Podcast recording kit guide

1. The case

The kit is intentionally tightly packed into a solid, water-resistant case. Inside the case you will find foam padding which makes components sit snug when they are carried around. This prevents excessive tumbling and protects some of the more sensitive pieces of equipment. This does not mean that it is water-proof or tumbling-resistant.

2. Zoom H4essential

This is the central unit of the kit. It is a 4-channel audio capture unit, recording at 32-bit float (recording quality) and sample rate of up to 96 kHz (recording resolution). The quality is set firmly at 32-bit and sample rate of 48 kHz is set at the WBPL as a widely recognized standard for professional audio (and video). Unit can simultaneously capture 4 channels of audio. Two of those four channels can be captured through the built-in microphones (top of the unit), and two are captured through external microphones.

Audio files (separate for each channel if selected so) are recorded as .wav files on the microSD card (slot on the right side of the unit).

The unit is powered by two AA batteries (slot in the back). However, it can also be powered through 5V USB-C slot (right side of the unit). Using one source of power does not exclude using the other source – you can use the USB power and batteries at the same time; the unit will give priority to USB supply one is connected. When USB is disconnected, the unit will seamlessly switch to batteries. Batteries may not last for a long time, monitor the power indicator in the top-right corner of the unit display.

If uncertain, familiarize yourself where the sockets for power supply, headphones, and microphones by watching the quick start video or referring to the support materials.

The unit is turned on by briefly (about two seconds) pulling the POWER/HOLD button down (the button is located on the right side of the unit).

When you push the POWER/HOLD button up, it will click into HOLD position, which means that pressing any other button on the unit will be disabled (useful when you want to prevent accidental press of buttons – e.g. recording while walking, running or just griping the unit tightly).

There are several buttons and areas that you need to be especially aware of on the unit when setting up your recording:

- THREE BLUE BUTTONS marked “1”, “MIC” and “2”. These are the input enable buttons, they tell the unit to receive and record sound from the built-in microphones (“MIC”), or the external microphones (“1” and “2”). You can enable as many of these channels as you want. The light above the button will be on when input is enabled, and will be off when the input is disabled.
- RECORD BUTTON – the button with a red dot, is used to start recording. When you have started the recording, the little red light above the button will light up. Also, when recording, the wave pattern on the unit’s display will go red. To start recording, press the record button once, and before that, make sure that at least one input enabled through the three blue buttons below.
- STOP BUTTON – to stop recording, you can press the stop button located to the left of the record button.
- UNIT DISPLAY – the unit display (screen) is showing four channels that the unit can pick up inputs from. The top two quadrants of the display show the wave pattern of the built-in microphones, the lower left quadrant shows wave pattern of the microphone plugged in channel “1”, and the lower right quadrant shows the wave pattern of the microphone plugged in channel “2” of the unit. These are the display components you need to monitor while recording. When the unit is in the monitor mode (not recording yet) the wave pattern will be white. When the record button is pressed, the wave pattern will turn red. Along with a red light above the record button, this is also an indication that the recoding is ongoing.

The unit offers many other settings, but those are beyond the scope of this quick reference guide, or your use for this purpose. These are accessed and modified by using the “Enter” button on the right side of the unit, and the roller on the right side of the unit. To find out more, you can read more in the supporting materials provided. Do take into account that someone else will borrow the kit after you.

3. Microphones, mic cables, and mic stands

The kit includes two external passive microphones (they don't need added 'phantom' power to work), and they are also 'dynamic' microphones - Sennheiser e835 & AT2040. This means that they don't pick up too much noise from the surrounding, but also that the speaker to be relatively close to them to provide for a good signal. The optimal position relative to the microphone will depend on how loud the voice/sound is, and also on the angle at which the sound is delivered to the microphone. When you are close, you might force some air to the sound-capturing membrane, which may record as noise on your sound file. This is why it is recommended to use pop-filter screens or designated windscreens for the two external microphones, and the built-in microphones on the unit. You are encouraged to use windscreens when recording outside, where wind might also introduce noise to your recording.

The two external microphones are connected to the Zoom unit by means of microphone cables supplied with the kit (so-called XLR cables/connectors). The two ends of the cables are not the same - the male end of the cable goes into the female socket of the unit and female end of the cable goes into the male microphone socket. Use the colors of the cables to determine which microphone is connected to which channel.
Cables can be damaged by yanking, pulling, twisting hard or stepping on them – avoid those actions.

Mic stands are sturdy enough to hold your microphone in a position (e.g. on a desktop) while recording your conversations. They assemble by screwing the bar onto the base. Two microphones have two different types of attachment to the mic stand.

4. Headphones

How can you know if the sound you are recording is of sufficiently good quality? There are two ways to monitor this on this recording setup: by listening the sound level on the headphones, and by looking at the graphical display on the main screen of the unit.

Headphones plug into the socket on the left side of the unit. Next to the socket is a roller which controls the volume supplied to the headphones. When you assemble the recorder with microphones, and enable recording by pressing the designated button(s) marked with "1", "2" and "MIC", you should be able to hear the sound that the microphones are picking up in your headphones. But beware – if you set the volume to your headphones to be very high, it might trick you into thinking that the supplied level is high enough, although it may rather be the volume in the headphones that is turned all

the way up. Therefore, use the second way to monitor the input sound at the same time – looking over the wave display on the unit screen. When recording is enabled, you should see the waves representing the intensity of the sound that was picked up by the microphones, passing from right to left. When recording is enabled but you are not actually recording, these wave depictions are white. When you start recording, the wave patterns will turn red.
You want to make sure that the wave depiction is such that it almost reaches top and bottom of the designated quarter of the screen when sound is picked up. If the wave pattern resembles flat line, you might be picking up sound at a very low level, or not at all. If the wave pattern is consistently filling out the designated quarter of the screen, your sound might be on the edge of being too loud.

When monitoring recording, it is recommended to use both headphones and visually occasionally check the wave pattern at the same time.

As a part of the kit, we also included a 3-way headphone signal splitter, which will allow up to three sets of headphones to be connected to the output of the unit. This can mean that you as an interviewer and your two interviewees can all have headphones and can all stay mindful of the volume at which you are speaking into the microphones.

5. File naming system

Files saved on microSD card will have a naming pattern which can help you determine which clip you are looking for, and which channel it was recorded through. See below:

Files are named with the following format.

File name example	Explanation
2420101_000000_Tr1.WAV 1 2 3	1 Date The date of recording is included numerically. The numbers follow the set order (Setting the date format). 2 Time The hour, minute and second are included numerically. 3 Track name This shows the track used for recording. • TrMic: File recorded using the built-in XY mic • Tr1, Tr2: Files recorded using tracks 1 and 2 • TrLR: File that is a stereo mix of all tracks

5. Good-practice tips

- Adjust the level of the input signal by: adjusting the distance of the speaker/source from the microphone (generally about 10 cm/4 in. away should be alright for these external microphones. Too close might produce popping sounds, too far might result in a low recording level.
- Check input levels frequently.
- Don't tap on the microphones, cables, microphone stands – taping, moving stands cables or microphones may be picked up by the unit as the noise, and that noise may be hard or impossible to remove in editing.
- Be aware of the noise and ambient sounds you may be used to and don't notice any more (A/C units, fans, traffic, etc.)
- Use pop-filters and windscreens to avoid popping sounds caused by rush of air reaching the microphone.
- Control the echo in your recording by choosing a room with lower echo (soft and irregular surfaces dampen the echo; sharp, hard and parallel surfaces do the opposite).
- Eliminate potential feedback by keeping the headphones away from the input microphones.
- Keep an eye on the battery life if recording on battery only.
- Keep water away from any component of the kit.
- If recording outside – use windscreens and protect from water.

Online resources:

wasagabeachpubliclibrary.ca/our-town-resources

Questions? We're Here to Help!

General Inquiries & Storytelling Support - Tracey Strnad
Email: Tracey.Strnad@wasagabeach.com

Audio Recording & Technical Support - Drazen (Vic) Vicic
Email: Drazen.Vicic@wasagabeach.com

Scan to visit Our Town resources web page