

ZOOM H2n Quick Guide

Global Emergent Media Lab

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AUDIO RECORDER INFORMATION

Integrated Microphone and Recorder Design.

5 Integrated Microphones with 4 Selectable Recording Patterns.

Records Stereo (2 Channel) and 4 Channel Surround.

Record Broadcast .WAV files and .MP3 files up to 320kbps.

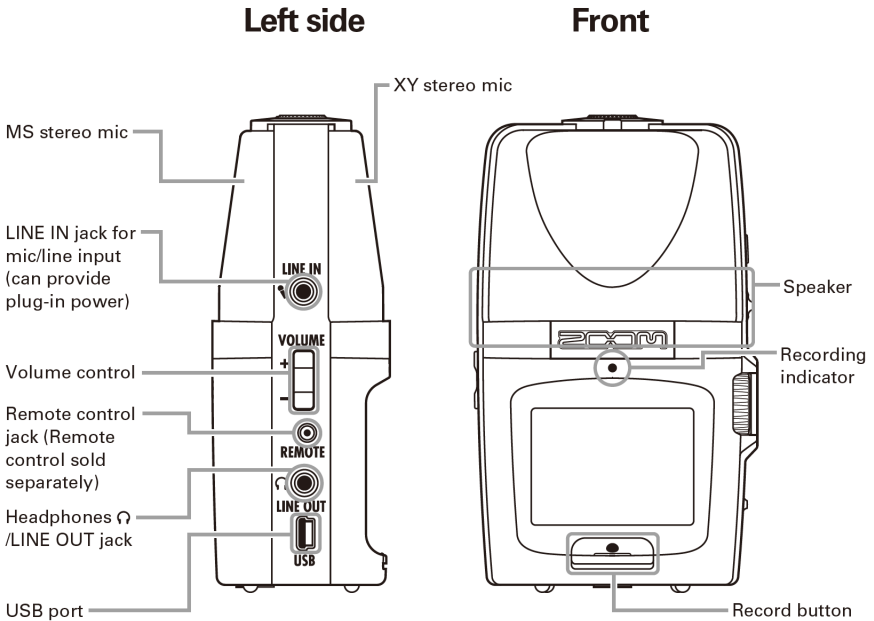
3.5mm Input (for an external microphone) or 3.5mm Output for headphones.

20 hours of power from 2 AA batteries (cannot be rechargeable batteries.)

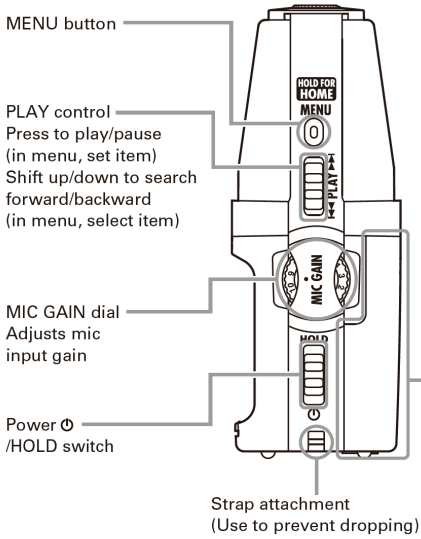
USB AC Adapter included in kit.

AUDIO RECORDER BASICS

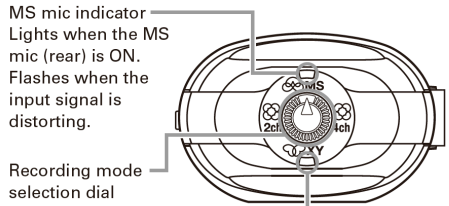
Physical Inputs and Controls:



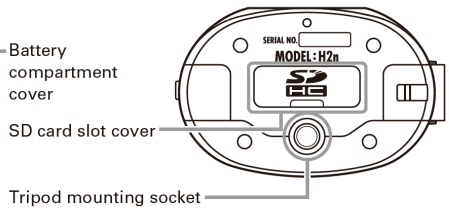
Right side



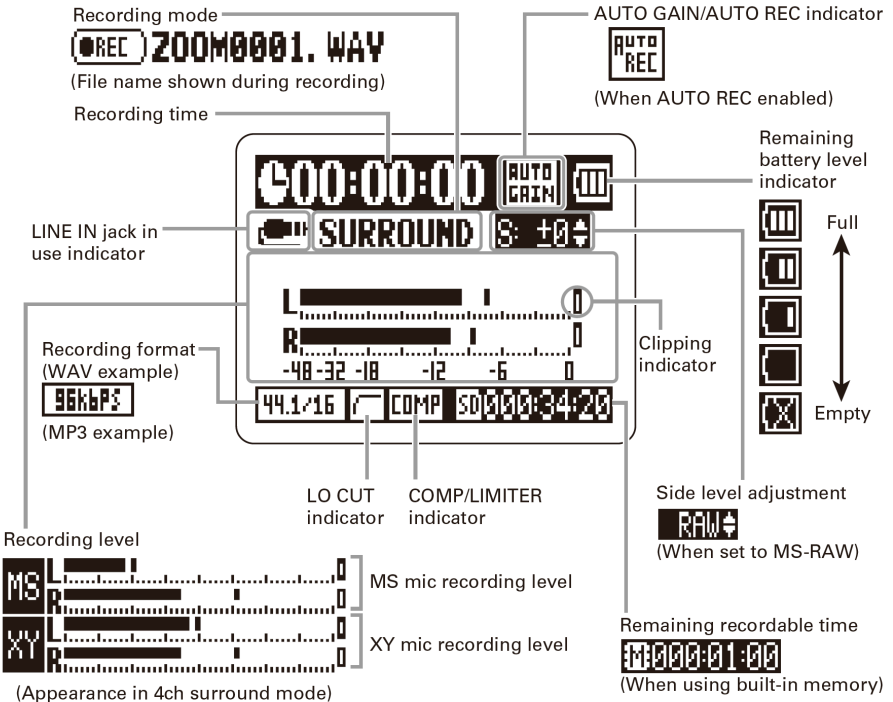
Top



Bottom

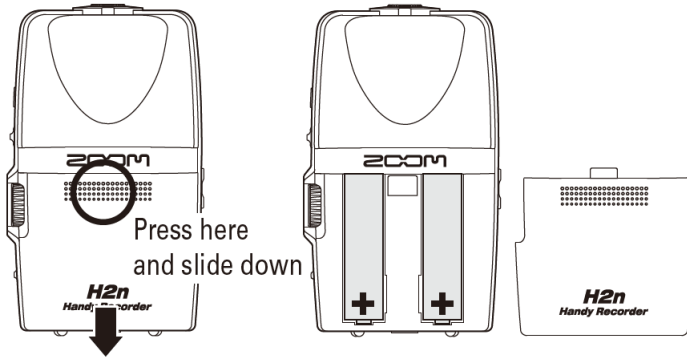


Home (recording) screen



Battery Replacement:

Just slide the back cover off (it can stick a bit). Make sure to replace the fabric snaps under your batteries to make them easier to take out when replacing them. Also do not leave batteries in the device when returning or storing it.



OPERATIONS AND SUGGESTED SETTINGS

The H2n is designed to be easy to use, while delivering high quality results. Here are some suggested steps and ways of using the device.

FIRST STEPS

Wipe the memory card

Before you use the H2n to record, it is suggested you connect the unit to a computer (it will act like an SD card reader) and delete all recordings left on the card by previous users. This way you will not run out of space when recording.

Reset the date and time

One the unit is started, with new batteries it will most likely ask you to confirm the date and time. To do this take the following steps:

1. Press the menu button on the top right side.
2. Navigate to the System sub-menu using the “Play Control” toggle and press it.
3. Press the “Play Control” toggle again to enter the correct time and date.

This will make sure that the metadata for the audio files will have the correct date and time, which will most likely be helpful when ordering them later.

Check your recording settings

It is also important to make sure that your recording settings are suitable for your end goal. These settings are in REC SETTING > REC FORMAT.

If you are intending to record audio for a purely audio medium (ie. podcast) then .mp3 encoding at 256 or 320kbps should suffice if you want to reduce file size.

If you are recording audio to be integrated with video, you should record in .WAV 48khz/24 bit, as this is the standard used in published video and in editing systems. If you are recording for high fidelity audio the standard is 44.1khz/24bit.

Are you using an external microphone?

Connect the external microphone to the 3.5mm Input jack. Turn the pattern selector on top of the H2n to "XY". Go into the menu and select INPUT > PLUG-IN POWER. The H2n should now be recording from the external microphone instead of its own. (If so it will display the "Line in Jack in Use" symbol seen earlier in the guide on the "Home (Recording) Screen" diagram.)

General tips on using this microphone/recorder.

This recorder is best suited to recording sound that is relatively close to it, it can also be used to record further sources like a lecture or talk, but it is best suited for close to subject recording. So the fidelity of voice recordings are definitely better if they can be done in relatively close positions to the mic.

It is particularly well suited to recording voice, which could be done with either the MS or XY modes (described below) if you are recording a single person, or 2ch/4ch if you are recording multiple people surrounding the microphone. Ambiance and spaces work quite well with 2ch or 4 ch surround.

What are the different recording modes?

First I'll give a basic description of the four recording modes. As a first note, when a recording mode is selected, the red indicator on top of the recorder will shine either to the front, the back or both. This indicates which side of the mic it is being recorded, front side, back side or both.

XY (XY Stereo)

XY Stereo is a basic stereo mode, the graphic next to it on top of the recorder, represents its pick-up pattern. This is a representation of where the mic is most sensitive. In this case, it is a wide area in front and to both sides of the active side of the microphone (the side on which XY is written) as well as a small area behind the active side of the microphone. The back side pick-up is not suggested to primarily record someone.

The XY mode records sound in a 90° cone from the active side of the microphone. (Imagine a 90° cone emanating from the center of the recorder.) It can be used effectively to record voice in a quiet environment or to record other sounds when you are trying to pick up everything in front of the microphone.

MS (Mid-Side Stereo)

Mid-side stereo is a stereo mode that functions using 3 microphone capsule to give you a Middle signal and two Side signals. The purpose of this is to allow you to control the width of the cone of sound recorded, it however is suggested you be closer to the sound you want to record than XY mode as the center channel's pickup extends further forward than the sides.

When recording in this mode, moving the "Play" toggle up and down will change the amount of Side sound recorded, increasing (+#) or lessening (-#). It will also display at certain intervals the width of the cone of sound being picked up. (It can record as little as 30° or up to 120° or 150° as opposed to the 90° of the XY microphone.)

This option also opens up two ways of controlling the device. You can monitor the sound with headphones and adjust this up or down at time of recording, settling on the amount of side sound you want. **6**

Alternatively, you can turn the number all the way up and it will display “RAW” instead of “+#”, this means it is in MS RAW Mode. In this mode the recorder creates a specialized MS file, most programs cannot open this file so it is not useful as an end file. However the H2n itself can “matrix” the side sound levels and mix it down to stereo after it is recorded.

This is achieved by choosing the file (will have MS appended to the end of the filename) and selecting it in the FILE menu. It will then have an option called MS-RAW TO STEREO, this will give you MS-SIDE MIC LEVEL (which will allow you to change this level to what you want it to be) and EXECUTE (which will create a mixed down stereo file with the stereo width you have just set.)

Ultimately if you have time to test with your microphone and set the appropriate stereo width before recording it will most likely be a simpler workflow for your audio recordings.

This option is useful if you are recording a single source or person in a noisy environment as you can limit the side sound that is picked up. Alternatively it is also useful if you are trying to pick up a wide area, such as a musical performance or talk with speakers on two sides of a stage (ideally amplified, as previously noted distance is key.)

2ch (2 Channel Surround Sound)

This mode records with both the XY and MS capsules, mixing each into a separate track. This allows you the option to mix the sound coming from in front and behind the mic separately.

This can be useful in a two person interview setting, where you can record both the interviewer and interviewee across a small/medium table and have some control in post over the mix of the two voices. (Note: you will most likely not be able to cut out either completely as both sides of the mic pick-up a small amount of sound from the other side.)

4ch (4 Channel Surround Sound)

This mode is the best mode when it comes to doing ambiences or space recordings, as it records as wide as the 2ch mode but gives you more control to mix the channels in post. This way even if you mix down to stereo you can control this mix more deliberately.

When this mode you can change the MS microphone width the same way you would in MS Mode (see the previous entry.) if set to “-6” it will record in a 90° width equal to the XY capsule. (You cannot change this setting post recording like in MS-RAW Mode.)

This will produce two files with the same file name, one with MS at the end and one with XY at the end. This gives you four mixable tracks in post.

REC > REC FORMAT: Suggested Setting

Recording for use with Video: WAV48khz/24bit
 High fidelity recording for use as Audio: WAV44.1khz/24bit
 Immediate distribution for use as Audio: MP3 320kbps
 Recording 4 channel surround sound: WAV48khz/24bit

Note: WAV is more compatible with editing software (video and audio), 48khz is standard for audio/video, 44.1khz is standard for music and some podcasts. It is better to record at the correct khz for your distribution, as converting your file in post can have a variety of odd effects on your audio.

In all voice cases it is suggested you get your microphone as close as possible to your main source of sound. If recording ambiance, try to maintain an even distance from dominant sound sources.

Recording VoiceRecording a single voice in a quiet environment

XY Mode REC MODE: Your Choice

Recording a single voice in a noisy environment

MS Mode REC MODE: Your Choice MS Setting: Your Choice*

*Experiment with turning it down in order to minimize background noise.

Recording a group of people at an event (people on stage at a talk, a performance, etc.)

MS Mode REC MODE: Your Choice MS Setting: Your Choice*

*Experiment with turning it up to a higher setting to maximize your pick-up area.

Recording a group of people at an event and the audience

2ch Mode REC MODE: WAV44.1 or 48khz MS Setting: Your Choice*

*Make sure the MS side is pointing towards the stage and set the MS setting as with the previous entry. The XY microphone will now pick up the audience on the second track.

Recording a group of people at an event and the audience or 4 person interview

4ch Mode REC MODE: WAV44.1 or 48khz MS Setting: Your Choice*

*Make sure the MS side is pointing towards the stage and set the MS setting as with the previous entry. The XY microphone will now pick up the audience on the second track. This will give you 4 channels to mix with in order to boost or lower specific sounds.

Recording a two person interview

2ch Mode REC MODE: Your Choice MS Setting: -6 (90°)*

*This sets both sides of the mic to equal width of stereo pickup.

Recording a 4 or 3 person interview

4ch Mode REC MODE: Your Choice MS Setting: -6 (90°)

* To use this for a four person interview set up, point each person at the mic each from the corner of a square position. This way the XY side can allow you to separate two of the four people. The MS side is not as useful for separating voices. If recording 3 people, put one on the MS side, and two on the XY side in a triangular arrangement.