



TENTACLE SYNC - WHITE PAPER

Working with a ZOOM H4N Audio-Recorder

Tentacle Sync can be used with many cameras and audio-recorders. A very popular audio recorder is the Zoom H4N. To get it to work with Tentacle, some preparatory work needs to be done.

Principle

The Zoom H4N has no timecode generator build in (although the files it produces seems to have timecode - but this pseudo timecode that comes from the internal and very imprecise Real Time Clock). Therefore we need to make use of Tentacles Audio-Timecode feature which makes it possible to record the timecode information onto one unused audio track. The Zoom H4N is capable to record 4 channels simultaneously. These are divided into 2 stereo tracks. One stereo track from the internal microphones and one from the XLR Jacks at the bottom of the device. If you are using the H4N together with Tentacle you are able to record one stereo track with the wanted audio-signal and the other stereo track will be used for recording timecode.

Zoom H4N 4 Track Mode

Mic:
AudioTC

STEREO TRACK 1

XLR 1,2:
usable signal

STEREO TRACK 2

Setting up your Zoom H4N

1. Set your Tentacles to output timecode at MIC-Level. This can be done via the included Tentacle setup software.
2. Attach the Tentacle to the Zoom H4N with the included Mini-Jack Cable to „Ext Mic“. This will cut off the internal microphones of the H4N. Instead of them the external timecode-signal will be recorded on the MIC-Track.



3. Switch the Zoom H4N to 4CH-Mode (4 Channel) where it records 2 stereo tracks: One MIC-Track (now Timecode Track) and a stereo track where the usable signal from the XLR connectors is recorded
4. Adjust the level of the incoming Timecode signal so that it is not clipping.
5. Theoretically you could start to record now. But there is still one issue to solve: On your headphones you will hear both the signal coming from the XLR inputs and the annoying timecode-signal together. We want to record the timecode, but we don't want to hear it during monitoring. To make this work, the Zoom H4N has a monitoring Mixer, where you can choose wich signal to monitor. Just go to the Menu, select Mixer and turn the Level of the Mic-Track all the way down to „MUTE“. Now you are able to record both stereo tracks, but only monitoring the track with the wanted signal.
PLEASE NOTE: Unfortunately the Zoom H4N does not show the level of the track anymore on the Level-Meter (during recording) when muted in the monitoring mixer. Although it will still be recorded.



6. Ok, you are done and ready to record audio-files with Timecode! **Please note that you should make sure to start new files for every take. This is done by pressing the „Stop“ Button after recording. Pressing „Pause“ would result in a continue of the existing file wich Tentacle Sync is not able to handle at this time (but will be in future :)**

Beyond Shooting

The Tentacle Sync software is ready to process audio-timecode files recorded with a Zoom H4N in the previously explained manner. One issue that the software solves for you is that it automatically detects the right stereo track-pairs that belong together. This is important because one Track (the Mic-Track) holds the Timecode informations for both Tracks, but no usable audio. The XLR-Track hold the audio you want to use, but no Timecode Information. Tentacle deals with that and copies the Timecode to the corresponding Track. Once loaded and analyzed you could now delete the MIC-Track if you want to. This is conveniently done by choosing „Select Audio Tracks w. Audio-TC“ out of the edit-menu and hitting the Backspace Key.

	4CH001I.wav Broadcast Wave 1.54 MB, Len 00:08, *14-11-2013 12:49:36 Video no video Audio lpcm, 2CH, 16bit, 48000Hz File-TC 12:49:36.000 (fps not set) NDF Audio-TC 11:48:38:06 NDF (~25.00fps) on channel 2 of track 1
	4CH001M.wav Broadcast Wave 1.54 MB, Len 00:08, *14-11-2013 12:49:36 Video no video Audio lpcm, 2CH, 16bit, 48000Hz File-TC 12:49:36.000 (fps not set) NDF Audio-TC 11:48:38:06 (linked)
	4CH002I.wav Broadcast Wave 100.75 MB, Len 08:44, *14-11-2013 12:50:15 Video no video Audio lpcm, 2CH, 16bit, 48000Hz File-TC 12:50:15.000 (fps not set) NDF Audio-TC 11:49:28:21 NDF (~25.00fps) on channel 2 of track 1