



User Manual

Media

# Hybrid-1



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

# Contents

- 1. Introduction and General instructions ..... 3
  - 1.1 Important safety instructions..... 3
    - 1.1.1 Definition of Terms..... 3
    - 1.1.2 General Safety Instructions ..... 4
    - 1.1.3 Electrical Safety Instructions ..... 4
    - 1.1.5 Connections and Cabeling ..... 6
  - 1.2 Operating conditions ..... 6
    - 1.2.1 Information on abnormal operation ..... 7
- 2. The Product ..... 8
  - 2.1 Product Description..... 8
  - 2.2. Scope of Supply ..... 8
  - 2.3 Unpacking..... 8
- 3. Setting Up ..... 9
  - 3.1 Connections and Status Display ..... 9
  - 3.2 Configuration and Monitoring..... 10
    - 3.2.1 System Requirements..... 11
    - 3.2.2 Download and Installation of Fohhn Audio Soft ..... 11
    - 3.2.3 Speaker and User Presets..... 12
  - 3.3 Additional Functions..... 12
    - 3.3.1 Auto Power Save ..... 12
- 4. Technical Specifications..... 13
  - 4.1 Hybrid-1 active ..... 13
  - 4.2 Hybrid-1 passive ..... 15
- 5. Service and Repair ..... 16
  - 5.1 Maintenance Measures..... 16
- 6. Appendix..... 17
  - 6.1 Environmental Information ..... 17
  - 6.2 CE Marking and Declaration of Conformity..... 17
  - 6.3 Trademarks..... 17
  - 6.4 Protection Classes and Protection Types ..... 17
  - 6.5 Disclaimer and Copyright ..... 18
  - 6.6 Contact Address ..... 18

# 1. Introduction and General instructions

Congratulations on the purchase of your **Fohhn Hybrid-1** loudspeaker system from our Media series. It has been developed to meet high demands on sound quality, speech intelligibility and reliability.

All DSP functions of the integrated Fohhn system amplifier can be controlled using a single software, **Fohhn Audio Soft**. It can be downloaded free of charge from **www.Fohhn.com**.

**In order to take full advantage of the device and to ensure trouble-free operation, please read these operating instructions carefully before commissioning and keep them in a safe place!**

## 1.1 Important safety instructions

Read the following safety regulations completely before operating the device. Always keep these instructions in the vicinity of the equipment. Reading the operating instructions does not replace the knowledge and observance of all local safety regulations and provisions valid at the time or the observance of safe working methods on site.

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

### 1.1.1 Definition of Terms

#### **Danger**

The signal word denotes a hazard with a high degree of risk which, if not avoided, will result in death or serious injury.

#### **Warning**

The signal word denotes a hazard with a medium degree of risk which, if not avoided, will result in death or serious injury.

#### **Caution**

The signal word indicates a hazard with a low degree of risk which, if not avoided, may result in minor or moderate injury.

## 1.1.2 General Safety Instructions

### Danger:

To avoid danger to life and limb, ensure that all persons involved in the installation, operation or dismantling of such a system have read and understood these operating instructions.

Nevertheless, the information presented here is intended as accompanying advice and does not affect the user's responsibility for the safe operation of a **Fohhn** system on site.

### Warning:

To avoid injury

- ⚠ this equipment must be stored, installed and operated out of the reach of children.

To prevent injury, this equipment must be taken out of service, tagged, and secured against accidental operation if it

- ⚠ shows visible signs of damage,
- ⚠ is suspected of containing loose parts,
- ⚠ no longer operates correctly,
- ⚠ has been exposed to unfavorable conditions for a long time (e.g. wetness)
- ⚠ has been exposed to bad transport conditions (e.g. unsuitable packaging or humidity).

**If necessary, please contact your Fohhn dealer and the transport company immediately. You will find the contact details in the appendix to these operating instructions**

## 1.1.3 Electrical Safety Instructions

Devices with integrated Fohhn power amplifiers are devices of protection class 1. They are built and tested in accordance with the VDE protective measures for electronic devices and leave our factory in perfect condition with regard to safety. The devices comply with all currently valid standards of the EMVG law: The CE mark affixed to the device confirms this.

**The relevant standards can be found in the appendix to these operating instructions!**

### Warning:

To minimize the risk of electric shock,

- ⚠ The protective contact connection of the mains plug must never be disconnected and the plug must never be taped off.
- ⚠ The device may only be connected to protective contact sockets that have been checked by a specialist.
- ⚠ The device housing must never be opened. The device does not contain any components that can be repaired by the user. In the unlikely event of a defect, please contact qualified service personnel and/or the dealer from whom you purchased your system!

Also make sure that the local mains voltage matches the supply voltage indicated on the device.

To minimize the risk of electric shock or fire,

- ⚠ the device must not be exposed to moisture.
- ⚠ do not place objects filled with liquids (e.g. beverage cups) on the unit.
- ⚠ Ventilation openings must not be covered with objects (e.g. rain protection foils).
- ⚠ The device must not be exposed to excessive heat, sunshine, fire or the like.
- ⚠ no open fire sources (e.g. pyrotechnics) may be placed on the device.

**Caution:**

To avoid damage to the device

- ⚠ do not leave the power cord plugged in when the unit is not in use for a long period of time.  
(Unplug the power cord to completely disconnect the device from the mains!)

### **1.1.4 Acoustic Safety Instructions**

**Fohhn** speaker systems can generate very high sound pressure levels, which can cause irreparable hearing damage.

**Warning:**

To avoid hearing damage

- ⚠ never stand in the immediate vicinity (1 meter or less) of an operational device.

To prevent hearing damage and damage to the device, avoid during operation:

- ⚠ acoustic feedback
- ⚠ sustained distorted signals of high power
- ⚠ impulse noises that occur when a device in the system is switched on or off, connected or disconnected.

## 1.1.5 Connections and Cabeling

Please observe the following instructions for wiring your systems:

- ⚠ Make sure that your cables function properly and use only cables with a sufficient cross-section.
- ⚠ Use only cable and connector materials that meet professional standards.
- ⚠ Use only properly shielded cables and connectors for Audio and data connections.
- ⚠ Only use power cables with intact protective contact connections and ensure that the device's power plug is accessible at all times so that the device can be quickly disconnected from the mains in the event of a malfunction.
- ⚠ Lay and fasten the cables in such a way that they are not damaged by tools or pinched by the device or a wall bracket and thus damaged.
- ⚠ Secure all laid cables against mechanical damage or tensile forces that occur.
- ⚠ Avoid too high tightening torques for the screws of the connection terminals!

**The wiring of loudspeakers should only be carried out by qualified personnel!**

## 1.2 Operating conditions

Please observe the following notes when operating your system:

- ⚠ The permissible ambient temperature of the device during operation ranges from 0 °C to +40 °C.
- ⚠ The device is intended for operation in a dry environment with normal dust and moisture content of the air.
- ⚠ If dew has formed on the device or its rear panel during transport or storage, allow the device to acclimatize for approx. 2 hours before operating it.
- ⚠ Never expose the device to aggressive chemical liquids or vapors.
- ⚠ Always ensure that heat is dissipated via the outer surface of the housing.
- ⚠ Always ensure that the device is well ventilated. To ensure sufficient cooling, do not cover the device with cloths. Heating of the housing by sunlight or strong spotlights should be avoided.
- ⚠ Never expose the units to major vibrations.

### 1.2.1 Information on abnormal operation

If the permissible operating temperature becomes too high (greater than 75 °C), the device is switched off. As soon as the temperature returns to the normal operating range, the unit is automatically switched on again.

The temperature of the **Fohhn** system is displayed in **Fohhn Audio Soft**. Shutdown occurs when the product is exposed to direct sunlight or very high ambient temperatures. Reliable operation is only guaranteed if the permissible ambient temperatures are observed.

The device should be checked by a service authorized by Fohhn Audio AG as soon as

- ⚠ the network cable or the mains socket is damaged,
- ⚠ a foreign object or liquid has entered the interior of the unit,
- ⚠ the unit has been exposed to rain,
- ⚠ the unit does not operate normally or shows marked changes in performance,
- ⚠ the device is damaged (e.g. after a fall).

### 1.3 Storage and transport

Please observe the following instructions:

- ⚠ The transport may only take place in the original packaging.
- ⚠ Store the device in a dry environment at a uniform ambient temperature to avoid condensation.
- ⚠ The permissible ambient temperature of the device during storage ranges from -10 °C to +70 °C.
- ⚠ During transport and storage, condensation may form and settle on the surface of the device due to temperature fluctuations. Therefore, check the surface for any moisture before commissioning. In this case, allow the unpacked devices to acclimatize to the ambient temperature for at least two hours.

## 2. The Product

### 2.1 Product Description

**Hybrid-1** is an active loudspeaker system with a 4" broadband high-performance chassis and coaxial Fohhn diffraction waveguide for the treble and bass-reflex system. The integrated **Fohhn DSP** makes it possible to make and save custom sound adjustments and a variety of additional settings. **Fohhn Audio Soft** is used for configuration as well as remote control and monitoring. The current version of the software can be downloaded for free at [www.Fohhn.com](http://www.Fohhn.com).

The device is equipped with a robust aluminium enclosure and is shipped with a metal bracket for mounting on a wall or ceiling.

The integrated power electronics provide 2 x 70 W RMS, with one channel available entirely for an additional passive variant.

### 2.2. Scope of Supply

Prior to shipping, every product is tested in line with the highest quality and safety standards. Please carefully check your product for shipping damage and, if any damage is apparent, immediately inform your retailer and the shipping company. Please verify that the package contains all of the components that belong to the device.

Your **Fohhn** system ships with the following items:

- 1 × **Fohhn Hybrid-1 loudspeaker system from the Media series**
- 1 × **power supply cable with IEC connection socket**
- 2 × **3-pin Phoenix connector for input clamp**
- 1 × **2-pin Phoenix connector for speaker output**
- 1 × **WS-4 metal bracket for mounting**
- 1 × **instructions (or available online at [www.Fohhn.com](http://www.Fohhn.com))**

**If anything is missing, please get in touch with your Fohhn retailer!**

### 2.3 Unpacking

We recommend the following approach to unpacking your system:

1. Open the packaging and remove the product.
2. Check the product for visible shipping damage. If the product shows signs of damage, please report this to the shipping company without delay. Only the receiver (you) can make a complaint for shipping damage. Make sure to keep the packaging for examination by the shipping company.
3. In general, it is best to keep the packaging. Ship the product in suitable outer packaging or an appropriate carry bag.



## 3. Setting Up

### 3.1 Connections and Status Display

**Hybrid-1 active** has the following connections and displays on the rear of the enclosure:



Cables should only be connected when the system is shut off.

#### (1) Status LEDs

##### **ready**

This LED illuminates blue when the amplifier is ready to be used.

##### **protect**

This LED illuminates red when there is an error during operation.

##### **USB config**

This LED illuminates blue when the amplifier is connected to a control computer via the USB-C port. The LED flashes turquoise/purple when communicating with the control computer.

#### (2) USB-C config port

**Hybrid-1** is equipped with a USB-C port on the rear of the enclosure. This allows you to configure the device directly using a personal computer and the **Fohhn Audio Soft** control software without requiring a **Fohhn** network adapter.

#### (3) Input analog CH 1/2

Analogue Audio signals are fed into the cinch connectors or the parallel Phoenix clamps. The two input channels 1/2 are summed by default and reproduced simultaneously by the loudspeaker system. It is also possible to use only one of the two input channels. If you are using two loudspeaker systems (an additional Hybrid-1 passive), both input channels will also be reproduced by both loudspeakers in mono. For a stereo application, you can load the "Stereo" user preset in Fohhn Audio Soft.

#### (4) Output to passive speaker (powered)

This clamp connection can be used to power a second, passive **Hybrid-1**.

#### (5) Mains

This is where you connect to mains power using an IEC cable (C14).

#### (6) Cable strain relief

You can reduce the tension on the cable by using a cable tie or other connector on this metal tab.

**Hybrid-1** passive has the following connections and displays on the rear of the enclosure:



Cables should only be connected when the system is shut off.

#### (1) Input from amplifier

This clamping connection allows you to supply the passive **Hybrid-1**.

### 3.2 Configuration and Monitoring

Once you have made the relevant connections described in **3.1**, **Hybrid-1** is ready to use. However, if you would like to change configurations such as routing, EQ or levels, or if you would like to load a new preset or monitor **Hybrid-1** using software, connect it via the USB-C port to a control computer. To do this, you will need a Windows computer with the installed control software, **Fohhn Audio Soft** (**free download at [www.Fohhn.com](http://www.Fohhn.com)**).

### 3.2.1 System Requirements

To use **Fohhn Audio Soft**, you need a standard computer with the following minimum system requirements:

- **Computer and processor:** x86 or x64 multi-core processor
- **Working memory (RAM):** 4 gigabytes (GB) RAM
- **Hard drive:** 40 megabytes (MB) of storage space
- **Display:** Minimum resolution of 1366 x 768
- **Operating system:** Microsoft Windows 7 SP1 or Windows 10
- **.NET version:** Microsoft .NET Framework 4.6.1
- **Additional requirements:** all operating system updates installed

The separate operating instructions for **Fohhn Audio Soft** contains additional information. You can download the manual on the Fohhn website at [www.Fohhn.com](http://www.Fohhn.com)

### 3.2.2 Download and Installation of Fohhn Audio Soft

**Fohhn Audio Soft** is directly compatible with all active DSP systems from **Fohhn**. As such, you do not need a version of the software that is specially configured for Hybrid-1, since the same software and user interface is used for all Fohhn products.

You can download the latest version of **Fohhn Audio Soft** for free at [www.Fohhn.com](http://www.Fohhn.com).

Follow the instructions below to install **Fohhn Audio Soft** on your computer:

1. Download the current version of **Fohhn Audio Soft** on your computer.
2. Find the file *Fohhn\_Audio\_Soft\_X.X.X\_Setup.exe* on your computer (X.X.X stands for the current version number).
3. Launch the installer by double-clicking on the file and follow the instructions on the screen.
4. Click on *Install* to install the program on your computer. Make sure to confirm the *User account control* dialogue if it is displayed.
5. To complete the installation, click on *Finish*.

The program is ready to use directly after being installed and can be opened either using the desktop icon or by selecting *Start > All Programs > Fohhn Audio AG > Fohhn Audio Soft*.

### 3.2.3 Speaker and User Presets

You can choose from various presets in **Fohhn Audio Soft** to adjust the sound of the loudspeaker system to your room and application. Preset 1 is loaded by default.

#### Speaker presets:

- Preset 1 (standard)  
Optimised for use when mounted on a wall or in the corner of a room
- Preset 2 (bass -)  
Lower bass level
- Preset 3 (bass - -)  
Even lower bass level
- Preset 4 (background)  
Music preset for background noise

#### User presets:

- Preset 1  
Factory reset
- Preset 2  
Mute
- Preset 3  
Mono
- Preset 4  
Stereo

## 3.3 Additional Functions

### 3.3.1 Auto Power Save

The integrated **Fohhn** system amplifier on the **Hybrid-1** has a mode that can be configured to save power and extend the device's service life. When there is no Audio signal, the amplifier turns on a power-saving mode and is ready for use as soon as an Audio signal is present.

The time it takes for the device to enter the power-saving mode can be set as desired between 1 second and 12 hours. It can also be completely deactivated.

To set the *Auto Power Save* mode in **Fohhn Audio Soft**:

1. Select your product in the *Device List* view and display the context menu by right-clicking.
2. Select *Settings*. The *Advanced device settings* dialogue will appear.
3. Select your product and right-click to open an additional context menu.
4. Here, select *Set auto power save*. The *Set auto power save time* window will be displayed. (Note that you can also open this window using the button with the same name in the *Advanced device settings* dialogue in the lower left).
5. Select the desired shutoff time from the dropdown list and confirm your selection by clicking *OK*.

**Note: A shutoff time that is too short can lead to inaccuracies during the acoustic calibration of your device. We recommend a shutoff time of one hour or longer while you are carrying out your calibrations.**

## 4. Technical Specifications

### 4.1 Hybrid-1 active

#### Electroacoustic features

Acoustic design	Active loudspeaker, full range, bass reflex
Components	4" high performance chassis with coaxial Fohhn diffraction waveguide for tweeter
Maximum sound pressure	102 dB
Nominal dispersion (h × v)	100° × 100°
Frequency range	46 Hz – 20 kHz

#### Physical features

Enclosure	Aluminum enclosure, powder coated
Protective grille	ball impact resistant steel grid, powder coated
Mounting points	T-slot, continuous on rear side
Connections	Clamp
Stock colors	black or white powder coated
Front design	Front grille in enclosure color
Dimensions (W x H x D)	approx. 133 × 590 × 128 mm
Weight	4.1 kg

#### Electronic features

Amplifier technology	Class D - Pure Path Digital PWM
Amplifier power	2 × 70 W (1 kHz, THD+N < 1%)
Frequency response	20 Hz – 20 kHz
Signal to noise ratio	> 110 dB (A-weighted)
System latency	1.2 ms
THD+N	0.02 % (1 kHz, 8 ohms, 3 dB below clipping level)

Dynamic range	> 130 dB
Auto Power Save	Time adjustable 1 s to 12 h, or always active
Protective circuit	over voltage protection, over current protection, over temperature protection, short-circuit protection, DC protection, power on delay, soft start and inrush current limit

### **Controller**

FIR filter	yes
EQ	10-band parametric EQ, gain, +/-12 dB, frequency 10 – 20 kHz, Q 0.1 – 100
Selective 3-band limiting	Bass / Middle / High
Limiter / Compressor	yes
Noise Gate	yes
Delay	2 × 0 – 145 ms (0 – 50 m)
X-Over	yes
System latency	1.2 ms
Filter technology	80-bit double precision

### **Connections and controls**

Inputs	2 × analog (symmetrical with clamp); asymmetrical with cinch
Mains connection	1 × IEC connector
Outputs	1 × 2-pin terminal (powered output for additional passive speaker for stereo operation)
USB Config	1 × USB-C socket

### **Optional equipment**

Special color	RAL Classic / NCS / Pantone on request
---------------	--

## 4.2 Hybrid-1 passive

### Electroacoustic features

Acoustic design	passive loudspeaker, full range, bass reflex
Components	4" high performance chassis with coaxial Fohhn diffraction waveguide for tweeter
Maximum sound pressure	102 dB
Nominal dispersion (h × v)	100° × 100°
Frequency range	46 Hz – 20 kHz

### Physical features

Enclosure	Aluminum enclosure, powder coated
Protective grille	ball impact resistant steel grid, powder coated
Mounting points	T-slot, continuous on rear side
Connections	Clamp
Stock colors	black or white powder coated
Front design	Front grille in enclosure color
Dimensions (W x H x D)	approx. 133 × 590 × 128 mm
Weight	3.7 kg

### Connections and controls

Inputs	1 × 2-pin terminal, input for amplified signal
--------	--

### Optional equipment

Special color	RAL Classic / NCS / Pantone on request
---------------	--

## 5. 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.

### 5.1 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.



## 6. Appendix

### 6.1 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.

### 6.2 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

### 6.3 Trademarks

All trademarks and brand names referred to in this manual, which may be protected by third parties, are subject to the provisions of trademark law and the title rights of their respective owners. All trademarks, trade names or company names appearing here are, or may be, trademarks or registered trademarks of their respective owners. All rights are reserved, with the exception of those specifically granted.

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.

### 6.4 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  $\geq 12.5$  mm in diameter, protection against manual contact and protection against dripping water)

## 6.5 Disclaimer and Copyright

### *Disclaimer*

The contents of this user manual have been created with great care. However, **Fohhn Audio AG** cannot guarantee that the information therein (images, text and other representations) is always complete, correct and current. **Fohhn Audio AG** therefore reserves the right to make changes or additions to the given information at any time. Neither Fohhn Audio AG (as a public limited company), nor its Executive Board or employees take any responsibility for direct or indirect damage, including loss of profit, which arises as a result of, or in connection with the information in this manual.

### *Copyright*

This manual as a whole, including its contents and works is, as such, subject to German copyright law. The reproduction, editing, distribution and any other kind of use outside the limits of the copyright requires the written consent of **Fohhn Audio AG**.

## 6.6 Contact Address

### **Fohhn Audio AG**

Großer Forst 15  
72622 Nürtingen  
Germany

Tel. +49 7022 93323-0

Fax +49 7022 93324-0

[www.fohhn.com](http://www.fohhn.com)

[info@fohhn.com](mailto:info@fohhn.com)

### **Fohhn on Social Media**

