

NA-4

Fohhn Net Ethernet Bridge

Please read this user manual through carefully before putting the system into operation and keep it for future reference.



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1. Introduction and General Instructions

Congratulations on the purchase of your **FOHNN**® DSP amplifier. Like all products in our **AMP CONTROLLER-SERIES, MA-SERIES** amplifiers are equipped with the latest CLASS D technology. These amplifiers have been developed to meet the highest demands for sound quality and reliability.

All DSP functions on a **MA-SERIES** amplifier can be controlled using a single piece of software, **FOHNN AUDIO SOFT**.

In order to benefit from all the advantages of your DSP amplifier and to guarantee trouble-free operation, please read the following instructions carefully before starting up the system and keep this manual for future reference!

1.1 Important Safety Instructions

Please read the following safety instructions in their entirety before starting up this device. Keep these instructions near the device at all times. Reading the instructions does **not** replace the need for awareness of and compliance with currently applicable national safety regulations and standards, or the observance of safe on-site working methods.

All information and technical specifications published here are based on data that was available at the time of publication. We expressly reserve the right to make any changes.

1.1.1 Definition of Terms

Danger

This signal word indicates a hazard with a high-risk level, which, if not avoided, could result in death or serious injury.

Warning

This signal word indicates a hazard with a medium risk level, which, if not avoided, could result in death or serious injury.

Caution

This signal word indicates a hazard with a lower risk level, which, if not avoided, could result in minor or moderate injury.

1.1.2 General Safety Instructions

Danger:

To avoid danger to life or limb, please ensure that all personnel involved in installing or dismantling this type of system have read and understood the contents of this manual.

That said, the information presented here should be regarded as accompanying advice and it does not affect the ultimate responsibility of the user to ensure safe on-site operation of a **FOHNN** system.

Warning:

To avoid injury,

- ⚠ the device must be stored, installed and operated well away from children.

To avoid injuries, this device must be taken out of operation, marked appropriately and protected against accidental use if it

- ⚠ shows visible signs of damage
- ⚠ appears to contain loose parts,
- ⚠ is not working correctly,
- ⚠ has been subjected to unfavourable conditions (e.g. moisture) for a prolonged period
- ⚠ has been subjected to poor transportation conditions (e.g. with unsuitable packaging or humidity).

If necessary, please contact your FOHNN dealer or the transport company immediately. Our contact details can be found in the appendix to this user manual.

1.1.3 Electrical Safety Information

FOHNN DSP amplifiers are Protection Class 1 appliances. They are built and certified in accordance with the VDE safety measures for electronic devices and, safety-wise, leave our factory in perfect condition. The devices comply with all currently applicable EMC directives, as confirmed by the attached CE marking.

The relevant standards can be found in the appendix to this user manual.

Warning:

To minimize the risk of electric shock,

- ⚠ the mains contact grounding pin must never be separated and under no circumstances should the plug be taped up.
- ⚠ the device must **only** be connected to a professionally tested shockproof socket.
- ⚠ the device enclosure must never be opened. The device does not contain any components that can be repaired by the user. In the unlikely case of a defect, please consult qualified service personnel and/or the dealer from whom you purchased your system!

Please also ensure that the local mains supply voltage matches the power supply voltage specified on the device.

To minimize the risk of an electric shock or fire,

- ⚠ the device must not be subjected to moisture.
- ⚠ containers filled with liquid (e.g. beverage containers) must not be placed on the device.
- ⚠ ventilation slots must not be covered with objects (e.g. protective rain covers).
- ⚠ the device must not be subjected to excessive heat, sunshine, fire or similar.
- ⚠ no open sources of flame (e.g. pyrotechnics) must be placed on the device.

Caution:

To avoid damaging the device,

- ⚠ do not leave the power cable plugged in if the device will not be used for a prolonged period.
(Remove the plug from the mains socket in order to completely disconnect the device!)

1.1.4 Acoustic Safety Information

FOHNN loudspeaker systems are capable of generating very high sound pressure levels, which can cause irreparable damage to hearing.

Warning:

To avoid potential hearing impairment,

- ⚠ never stand in close proximity (1 metre or less) to a loudspeaker device while it is in operation.

To prevent both hearing impairment and damage to the device, avoid the following while the device is in operation:

- ⚠ acoustic feedback
- ⚠ high powered, permanently distorted signals
- ⚠ impulse noises, which can occur when a device is switched on or off, connected or disconnected from the system

1.1.5 Connections and Cabling

Please note the following when wiring up your system:

- ⚠ Check that your cable is working faultlessly and only use cables with a sufficient cross section.
- ⚠ Only use cabling and connector materials that meet professional standards.
- ⚠ Only use properly shielded cables and plugs for the audio and data connections.
- ⚠ Only use power cables with a fully intact grounding pin and make sure that the device's mains plug is accessible at all times so that it can be quickly removed from the mains supply in the event of a malfunction.
- ⚠ Lay and secure the cabling so that it cannot be damaged by tools, or through being trapped by the device or by a fixing bracket.
- ⚠ Protect any laid cables from mechanical damage, or unnecessary traction.
- ⚠ Avoid excessive tightening of the screws on connection terminals!

The wiring up of loudspeakers should only be done by suitably qualified personnel!

Important: To enable communication between a Windows PC with **FOHNN AUDIO SOFT** installed and MA-Series amplifiers, a **FOHNN** network adapter (e.g. **NA-11 FOHNN-NET USB ADAPTER** or **NA-4 FOHNN-NET ETHERNET ADAPTER**) is recommended.

More information can be found in Chapter 3 of this user manual!

1.2 Operating Conditions

Please note the following when operating your system:

- ⚠ The permitted ambient temperature of the device during operation ranges from 0 °C to +40 °C.
- ⚠ The device is intended for use in a dry environment with normal levels of dust and humidity in the air.
- ⚠ If moisture has built up on the device's rear panel, either during transportation or storage, let the device acclimatise for ca. 2 hours before use.
- ⚠ Never expose the device to aggressive chemical fluids or vapours.
- ⚠ Always make sure that heat can be dissipated via the outer surfaces of the device enclosure.
- ⚠ Always make sure that the device is well ventilated. In order to ensure adequate cooling, the device must not be covered with towels or cloths. Avoid letting the enclosure become hot through exposure to sunlight or strong spotlights.
- ⚠ Never expose the device to strong vibrations.

1.2.1 Information on Abnormal Operation

If the permissible operating temperature is too high (over 75 °C), the device will shut down. As soon as the temperature returns to within the normal operating range, the device will automatically be switched on again.

The temperature of the **FOHNN** system is displayed in **FOHNN AUDIO SOFT**. Shutdown can also occur if the product is exposed to direct sunlight or very high environmental temperatures. Reliable operation is only guaranteed in compliance with the permissible ambient temperature range.

The device should be immediately inspected by a **FOHNN AUDIO AG** approved service partner if

- ⚠ the mains cable or power socket is damaged,
- ⚠ a foreign body or liquid has got into the interior of the device,
- ⚠ the device has been exposed to rain,
- ⚠ the device is not working normally, i.e. it is showing marked differences in performance,
- ⚠ the device is damaged (e.g. after a fall).

1.3 Storage and Transportation

Please note the following:

- ⚠ The device should only be transported in its original packaging
- ⚠ Store the device in a dry environment, with a constant ambient temperature, in order to avoid condensation.
- ⚠ The permitted ambient temperature range for storing the device is -10 °C to +70 °C.
- ⚠ Due to fluctuations in temperature during transportation and storage, condensation may start to build up on the surface of the device. Before operating the device, examine its surface for any signs of moisture. If this is the case, allow the unpacked device to acclimatise for a minimum of two hours in the environmental temperature before use.

2. The Product

2.1 Product description

Der NA-4 ist ein Fohhn-Net Ethernet Adapter zur Einbindung von Fohhn-Net Geräten in ein lokales, Ethernet-basiertes Netzwerk. Die Geräte können von einem PC aus, mittels Fohhn Audio Soft bedient werden. Die Software steht in aktueller Version für Sie zum kostenlosen Download auf <https://www.fohnn.net> bereit. Zudem bietet der NA-4 die Möglichkeit Fohhn-Net Geräte über ein TCP-Protokoll zu steuern und zu überwachen.

Der NA-4 lässt sich für alle Fohhn Geräte verwenden, die über eine RS-485 basierte Fohhn-Net Schnittstelle verfügen.

2.2 Contents

Every product is examined in accordance with the highest quality and safety standards prior to despatch.

Please check your product carefully for any signs of transport damage and, in the event of any damage having occurred, inform your dealer and the transportation company immediately. Please also check that the packaging contains all the components belonging to the device.

Your **FOHNN** system contains the following:

- 1 x NA-4 Ethernet Adapter
- 1x USB cable
- 2x Rack mount bracket

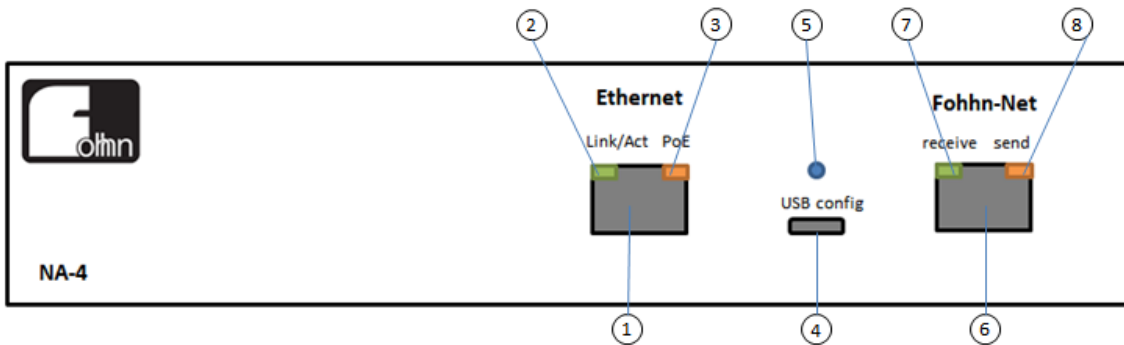
If the contents are incomplete, please contact your FOHNN dealer.

2.3 Unpacking

When unpacking the system, we recommend the following procedure:

1. Open the packaging and take out the product.
2. Examine the product for any visible signs of transport damage. If the product has been damaged, inform the transport company immediately. A claim for transport damage can only be made by the recipient (i.e. you). Keep the packaging for examination by the transportation company.
3. As a general rule, always retain the packaging. Despatch the product in appropriate outer packaging or in a suitable flightcase.

3. Connections and LEDs



(1) Ethernet

RJ-45 Ethernet connection

(2) Link/Act LED

green light for Ethernet link, blinks on activity

(3) PoE LED

yellow light for PoE power supply

(4) USB config

USB-C socket for configuration and optional USB power supply

(5) USB config LED

blue light for USB power supply

(6) Fohhn-Net

RJ-45 connection for Fohhn-Net devices

(7) receive LED

green light for Fohhn-Net receive

(8) send LED

yellow light for Fohhn-Net send

4. Rack mounting

Included in delivery are two rack mount brackets (Rackmount-Set).



To mount two Fohhn 9,5" devices together in a 19" Rack an optional 19"-Rackconnector, article **8022-00000** is available .



To mount one MA-Series Verstärker in a 19" rack an optional 19"-Rack bracket with 6 openings for Neutrik D Serie sockets is available. Fohhn article **8023-00000**.

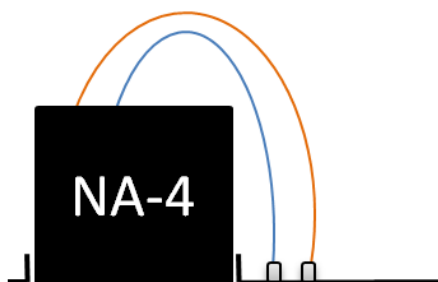


4.1 Combination with Neutrik etherCON panel connectors

1x **Fohhn 8023-00000** 19"-rack bracket

2x Neutrik NE8FDX-P6-B D-Form Socket

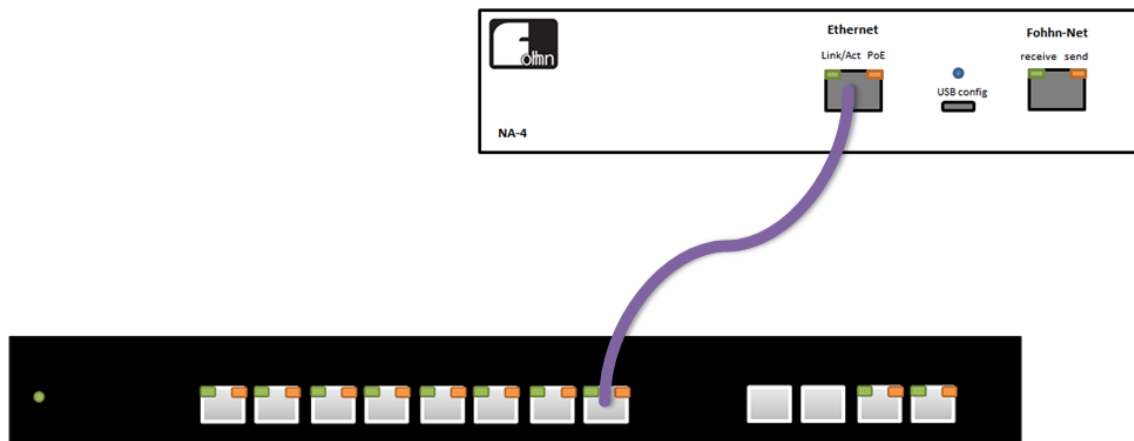
2x RJ-45 network cable



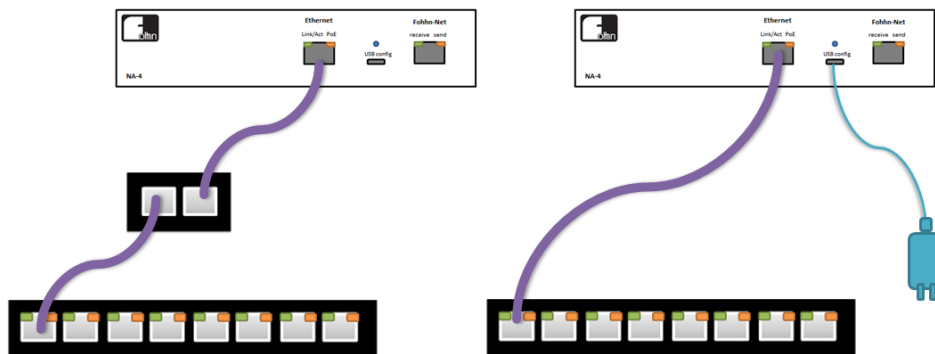
5. Setting up

5.1 Ethernet connection and powersupply

Connect the NA-4 Ethernet port to an IEEE 802.3af compatible PoE Ethernet switch.



If there's no PoE Ethernet Switch available a PoE injector may be used (IEEE 802.3af compatible) or a standard USB power supply (5V, 500mA).

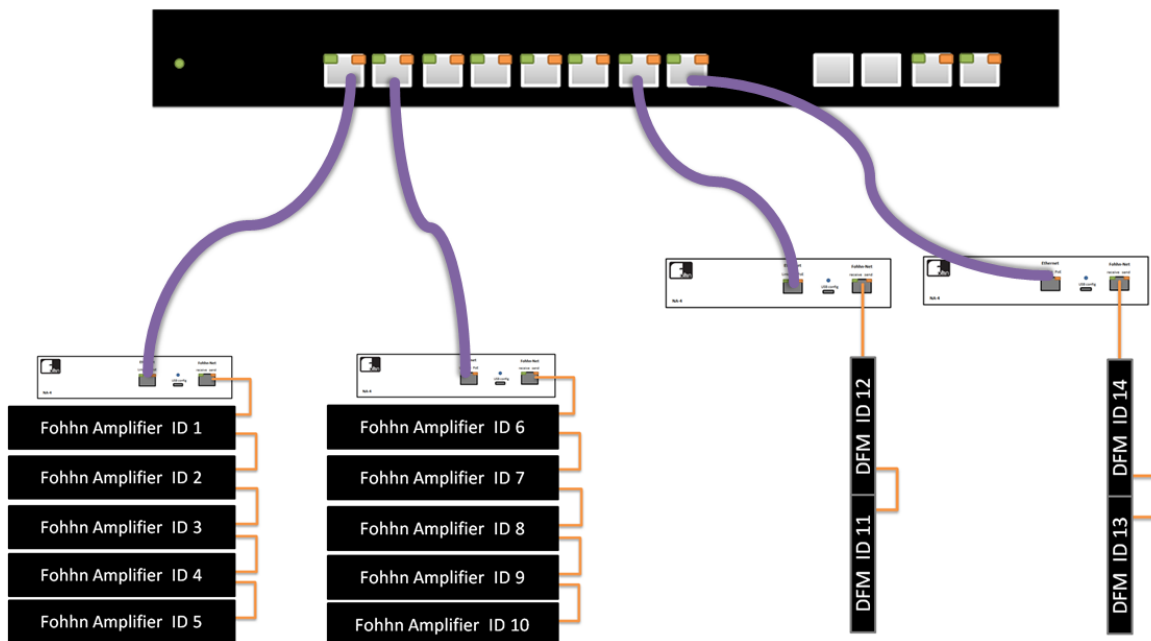


5.2 Fohhn-Net wiring

Multiple Fohhn-Net devices can be connected to the NA-4

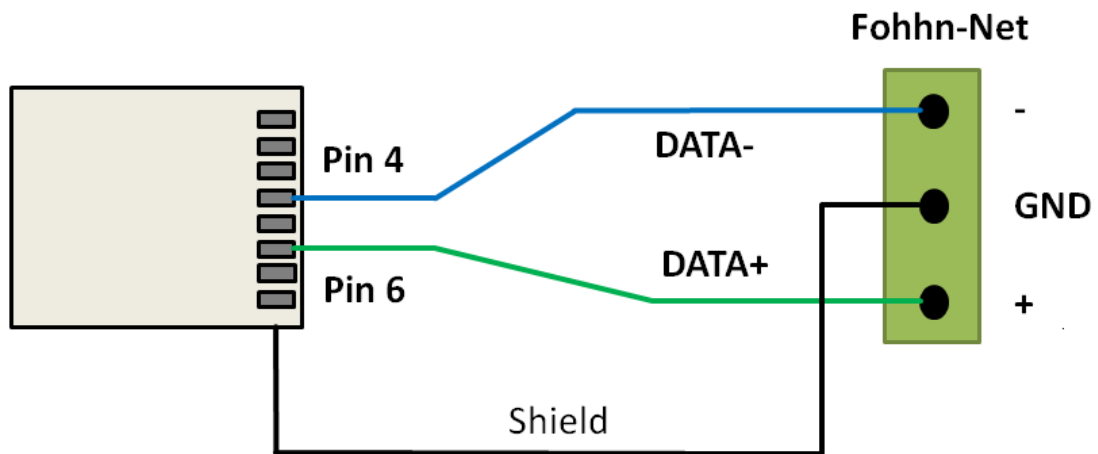


Use multiple NA-4 for larger Projects.



You can connect up to 20 Fohhn-Net devices to one NA-4

5.2.1 Fohhn-Net pinout



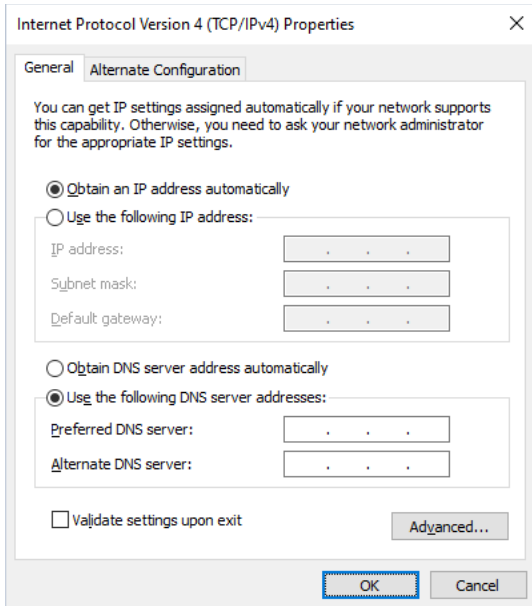
Fohhn-Net RJ-45 connection:

RJ-45 Pin	Signal
1	not connected
2	not connected
3	DATA+
4	DATA-
5	DATA-
6	DATA+
7	not connected
8	not connected

5.3 NA-4 configuration

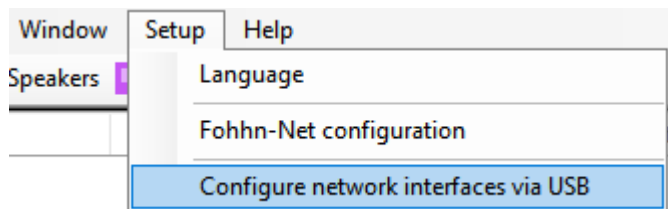
You can use NA-4 without any configuration.

Factory default setting is link-local configuration and DHCP. In this mode your PCs network card has to be configured to automatic.



5.3.1 NA-4 IP configuration

Connect the NA-4 via USB to a PC with Fohhn Audio Soft. Click on "Setup" -> "Configure network interfaces via USB".



Next dialog shows connected NA-4 adapters.

Device	Version	Mode	IP Address	Netmask	Gateway	MAC Address
NA-4	0.2.1	Auto IP / DHCP				08-FA-E0-00-00-10

Double click on device to change IP settings.

Double click on an adapter to change IP settings:

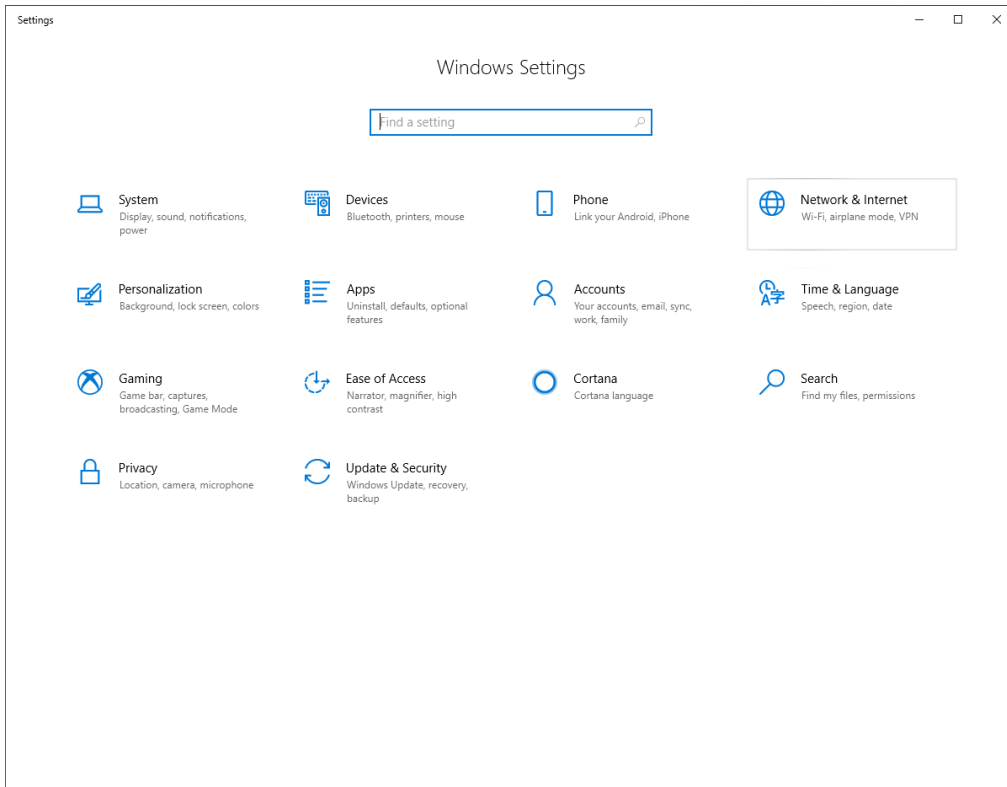
IPv4 configuration ✕

Automatic (Link-Local and DHCP)
 Automatic (Link-Local only)
 Manual (Static IP)

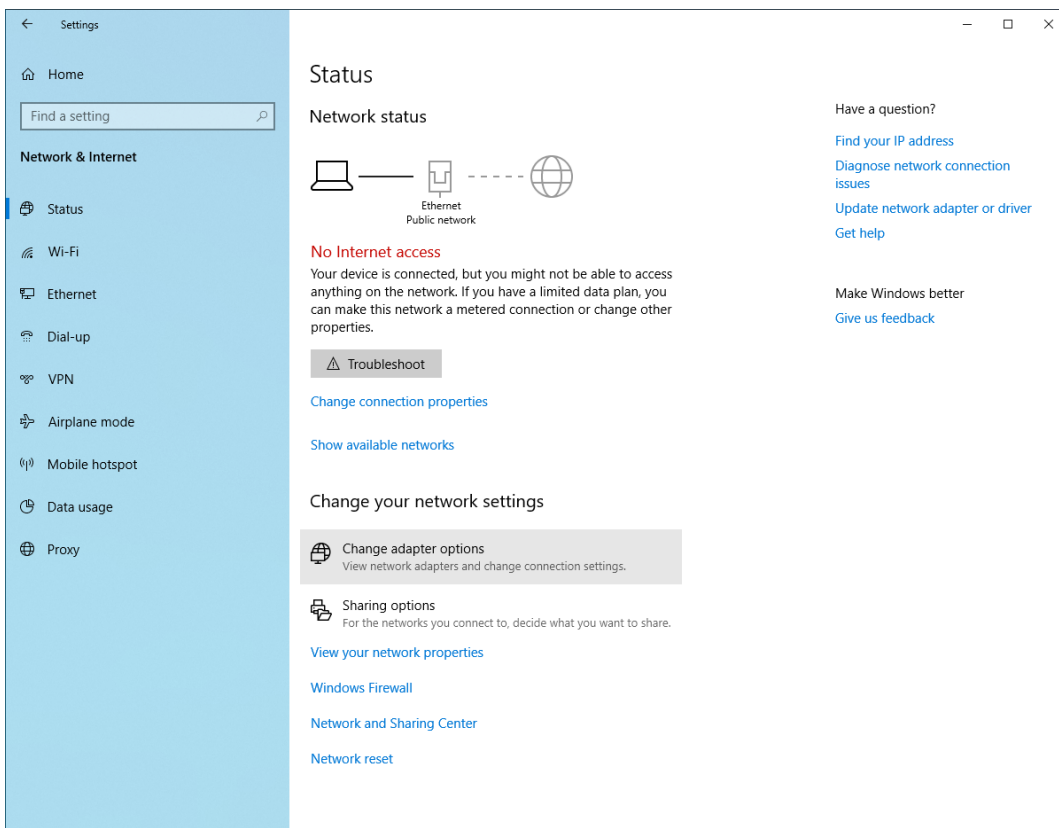
IP Address	Netmask	Gateway
<input type="text" value="192.168.1.4"/>	<input type="text" value="255.255.255.0"/>	<input type="text"/>
<small>e.g. 192.168.1.4</small>	<small>e.g. 255.255.255.0</small>	<small>optional</small>

5.4 Windows IP configuration

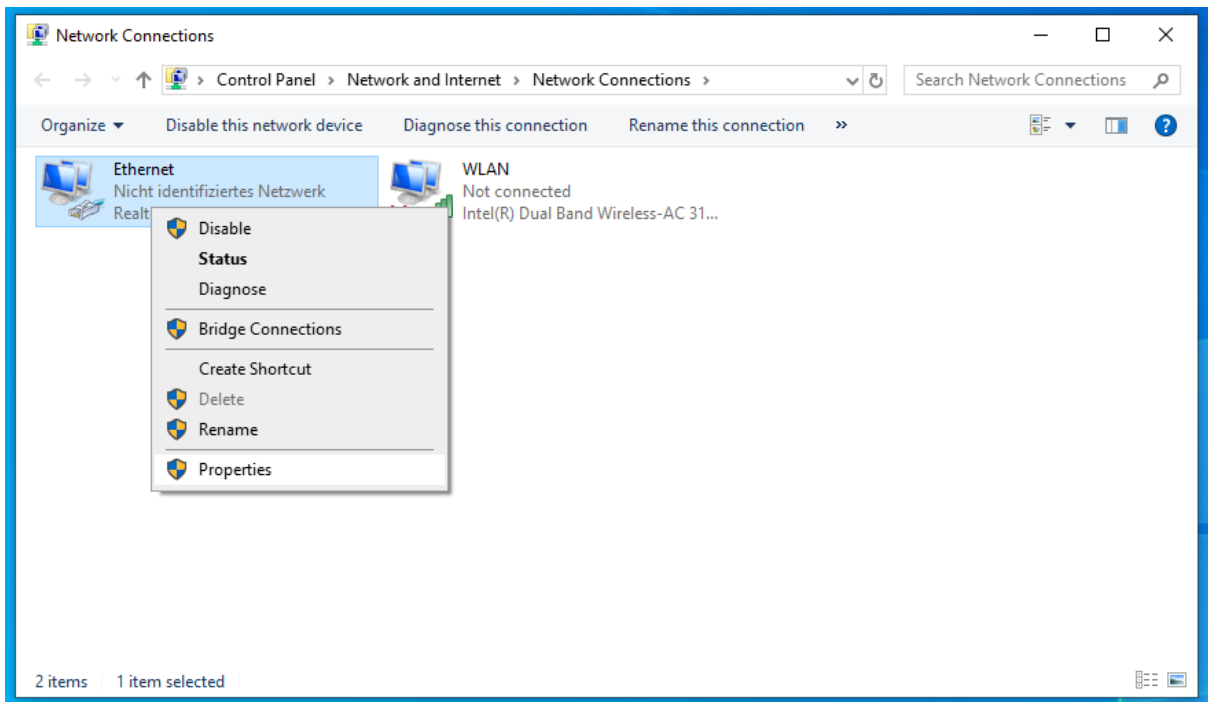
Open Windows Settings and chose Network & Internet.



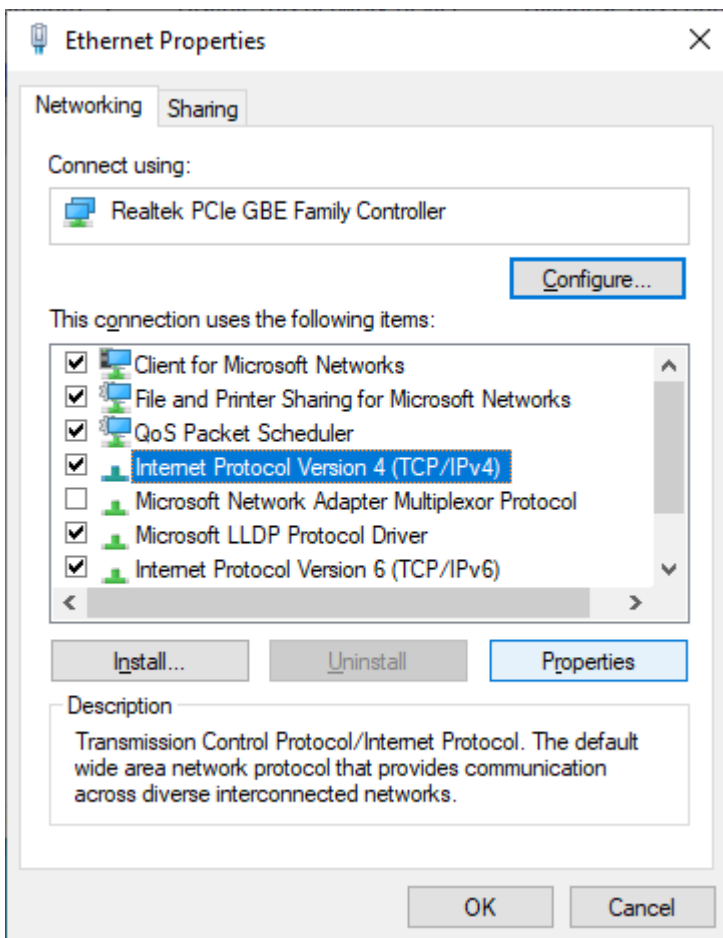
Now chose Change adapter options.



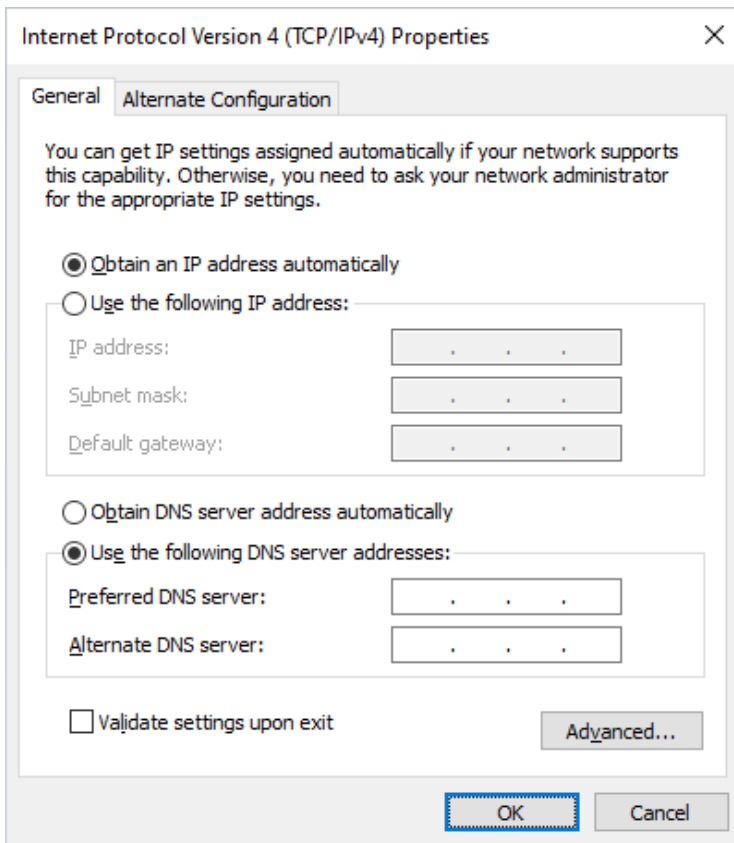
Select your network interface; open the context menu and chose Properties.



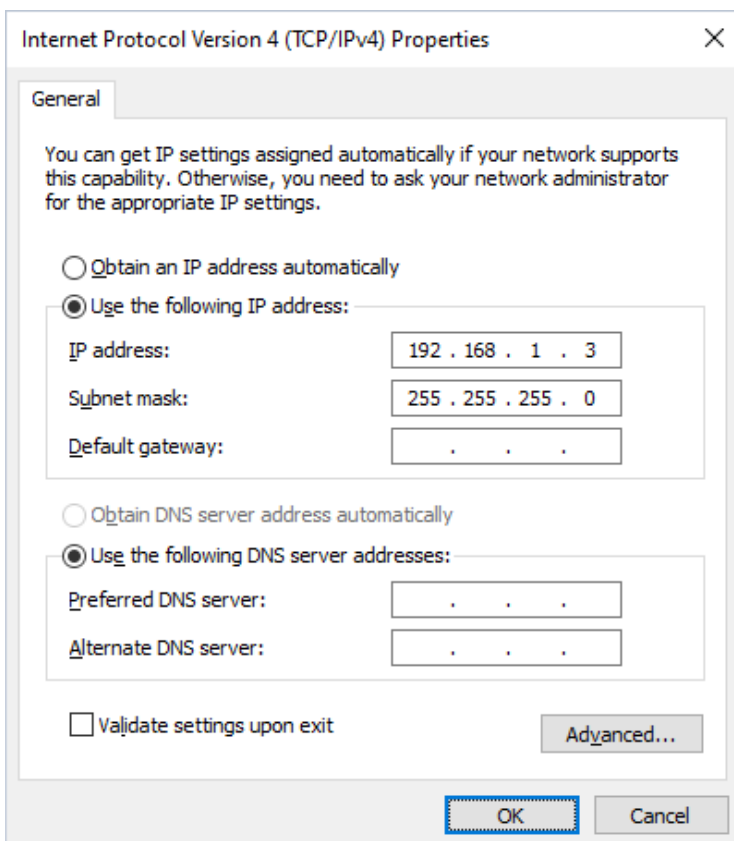
Select „Internet Protocol Version 4 (TCP/IPv4) and click on Properties.



Now you can chose between “Obtain an IP address automatically”.



Or set up a static IP address.

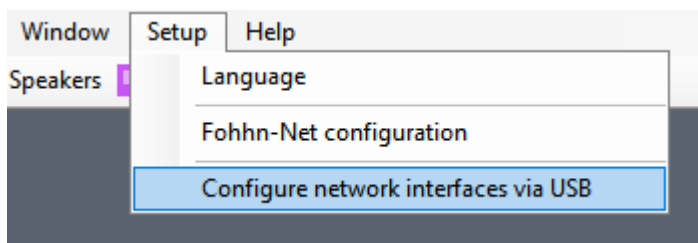


5.5 Security

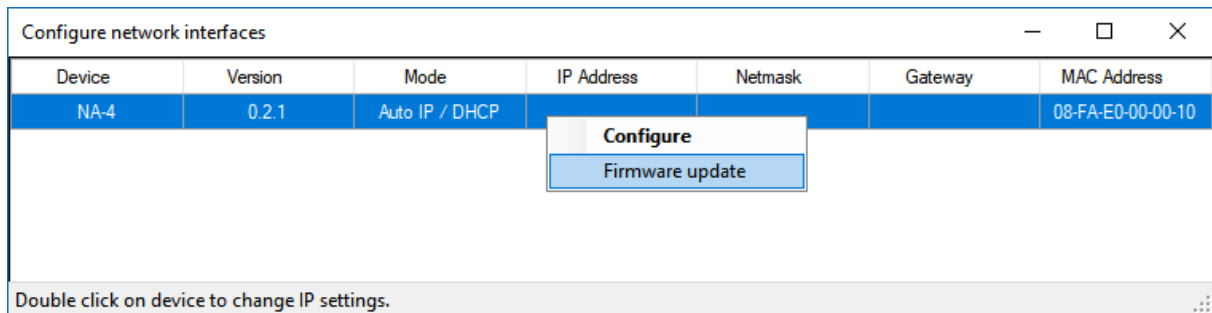
Make sure that the NA-4 is never reachable from public networks.

6. Firmware update

Connect the NA-4 via USB to a PC with Fohhn Audio Soft. Click on “Setup” -> “Configure network interfaces via USB”.



Next dialog shows connected NA-4 adapters.



Open the context menu and select “Firmware update”.

Note: Firmware update requires a connection to USB.

7. Media Control Integration

Fohhn® devices can be controlled via NA-4 adapter, using a simple text-based TCP protocol. The NA-4 listens for text commands on **TCP Port 8374**. Each command is terminated with **CRLF**; many systems send this automatically, but it must otherwise be stated through the addition of **\r\n** at the end. The NA-4 replies are also terminated with **CRLF**.

Commands always have the following format:

```
GET COMMAND ID (PARAMETER) <CR><LF>
```

```
SET COMMAND ID (PARAMETER) <CR><LF>
```

With GET commands, information is retrieved from the respective device; with SET commands, settings on the device are changed – the reply to SET commands is always **OK**. If the command is correct, but there is no reply from the device, this will be shown as a **TIMEOUT** response. The reply for an invalid command is **INVALID REQUEST** and for incorrect parameters it is **INVALID PARAMETERS**.

Always make sure that the correct **Fohhn-Net ID** has been entered in the **ID** field, otherwise the device will ignore the command and the NA-4 will respond with **TIMEOUT**. You can determine the (Fohhn-Net) ID using **Fohhn Audio Soft**.

Control via the TCP text protocol only works if **Fohhn Audio Soft** is not communicating via the NA-4 at the same time. Close Fohhn Audio Soft, or take it offline so that control via the text protocol is possible.

Numerical values are always written without their decimal separators and without the unit descriptor:

So **-32.5 dB** will become **-325** and **+5.0 dB** will become **50**.

For output channels, the channel number can simply be used: **1** for Output Channel 1, **2** for Output Channel 2 etc. If input channels are to be addressed, the number of output channels must always be added up. For example, on a device with one output channel, the first input channel will have the channel number **2** and the second input channel will have the channel number **3**. On a device with four output- and four input channels, the first input channel will have the channel number **5**. (The Routing command is an exception: Here, input channels for the input parameters always start from **1**.) The DSP functions on input channels are not available on all devices. See also the section at the end of this document, which describes particularities relating to some older devices.

Using the Fohhn-Net TCP text protocol, commands for *Info*, *Preset*, *Volume*, *Mute*, *Routing*, *Standby* and *Status* are all available. These are explained in detail on the following pages.

7.1 Device Information

7.1.1 Device information retrieval (identification and firmware version)

```
GET INFO ID
```

Reply: IDENTIFICATION VERSION

Example, to retrieve info from the device with ID 1:

GET INFO 1

Reply (Example for Linea Focus DLI-130):

0D20 3.0.5

Example, to retrieve info from the device with ID 2:

GET INFO 2

Reply (Example for Linea Focus DLI-130):

0D20 3.0.5

The GET INFO command is suitable as a test for whether the device responds.

Note: The firmware version of the Fohhn device is shown here – not that of the NA-4!

7.2 Presets

7.2.1 Loading presets

SET PRESET *ID NR*

Reply: **OK**

Example, to load Preset 20 on the device with ID 1:

SET PRESET 1 20

Reply: **OK**

7.2.2 Calling up current preset numbers and preset names

GET PRESET *ID*

Reply: **NR NAME**

Example, to call up a currently loaded preset on the device with ID 1:

GET PRESET 1

Reply:

020 Preset Name

7.3 Volume

7.3.1 Setting absolute volume levels

SET VOL ID CHANNEL GAIN ON [INV]

Reply: **OK**

The last parameter [INV] is optional and must only be used if the signal on the channel should be inverted.

Example, to set the volume level on Channel 1 of the device with ID 1 to -20.5 dB:

SET VOL 1 1 -20.5 1

Example, to set the volume level on Channel 2 of the device with ID 1 to 3.0 dB:

SET VOL 1 2 3.0 1

Example, to set the volume level on Channel 1 of the device with ID 1 to -3 dB (Mute):

SET VOL 1 1 0 0

Example, to set the volume level on Channel 2 of the device with ID 1 to 3.0 dB and inverted:

SET VOL 1 2 3.0 1 1

7.3.2 Volume level readout

GET VOL ID CHANNEL

Reply: **GAIN ON INV**

Example, to obtain a readout of the volume level on Channel 1 of the device with ID 1:

GET VOL 1 1

Reply:

-205 1 0

Example, to obtain a readout of the volume level on Channel 2 of the device with ID 1:

GET VOL 1 2

Reply:

30 1 0

7.3.3 Relative adjustment of volume levels

SET RVOL ID CHANNEL GAIN

Reply: **OK**

Example, to reduce the volume level by -3.0 dB on Channel 1 of the device with ID 1:

SET RVOL 1 1 -30

Example, to raise the volume level by +1.5 dB on Channel 2 of the device with ID 1:

SET RVOL 1 2 15

7.4 Channels

7.4.1 Channel activation / muting

SET MUTE ID CHANNEL ON

Reply: **OK**

Example, to mute Channel 2 on the device with ID 1:

SET MUTE 1 2 0

Example, to reactivate Channel 2 on the device with ID 1:

SET MUTE 1 2 1

7.4.2 Mute status readout

GET MUTE ID CHANNEL

Reply: **ON**

Example, to obtain a readout from Channel 2 of the device with ID 1:

GET MUTE 1 2

Reply: **1** (if the channel is on)

Reply: **0** (if the channel is muted)

Note: The mute status is also displayed in the second parameter during readout of the volume level.

7.5 Routing

7.5.1 Change routing settings

SET ROUTING ID CHANNEL INPUT GAIN ON [INV]

Reply: **OK**

The last parameter [INV] is optional and must only be used if the signal on the channel should be inverted.

Example, to change the routing on the device with ID 1 from input channel 3 to output channel 2 with a Gain of -10.0 dB:

SET ROUTING 1 2 3 -100 1

Example, to mute the routing on the device with ID 1 from input channel 3 to input channel 2 with a Gain of -10.0 dB:

SET ROUTING 1 2 3 -100 0

7.5.2 Routing settings readout

GET ROUTING ID CHANNEL INPUT

Reply: **GAIN ON INV**

Example, to obtain a readout of the routing on the device with ID 1 from input channel 3 to output channel 2:

GET ROUTING 1 2 3

Reply:

-100 1 0

7.6 Standby

7.6.1 Putting devices in standby

SET STANDBY *ID ON*

Reply: **OK**

Example, to put the device with ID 1 in standby:

SET STANDBY 1 1

Example, to reactivate the device with ID 1:

SET STANDBY 1 0

7.6.2 Standby status readout

GET STANDBY *ID*

Reply: **ON**

Example, to obtain a standby status readout for the device with ID 1:

GET STANDBY 1

Reply: **1** (if the device is in standby)

Reply: **0** (if the device is active)

Note: Not all devices support standby status readout.

7.7 Status

7.7.1 Status readout

GET STAT *ID*

Reply: **F1 F2 F3 F4 F5 F6 F7 F8**

Example, to obtain a status readout for the device with ID 1:

GET STAT **1**

Reply: **0 1 0 0 0 0 0 0**

Note: Depending on the device, responses have to be evaluated differently. Unused flags should be ignored. 0 means "ok", 1 means an error.

Fohhn Devices	F1	F2	F3	F4	F5	F6	F7	F8
<i>DLI-130</i> <i>DLI-230</i> <i>DLI-330</i> <i>DLI-430</i>	<i>Fault</i>	<i>Audio (AES)</i>	<i>Pilot tone</i>					
<i>FV-100</i> <i>FV-200</i>	<i>Fault</i>	<i>Audio (AES)</i>						
<i>LFI-120</i> <i>LFI-220</i> <i>LFI-350</i> <i>LFI-450</i>	<i>Fault</i>	<i>Pilot tone</i>						
<i>FMI-100</i> <i>FMI-110</i> <i>FMI-400</i>	<i>Fault</i>	<i>Pilot tone</i>						
<i>D-2.750</i> <i>D-2.1500</i>	<i>Protect 1</i>	<i>Protect 2</i>						
<i>D-4.750</i> <i>D-4.1200</i>	<i>Protect 1</i>	<i>Protect 2</i>	<i>Protect 3</i>	<i>Protect 4</i>				
<i>DI-2.2000</i>	<i>Protect 1</i>	<i>Protect 2</i>						
<i>DI-4.1000</i>	<i>Protect 1</i>	<i>Protect 2</i>	<i>Protect 3</i>	<i>Protect 4</i>				

7.8 Troubleshooting

If the TCP communication is functioning normally but nothing is changing on the device, it may be locked. The NA-4 cannot recognise whether or not the device is locked. Check the settings with the help of **Fohhn Audio Soft**.

Fohhn Audio Soft cannot communicate via the NA-4 module at the same time! Close Fohhn Audio Soft or take it offline before sending any commands via the TCP interface.

Further possible sources of error:

- Has the correct **Fohhn-Net ID** been specified?
- Has the correct **IP Address** or the right **Host name** been specified?
- Has the correct **TCP Port 8374** been specified?
- Is the text command correctly terminated with **CRLF (\r\n)**?
- Are all command parameters correct?
- Are all parameters within valid ranges?
- Did you wait for a reply to arrive before sending the next request via TCP? The system can only process one request at a time: Wait until you have a reply before sending a new request.

7.9 Specific channel addressing: D-4.750, D-4.1200, FC-8 and FC-9

If one of these Fohhn devices is controlled via an **NA-4**, please note that different channel addressing is involved. These devices only have DSP functions on their output channels; each output channel is addressed using a specific value.

Output channel 1	1
Output channel 2	2
Output channel 3	4
Output channel 4	8
Output channel 5	16
Output channel 6	32

8. Technical data

PoE power supply	IEEE 802.3af, Class 1 3,84W
optional power supply	USB-C, 5V, 500mA
user configuration	USB-C, USB 2.0 Full Speed
Ethernet interface	100Base-TX
Fohhn-Net Interface	RJ-45, RS-485, galvanically isolated
Network configuration	Link-Local, DHCP, static address
Protocols	IPv4, Fohhn-Net over UDP, TCP Text Protocol
Dimensions (B x H x T)	210 x 44 x 172 mm

8.1 NA-4 IP information

Port	Protocol	Usage
427	UDP	Auto Discovery / Fohhn Audio Soft
2101	UDP	Fohhn-Net / Fohhn Audio Soft
8374	TCP	TCP Text Protocol / Media Control

Auto Discovery uses Service Location Protocol / multicast adress 224.0.1.22.

9. Service and Repair

Servicing and/or repairs should only be undertaken by suitably qualified, **FOHHN**-trained personnel.

Do not carry out any servicing or any repairs to the device beyond what is listed under “**Maintenance Measures**” (below) or advised in the “**Cleaning Fan Filter Foam Without Tools**” section.

For details of a **FOHHN**® Service provider in your area, please contact us at the address on the previous page.

Keep the packaging for your device so that, in the event of any problem occurring, it can be returned in its original packaging. This will minimize the risk of any potential damage during transportation.

9.1 Maintenance Measures

- To clean your **FOHHN** amplifiers, only use a dry or slightly damp, well wrung out cloth.
- Do not use any aggressive cleaning agents, waxes or solvents (such as cleansing alcohol or paint thinner), as these could spoil the appearance of the device and/or affect the paintwork on the enclosure.
- There are no user-serviceable parts within the device.
- The device must only be repaired by suitably qualified personnel.

10. Appendix

10.1 Environmental Information

Please note that this product must not be disposed of in general household waste. It must be taken to a disposal centre for electrical/electronic waste. Please also note any applicable national or local regulations. Further information on these and on appropriate waste disposal facilities can be obtained from your city/town council as well as from your local distribution partner.

10.2 CE Marking and Declaration of Conformity

This DSP amplifier complies with the currently applicable conditions of EMC law and, as such, carries the CE marking.



The relevant Declarations of Conformity are available on request from

Fohhn Audio AG, 72622 Nürtingen

10.3 Trademarks

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In the absence of an explicitly labelled registered trademark in this manual, it cannot be necessarily concluded that a name is free of third-party rights.

10.4 Open Source

NA-4 Firmware uses open source software. You can find Information about software licences at <https://www.fohhn.net/software-licensing/>.

10.5 Protection Classes and Protection Types



Protection Class I: All the equipment's electrical conductive housing components are connected with low resistance to the protective earth conductor of the installation.

IP21

The device's protection type (protection against solid objects with ≥ 12.5 mm in diameter, protection against manual contact and protection against dripping water)

10.6 Disclaimer and Copyright

Disclaimer

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10.7 Contact Address

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