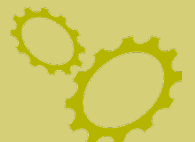
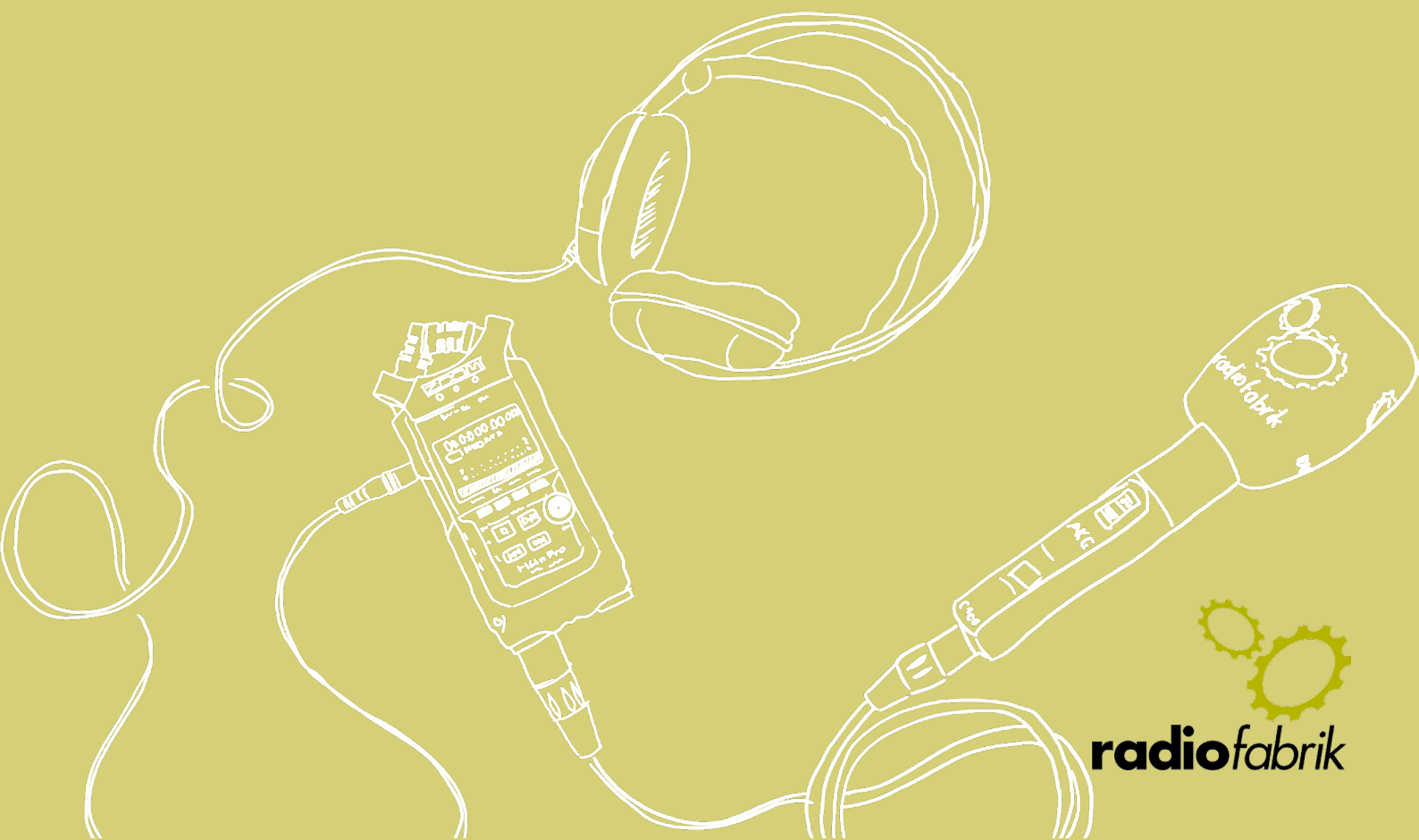


# Digital Recorders

as shown by the example of H4n and H4N Pro



**radiofabrik**

Digital Recorders  
2022

## IMPRESSUM

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# DIGITAL RECORDERS

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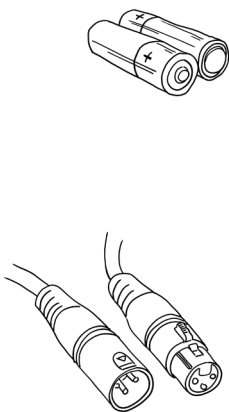


Mobile recorders can be used for recording audio without a studio and creating radio shows from lots of different locations. H4n and H4n Pro are both affordable devices with a wide array of functions.



In this manual, we will use these devices as examples to describe the use of digital audio recorders. These basic functions are the same or at least very similar when dealing with other recorders.

## STEP 1: ASSEMBLING THE DEVICE

Each set of equipment for making an audio recording consists of:  
1x ZoomH4n, 1x Handheld Microphone AKGC1000(S), 1x Pop Screen,  
1x Headphones, 1x XLR cable, 1x USB cord, 2x AA-batteries (rechargeable)



This is how you assemble the device:

1. Put the **batteries** into the back of the recorder (leave the piece of string under the batteries – like that you can easily remove the batteries by pulling the string).
2. Plug in the **headphones** on the left side of the device where you'll find the symbol for headphones 
3. Plug the **XLR cable** into the left plug on the underside of the device and
4. plug the other end of the cable into the **handheld microphone**.
5. Slide the **"On/Off" switch of the microphone** upwards into the "On" position. 



## STEP 2: TURNING ON THE DEVICE AND FORMATTING THE SD-CARD

All the way down on the left side of the device you will find the **“On/Off” switch**. Press it for 1-2 seconds until the display lights up.

If this is your first time turning on the recorder, we would advise you to **format the SD-Card** in order to delete old recordings made by the people who used it before you.



On the right side of the device you'll find the **“Menu” button**. Press this and use the small wheel above it to scroll through the list until you find the item **“SD-card”**.



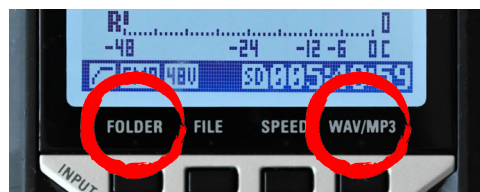
Press the wheel to confirm your selection. This will bring you to the next menu, where you'll choose the item **“format”**. Press the wheel again to confirm and once more to answer **“Yes”** to the Pop-Up asking **“Are you sure?”**. Now the entire memory of the SD-Card has been wiped.



**Attention!** By doing this you will **delete all files** from the SD-Card! Only do this after you've checked whether there's nothing on there that you still need and haven't saved yet!

## STEP 3: CHECKING THE SETTINGS

**Storage Location:** Press the button on the left side under the display marked **“Folder”**. Select **“Folder 1”** by scrolling with the small wheel on the right side of the device and confirm your selection by pressing the wheel.



**MP3s:** small files; if they are processed a lot (e.g. EQ) the lower quality, as compared to WAV, will get more noticeable

**WAV:** very big files in high quality

**Audio format:** Press the button all the way on the right under the display marked **“WAV/MP3”**.

Choose either MP3 320kbps for small audio files of good quality or WAV44.1kHz/24bit for an uncompressed audio file of excellent quality.

## STEP 4: CHOOSING YOUR MIC

Before each recording, you need to choose the right microphone (**Input**).

**Internal mic:** records in a (semi) sphere and thus is perfect for recording **ambience**. All sounds at the place of recording will be audible on the recording.

**Handheld mic:** is directed, so especially suitable for recording **voices** or specific sounds. Surrounding sounds are more quiet.



If the uppermost button (**Mic**) is activated (you'll know because the button emits a red light), the **integrated mic** at the top of the recorder is on.



If the two buttons below (**1/2**) are glowing red, the **handheld mic** is active.

## STEP 5: VOLUME ON HEADPHONES AND RECORDING

You can change the **sound volume** on your **headphones** on the left side



of the recorder (under the headphone jack). Use the **“Vol +/-”** buttons to adjust the volume.

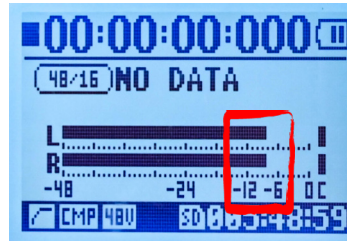


The **volume of the recording** is not related to the volume on the headphones and has to be adjusted separately. The level of the recording shows you how loud the recording actually is. This is crucial for every recording!



You can adjust this level with the buttons marked "Rec Level +/-" located on the right side of the device.

The spoken word should register between **-12dB and -6dB**. Sound level and dB are visible on the display.



**Important:** Check the sound level before every recording! If it's clipping ("Input" buttons are flashing red), decrease the recording volume.

## STEP 6: RECORDING

The **recording** will start as soon as you press the "Record" button on the front of the device 2 times. You'll know that it has started if the "Record" button emits red light and the timer on the display is running. At the same time you'll also see the name of the current file on the display.

To **pause** the recording, press the "Pause/Play" button to the left of the "Record" button. The "Record" button will flash to show that the recording is paused. Pressing the "Pause/Play" button again continues the recording. Pressing the "Stop" button ends the recording and **saves** it as either a WAV or a MP3 file.



**Attention:** If the "Rec" button is flashing, this means the device is paused and not recording!

**Tip:** Remember the name of the recording so you can find it more easily later.

To capture voices as well as possible and at the same time have as little background noise as possible, the **handheld mic** should be held about a **fist's length apart from the mouth**.

To avoid cable noises when moving the mic, hold the **mic cable** in a **loose loop** (see picture for better illustration).



**Attention:** Press the "Stop" button after each recording!



This is the only way to save the file onto the device! If the device is switched off during recording or in pause mode, the current recording will not be saved!

**Please note!** Wearing rings can also lead to unpleasant noises when you accidentally tap on the mic with them.



There are also some handy tricks for the **positioning** of interviewers and interviewees: When positioning people, make sure that any **interfering sources of noise** (like roads, fridges, computers...) are off to the **side**. This way, both people can talk into the mic and the background noise from the side will be toned down by the handheld mic.

Always wear **headphones** while recording, so you can immediately **identify interfering noises** and, if needs be, change position or room.



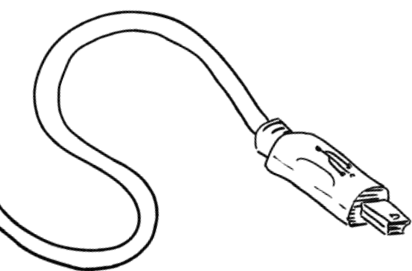
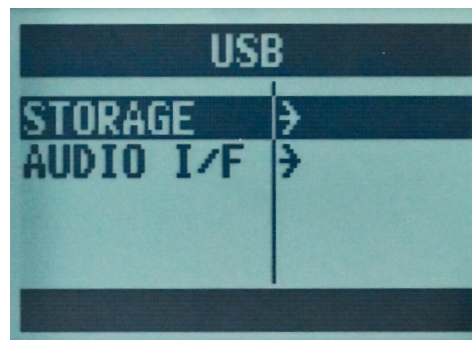
**Attention:** Always use the USB cord to transfer your files. Even though it is also possible to transfer them directly from the SD-Card, the card will wear out much faster like that. The SD-Card should only be taken out of the recorder and put back in again, if there is absolutely no other option.



## STEP 7: TRANSFERRING FILES

To be able to transfer your recordings to a computer, you'll have to switch off your recorder. When you connect it to the computer with a **USB cord**, the display switches on automatically. Now you can choose between the options "**Storage**" and "Audio I/F". Select and confirm "**Storage**" using the little menu wheel.

Now the recorder is connected to the computer.



The File Explorer/Finder should open automatically and show you which files are on the recorder. Choose the "**STEREO**" Folder and then, in the next step, "**FOLDER1**". Copy all audio files onto your computer. Don't be alarmed by the dates and times. These are always wrong because for them to be right, you would have to put them in manually before recording.

Now your files are ready to be edited with an audio editing program.



## TROUBLESHOOTING

### The device won't switch on?

Are the **batteries** in? The right way around? Have they been charged?

### You can't press any buttons? All that the display shows is the icon of a lock?

That means that **key lock** is active. This happens when the "On/Off" switch is in the up position. Just slide it back down into the middle (neutral) position to unlock the device.

### You can't start recording? All that the display says is "SD-Card protected"?

In this case, you need to check the SD-Card. Turn off the device and take out the SD-Card. On its left side there's a little bit made from plastic that can be used to lock the card. If this bit is next to the writing saying "lock", carefully slide it upwards. Now put the card back into the recorder. Watch out that the piece of plastic doesn't slide back into the "lock" position!

### The "MP3/WAV" button under the display doesn't work?

This means that **stamina mode** (power saving mode) is on. You'll find the switch to change that under the lid of the battery case. Switch stamina mode to "Off" and turn the device off and on again to be able to use all the functions.

### You don't see the sound level move on the display when using the handheld mic and you can't hear anything?

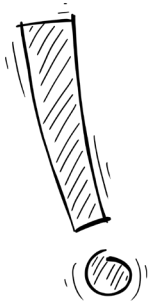
There are two possible explanations. Is the **handheld mic** switched on? It has its own "**On/Off**" **switch** that needs to be slid up to turn it on. The mic is on but it's still not working? That means the **phantom power** (mic gets its power from the device) is turned off. Press the "**Menu**" button. Select "**Input**", then "**Phantom**" and set it to **+48V**.

### The level only moves on one side? Your recording is only recorded on one side?

That means "**Mono-Mix**" is deactivated. Press the "**menu**" button and select "**Input**". Go to "**Mono-Mix**" and turn it to "**ON**".

## TIPS FOR RECORDING

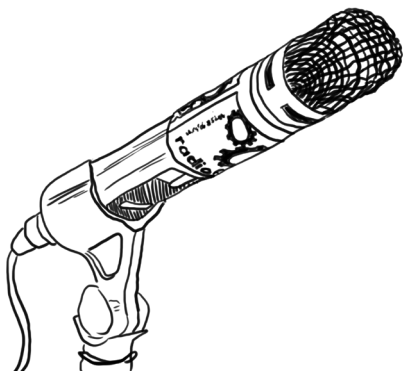
### Before the Recording



- **Double check** your recorder and the **functions** you're gonna need (Do you have everything? Extra batteries? Do you need a tripod?).
- Use **wind screen/pop screen** for indoor and outdoor mics
- **Outdoor** interview: avoid busy roads, construction sites, crowds of people and other unwanted **sources of noise**/don't record in their direction.
- **Indoor** interview: try to find a quiet spot and avoid background noises like computers, fridges, neon lights, coffee makers etc.
- Try to **help** your interviewee be less **nervous** and get over their **fear of microphones** in a pre-interview chat.
- Hold the mic the right way, tie a **loop** into the **cable** so it doesn't flap around.

### During the Recording

- Be sure to wear **headphones** for optimal control during recording (Remember, you are also the director!), this is the only way you'll be able to identify background noises.
- Double check if the device is actually **recording**.
- Always keep an eye on **equipment, sound quality and volume!** Too loud: clipping causes heavy distortions, making the audio useless. Too quiet: when you enhance the volume during the editing process, you'll get noise.
- Adapt the **use of the mic** to the situation and never hand it over to someone else.
- Maintain eye contact and nod etc, **don't react with sounds or comments** ("mmmmh", "yes of course", "really?").
- Each place has its own **ambience!** It can often be useful for the editing process to record 30 seconds of room sound before starting the interview.



## After the Recording

- **Save** the recording (by pressing “**Stop**”) and always turn off the mic.
- Before giving back the equipment: **save the files** to your own computer and delete them from the recorder!
- Never transfer the files directly from the recorder to the editing program. You could lose your files!
- Before **giving back** the equipment you borrowed, check whether everything is there (batteries etc.).

