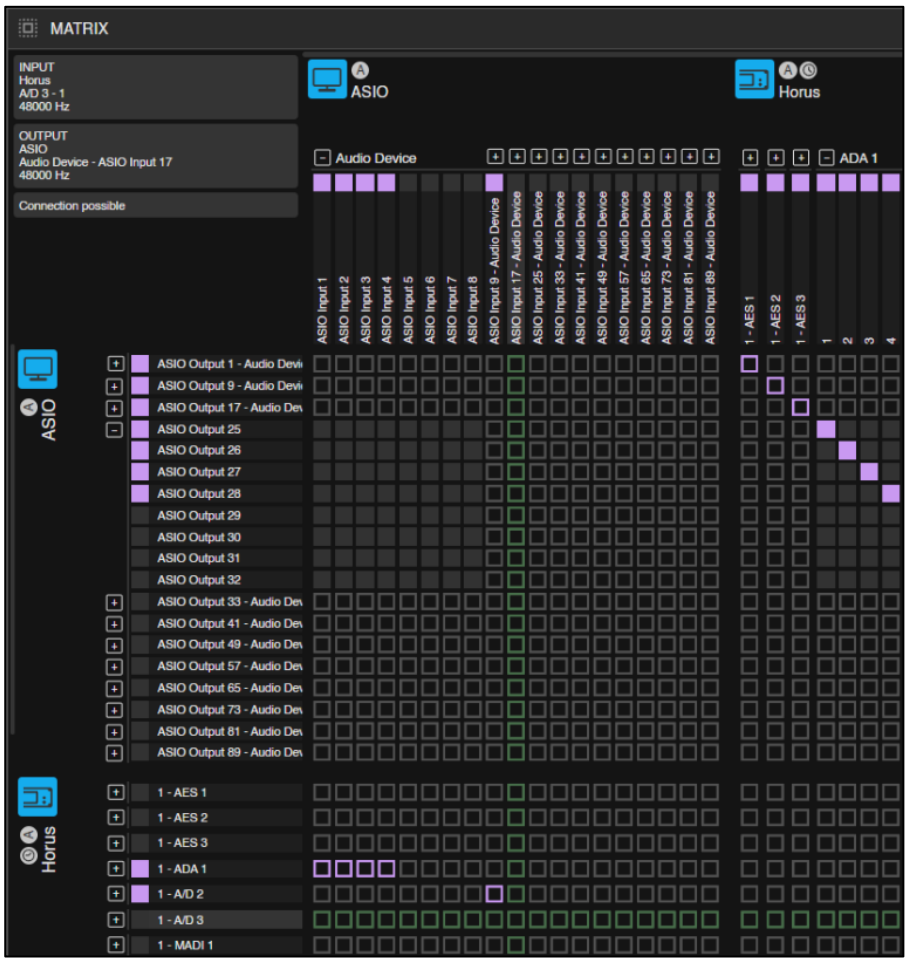
Small frame sizes (like 6, 12 or 16) can be challenging to achieve, depending on the devices (especially for software devices such as ASIO) and configuration.

Example of a three Zones setup



THE MATRIX VIEW

The Matrix View is populated with the devices selected in the Devices (or World) View.



THE INFO BOX

The upper left corner of the Matrix View contains the info box, it displays various information about inputs, outputs, and connections.

MOVING

To navigate in the Matrix, in addition to the scroll bars, drag + click or use the mouse wheel on the area on top (horizontal) and on the left (vertical) of the Matrix.

COLLAPSING IOS

Groups of inputs or outputs are collapsed by default by groups of 8. Clicking on the + will expand the inputs or outputs.

SHIFT-clicking + or - will expand or collapse every input or output for the device.

CTRL-clicking + or - will expand or collapse every input or output for the same IO type (e.g. all MADI 1 IOs will collapse).

A device can be completely collapsed by clicking on its icon in the Matrix.
Mixed cells (one side collapsed, the other expanded), will auto expand on click.

CONTEXTUAL INFORMATION

When hovering a connection point, the user gets contextual information about the related input, output and stream status or feasibility. The info box mentions if the Connection is possible, or not possible. If the connection is not possible, it will try to explain why Connection is prevented when:

Devices are not on the same subnet.

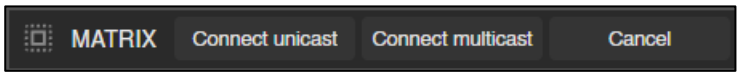
Devices do not share the same sample rate.

The device does not support internal connections

The output is already receiving a stream.

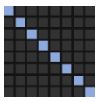
CONNECTION TYPE

Multicast connection is the default connection for AES67/RAVENNA devices.
But for devices supporting this feature, Unicast connection is proposed as well.



Apply Unicast:

Unicast transmission/stream sends IP packets to a single recipient on a network (e.g. a multi-channel stream between a console, a DAC and a recorder/DAW).
This uses a point-to-point connection between the sender and receiver. Since each additional receiver adds its own individual streamer, network traffic increases with every additional unicast stream. *(requires Horus/Hapi firmware 3.9.3b38957 and higher)*



Apply Multicast:

Multicast transmission sends IP packets to a group of hosts on a network. (e.g. program stream to journalists' desktops). At the sending end this only requires one streamer. Network switches are aware which participants (receivers) should receive any particular multicast and forward packets only to registered nodes. In multicast set-ups the network traffic only increases on the last (closest to receiver node) segment(s) of the network path.

Unicast vs. Multicast

ADDING AND REMOVING CONNECTIONS

Clicking the matrix cells will either try to add a pending connection or remove an existing connection. Connections add or remove are sent to the device in bulk by clicking « apply multicast/unicast » for the connection command to be sent to the network. Resetting the current routing can be done by clicking « Cancel ».

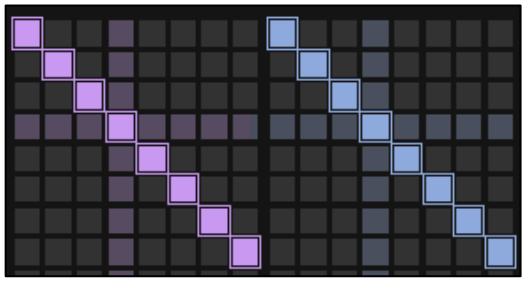
Clicking a collapsed cell (collapsed input AND output) will automatically create or delete a connection in all 8 diagonal cells of the collapsed sub matrix.

COLOR CODING OF CONNECTION POINTS

Purple connection points indicate an « ok » Multicast connection.
Pastel Blue connection points indicate an « ok » Unicast connection.
Yellow connection points indicate an incomplete connection.
Green and Red connection points respectively indicate to be added or removed connections.
Light Grey connection points indicate device internal routing.

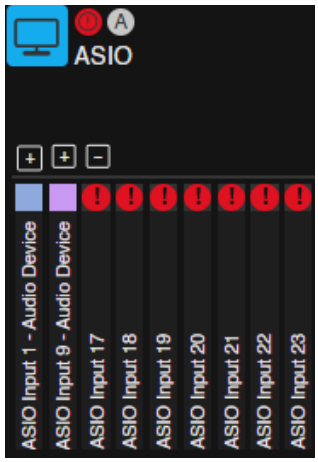
STREAMS

When hovering on a connection point, the user can visualize the stream associated with the connection: all the connections belonging to the same stream will be squared.



CONNECTION STATUS AND ERROR MESSAGES

If a connection is incomplete, the matrix cells and top row are colored red.
Error codes and messages are given to begin the correction of the problem in the Network Status tab.
Clicking in any red dot in the top row will automatically open the Network Status tab, showing the related error.

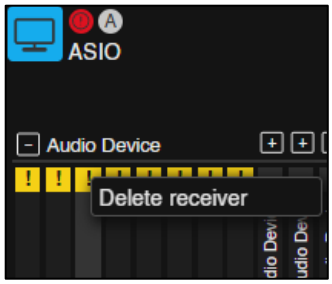


OUTPUT STATUS AND RECEIVER DELETE.

It may be the case that a receiver is present on a device with no attached streamer. You can easily spot the status of an output (busy or note) in the matrix, and right-clicking on this output will give you the ability to delete the attached receiver if needed.

Always proceed with caution when deleting receivers, prefer deleting connections.

As always, an output with a purple or blue square means that the receiver is receiving the stream and connected while a yellow square will indicate an error.



MANAGING EXISTING STREAMS

An indicator for each module on the sending side of the matrix allows for stream management. As usual, purple / blue means nothing to worry about and red means that at least one stream is in error.

When right clicking on any of the module, a menu will appear where you can remove streams from the device.
LTC and Video Ref streamers cannot be removed.

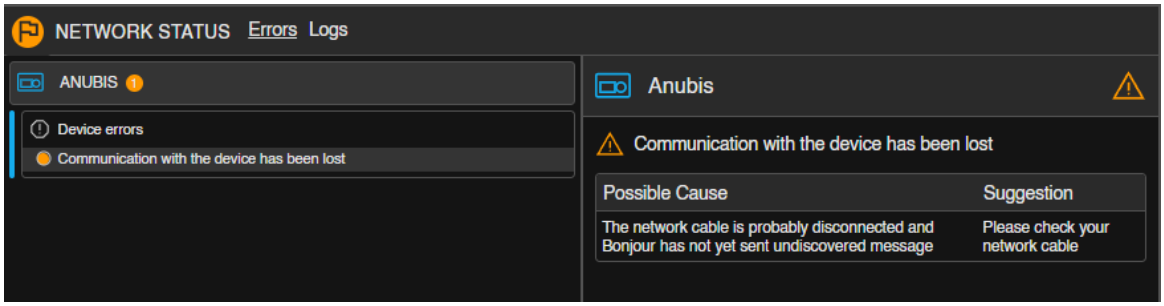
Always proceed with caution when deleting streams, prefer deleting connections.

NEUMANN MT 48 LIMITATION

Neumann MT 48 connected with USB cannot be used in ANEMAN, connections are not possible.
Please connect your Neumann MT 48 with the AES67 / RJ45 connector to use it in a RAVENNA / AES67 network.

THE ERRORS TAB

The Error tab shows the current errors, warnings, but also hints on the problem and suggestions to fix it.



Errors and warnings are reported for Devices, Streamers (sources) and Receivers (sinks).

Some errors are reported by the devices; therefore, it depends on the manufacturer if errors are reported or not.

Merging Technologies devices all support error reporting to ANEMAN (Horus - Hapi - Hapi MKII - Hapi MKIII – MERGING ANUBIS - NEUMANN MT 48).

In order to see the error, click on the red dot-error in the World or Matrix view, which will automatically open the Network Status tab on the related error.

ANEMAN will describe the error, with its possible cause, and give you hints on how to fix the issue.

The errors will remain present until they are fixed, and if an error would occur again ANEMAN would report it. So, if you've fixed the issue ANEMAN will no longer report it.

Note: For proper error reporting, devices should be up to date with the latest firmware.

THE LOGS TAB

ANEMAN activity and messages reported by the devices are logged in this tab. This tab can be used for debugging purposes.

DANTE/AES67 AND SAP

ANEMAN will discover Dante/AES67 streams on the network and show them as standalone devices in the Devices view. Those devices will only show inputs to be connected to ANEMAN compatible devices. This means that ANEMAN acts as a reverse Dante controller for that matter (Dante controller discovers AES67 streams and connect them to Dante devices). For a full mixed Dante/AES67 setup with ANEMAN you will still need to use Dante Controller.
The SAP plugin is mandatory to discover and use ANEMAN with such devices, please make sure the plugin is enabled in the Agent Settings.

SAP device will be displayed with a generic AES67 icon.
Limitations: always connect streams of 8 channels, it is not possible to add channels in an existing connection, please remove the connection first and reconnect the 8 channels.

LIMITATIONS

When trying to apply a connection, the following restrictions apply:

Connection requires devices to have the same sampling rate and to be in the same IP subnet.

Some devices may not accept connections if the frame size does not match.

Some devices will not accept connecting Input to output on the same device (Horus, Hapi 1

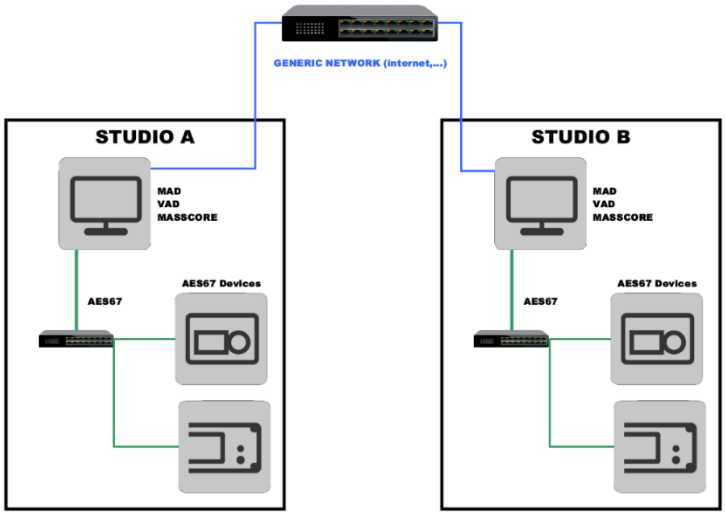
When recalling a device configuration from the device menu, it will recall streamers and receiver. Do not forget to clean the device when recalling connections using ANEMAN.

Neumann MT 48 connected with USB cannot be used in ANEMAN, connections are not possible. Please connect your Neumann MT 48 with the AES67 / RJ45 connector to use it in a RAVENNA / AES67 network.

ADVANCED ANEMAN SERVER CONFIGURATION

Depending on your setup, the ANEMAN server should run in specific modes.
The ANEMAN server will only discover devices which are currently connected to the computer it is running on.
When the ANEMAN agent starts, it search for any running ANEMAN server, through all available network interfaces (including Wifi).
If no server is found, an ANEMAN server will be started, if the Agent is configured in Hybrid or Master mode.
If a server is found, it will connect on this server, if the Agent is set to Hybrid or Slave mode.
When the Agent is configured as Master, it will always start a server. If another server is already present and configured as Hybrid, it will be disabled and connect on the new Master.

TWO STUDIOS WITH INDEPENDENT AES67 NETWORKS AND DEVICES.

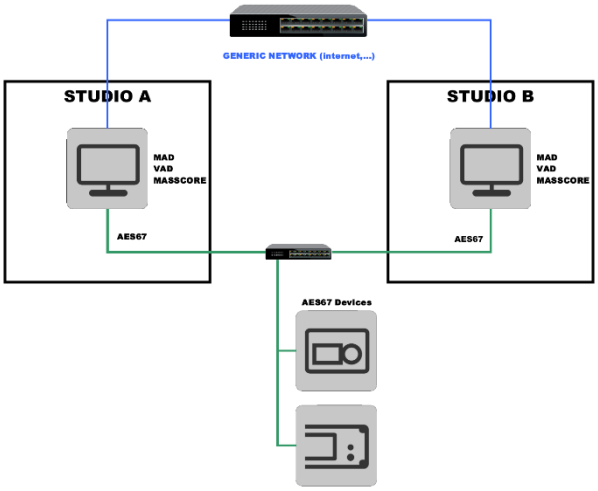


In such case, it is recommended to set the ANEMAN servers to Master on both Studio A & B, as each studio has its private AES67 network, which are not connected together.
You must also configure the Discovery Filter in the Aneman Settings to the AES67 AOIP network only (and remove the generic / internet network)

If set to Hybrid, the computer hosting the ANEMAN server (e.g. Studio A) would discover its AES67 devices, the second computer would only see the devices attached to the computer hosting the ANEMAN server, in our example, Studio B would see the Studio A devices, but not its own devices.

The same issue would happen if Servers were set to Master - Slave or Master - Hybrid.

TWO STUDIOS SHARING COMMON AES67 NETWORK AND DEVICES.

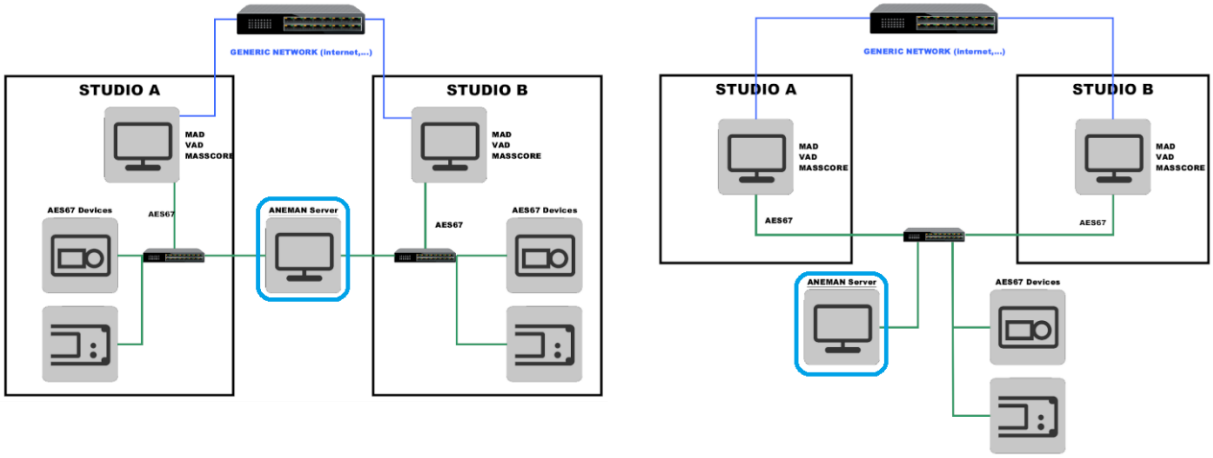


As both computers are connected to the same AES67 network, any computer may host the ANEMAN server. Therefore, it is recommended to set both in Hybrid mode.

The first computer starting the ANEMAN server will host it, and if it stops, the second computer will automatically start an ANEMAN server.

Alternatively, it is possible to set the Servers to Master - Slave, but if the Master is not present or stops, the Slave will not start an ANEMAN server.

SINGLE ANEMAN SERVER TO CONTROL SEVERAL STUDIOS



If you want to have a single ANEMAN server on a dedicated computer, it has to be connected on the AES67 Network(s).
It should be set to Master, and other computers should be set to Slave.

The Master computer should be configured to run all the time, by disabling power management features like hibernate or sleep.

DISCOVERY FILTERS

The Discovery filter lets you select which network interfaces can be used by ANEMAN to discover devices.
Wifi can't be used for devices discovery.
This setting is only active on the computer hosting the ANEMAN server

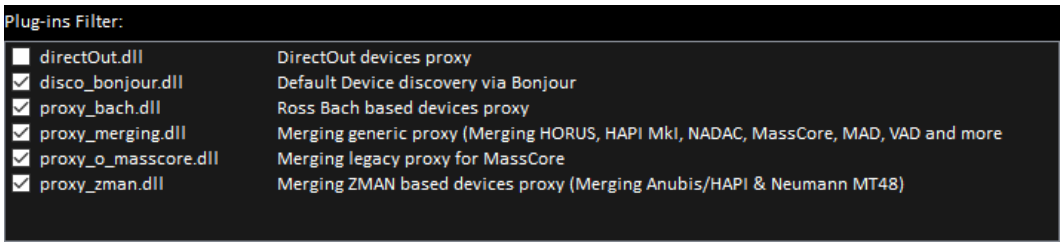
PLUGINS

MANAGING PLUGINS.

ANEMAN embeds a plugin manager accessible from the Agent menu - Settings.
The Plug-ins Filters section shows the status of currently installed plug-ins.
The disco_bonjour, proxy_merging, prox_masscore, proxy_zman and proxy_bach are enabled by default, and should not be disabled.
The directout and disco_SAP are installed but disabled by default.

After enabling or disabling plugins, you will need to quit and restart the ANEMAN Agent.

Note: The Stagetech Nexus and the Archwave uNet plugins are only available on demand.
Please contact aneman@merging.com.



REMOVING PLUG-INS

To remove plug-ins, remove the files in the plugin's directory

Windows: C:\ProgramData\Merging Technologies\Aneman\plugins

MacOs: /Applications/Aneman_Agent/Contents/Plugins/Plugins

FILES PATH REFERENCES

Logs files

Windows: C:\Users\YourUserName\AppData\Roaming\Merging Technologies\aneman\logs

Mac: Users>YourUserName>Library>Application Support>Merging Technologies>Aneman>Logs

Zones Configuration (Storage)

Windows: C:\Users\YourUserName\AppData\Roaming\Merging Technologies\aneman\storage

Mac: Users>YourUserName>Library>Application Support>Merging Technologies>Aneman> Storage

Agent Settings

Windows: C:\Users\YourUserName\AppData\Roaming\Merging Technologies\aneman\config.json

Mac: Users>YourUserName>Library>Application Support>AnemanAgent>Settings.ini

Presets Path

Windows: C:\Users\YourUserName\AppData\Roaming\Merging Technologies\aneman\ connections

Mac: Users>YourUserName>Library>Application Support>Merging Technologies>Aneman> Connections

Plugins Path

Windows: C:\ProgramData\Merging Technologies\Aneman\Plugins

Mac: Applications>Aneman_Agent>Contents>Plugins>Plugins

CONFIGURATION FILE

The Aneman Agent Setting file, *config.json* can be used also to add one or several parameters, mostly useful for debugging purpose.
The application must be restarted after modifying the config.json file.
Note: aneman.config file from previous versions are no longer compatible.

{
*"logs", "rotation_file_size"}, /*5MB=*/5242880)*
The max size of log files in disc. If the specific size is reached, the file is trimmed on top.
"logs", "reset": true | false
If true, logs will be deleted when ANEMAN is started in order to create new ones (def: false)
"BreakStreamsForOptimize": "yes" | "no"
Allow to del/recreate stream for optimization (def: no)
"discovery", "manual_only": true | false
Only manual discovery (def: false)
"logs", "proxyInstanceCallback"}: true | false
Debug only (def: false)
}

Please check with Merging's support when trying those options