

## Audio Recording Tips for M-Audio and Zoom H4n

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**Whatever you use to record, always experiment first to test the results.**

### Basic recording tips:

1. Use an external microphone so as not to pick up the sound of the recorder's motor; Not necessary with Zoom recorder.
2. Turn off the 'beep' on the recorder if it has one;
3. Use new heavy-duty batteries (not rechargeable, they've proved inconsistent in performance) in the recorder and in the microphone (where applicable);
4. Use a disc or memory card with sufficient space;
5. Ensure the microphone is turned on and plugged into the correct socket;
6. Visibly check the input volume meter to ensure it is indeed receiving audio input, and audibly check that all is well;
7. Ensure the time is passing by on the 'recorded time' clock, i.e. that it's not on 'pause' or 'hold';
8. While recording, regularly monitor the battery level and the record time available.
9. Don't move the recorder or wires during recording.
10. Make a Test before starting.

***\*\*NB: It is a good idea to always bring headphones to monitor the audio.***

*If the equipment being used has the ability to monitor the recording, as with the Zoom or M-Audio recorder or a video camera, do so. If this isn't possible, it is important to take test recordings before beginning program recording to make sure a recording with enough level to produce a clear recording without being too loud is being captured. When a track gets too loud, it over-saturates and clips, producing a very poor sound reproduction.*

### Better recording for lectures:

- \* Use a 'unidirectional' microphone
- \* Set the recording level so it doesn't go above the maximum input level;
- \* Position the microphone slightly to one side of the speaker and use a foam cover, this helps avoid it picking up aspiration of the letter 'p,' etc. (and wind if you're shooting outdoors, etc.)
- \* If you are sending an audio dispatch, try to be consistent with microphone position, distance, and other settings. Thus if you wish to add something later, the sound is more likely to be similar.
- \* Ensure settings are: 44.1 KHz, 16 bit, No compression. Normally mono is sufficient for speech, especially if the file is intended for the web

The **Zoom H4n** is a bit of a Swiss Army Knife production tool. Not only can it serve as an **external** recorder for DSLR video work, it can also act as an audio interface for your computer. This means that you can connect it to a Mac or Windows PC via USB 2.0, plug a microphone into one of its two XLR inputs, and use the H4n to create voiceovers in post-production. You can record directly into the timeline of Amadeus Pro or any video or audio production software that supports external interfaces. There are also lots of powerful features for musicians in the H4n, such as multi-track recording, a guitar tuner, and a metronome. It's even possible to record four separate channels of audio using the H4n's high-quality built-in stereo condenser microphones and its two XLR microphone inputs simultaneously.

You can easily set the H4n to record **different file formats and audio resolutions** -- Including the ability to record audio as compressed MP3 files. But since the goal here is to achieve the best quality possible, let's forget I even mentioned MP3! In my personal experience recording sound for video productions, I've had great results setting the recorder for 24-bit/48 kHz WAV files. Many people have reported excellent sync results when setting the Zoom H4n to record sound with 16-bit/48 kHz WAV files for shooting 24p video. But I would recommend trying 24-bit/48 kHz first. It's a richer sounding bit depth, and it gives your audio recordings more headroom.

**A GREAT TEST** Because there are so many video-enabled DSLR's that offer different frame rate capabilities, you may need to experiment to find settings that work best between your camera, audio recorder, and editing software. I strongly recommend doing test shots to work out any issues before you get involved with a serious production. From start to finish, roll your camera and external audio recorder for over 10 minutes. As the equipment runs, periodically clap your hands in the frame (or better yet, use a clapper slate). After you've logged the footage into your computer, if the claps stay in sync when you watch the test video, then you've successfully recorded double system sound. If the clapping audio isn't in sync with the clapping on screen (especially later in the footage, 5 or 10 minutes in), then you need to adjust the settings of your software.

Interestingly, sync issues happen more often when the video editing software's preference settings are incorrect. The audio and video files are usually not at fault. A common pitfall is when the timeline of the video editing software is set to a different frame rate than the video and audio footage. Even if the DSLR was set to record video at 24fps and the audio files were recorded as 24-bit 48 kHz (or 16-bit 48 kHz) WAVs, if the timeline in the software is locked to 29.97 frames per second, you're bound to have sync issues.

## **Transferring to the computer**

*M-AUDIO Recorder (CF)* and Zoom recorder – use memory card readers in labs to drag and copy your file to the destination of your choice, e.g. Mars, your hard drive. Copy and backup your file before doing any editing or manipulation.

*Other recorders (ex: mini disc player, digital voice recorder, cassette recorder)*

1. Use a Male-to-Male audio cable, plug one end into the earphone socket of the minidisc player, and one into the line-in on the computer.

2. (For Mac) ensure your Control Panels / Sound / Input is set to 'Line-in' and 'Play sound through output device;' and while in the Sound control panel, turn OFF the Alert sound;

3. Open appropriate sound software. (Amadeus, Garageband, Audio Hijack Pro.)

4. Start playing the sound source (the mini-disc player, cassette player, etc.) and check there's an input sound wave;

5. Adjust the 'volume' of the external player and the 'gain' of the software so as to prevent the input volume from exceeding the maximum input level.

6. Listen! Check there's no electrical interference (some appliances and neon lights can introduce a hum). Make a 1-minute test recording and listen to that too.

7. When all is confirmed to be working well, then start recording from the beginning. Don't use the computer for anything else during recording.