THE ZOOM H4N

The gold standard in portable recording

The H4n Handy Recorder has long been a favorite of audio and video aficionados everywhere. It offers four tracks of simultaneous recording, a built-in X/Y stereo microphone, and advanced features such as time stamping, phantom power and mid-side (MS) decoding, as well as onboard

multi-effects and guitar/bass amp modeling. Rugged, lightweight and versatile, the H4n is a great audio companion for everything from live concert recording to location videography to music-making.

Two paths to perfect stereo

The H4n provides two different ways of recording great-sounding stereo. The X/Y technique is an excellent way to cover a wide area while still capturing sound sources in the center with clarity and definition, making it ideal for all types of live stereo recording.

The H4n's built-in X/Y microphone provides two matched unidirectional microphones. The angle of the two can easily be changed from 90 degrees for a tightly focused stereo image to 120 degrees for a wider image. (US Patent 8184815)

The H4n also provides an onboard MS decoder so you can do MS ("Mid-Side") recording using external microphones. This is an incredible technique that allows you to adjust the width of the stereo image after it has been recorded, while maintaining perfect mono compatibility, making it especially useful for film, video and television projects.

Concert and rehearsal recording has never been easier

The H4n is a great choice for live recording. Its built-in X/Y microphone allows you to record natural-sounding stereo with a strong center image. In addition, there are two combo XLR/TRS input jacks with phantom power, enabling you to connect a wide variety of external microphones or line-level signals—even instruments such as guitar and bass.

Audio that's every bit as good as your video

DSLRs deliver excellent quality video but limited audio capability. The H4n fills that gap. It can be connected to any standard tripod, or you can use our optional Hot Shoe adapter to mount it directly to your camera. Its onboard X/Y microphone and support for MS recording give you plenty of options

in postproduction, making the H4n an invaluable addition to any location shoot.

Compose, record and craft your music

The H4n transforms any environment into a home studio. Its ability to record up to four tracks simultaneously, along with powerful overdubbing and punch-in features, allows you to do high-quality recording—up to 24-bit/96kHz—wherever you go. Onboard effects such as compression, limiting, reverb, and guitar and bass amp modeling enable you to turn your musical creations into

studio-quality recordings. Four-track recordings can easily be mixed down to stereo or mono, with independent control over each track's level and panning, and you can even convert your finished song to an MP3 file for emailing and posting to your favorite social networking site.

The Ins and Outs

Inputs

The H4n provides dual inputs, both of which are combo connectors that can accept either XLR or ¼" balanced or unbalanced phone cables. They can handle both mic- and line-level signals as well as instrument-level signals from electric guitars or basses. Phantom Power of +24 or +48 volts can be applied to both inputs.

In addition, there's a secondary input for connecting an external mic- or line-level signal via a stereo ⅛" Mic/Line In mini phone jack, including condenser microphones requiring 2.5 volts of Plug-In Power.

Outputs

The H4n Line/Phone Out is a stereo ⅛" phone jack with dedicated volume control. Headphones can be connected to this jack for private monitoring of the input or recorded signal. There's also a built-in speaker on the back panel for fast monophonic monitoring of the recorded signal without the need to make any connections.

The H4n USB port provides a digital output of the stereo mix and allows data to be sent to and from computer editing software such as the supplied Cubase LE. USB also allows the H4n to be used as a 2-in/2-out audio interface and enables the installation of software updates from the Zoom website.

Pre-Record and Auto-Record

Pre-record

The interview started a split-second before you were ready. The conductor lifted his baton just as you were checking a cable. The talent went back on-air a moment too soon.

No problem… as long as you're using an H4n. Its Pre-record function automatically keeps the H4n silently but continuously recording in the background, all the time, keeping the previous two seconds* when you hit RECORD.

One second when recording at a 96 kHz sampling rate in 4CH mode.

Auto-record

Auto-Record allows the H4n to automatically start recording when a certain level of sound is detected. As soon as an incoming signal exceeds the Start Level you've set, recording begins.

There's an equivalent Auto-record Stop function, too; as soon as incoming signal drops below the Stop Level you've set, recording ends.

Onboard effects

The H4n provides an arsenal of effects that allow you to add polish to your recordings and compensate for any problems or limitations in the acoustics of the recording environment.

Compression and limiting compensate for fluctuations in level, acting like an automatic volume control. The main difference between the two is that a limiter reduces louder sounds more severely.

A low-cut filter allows you to remove signal below a user-designated frequency. This is useful for eliminating pops, wind noise, blowing, and other kinds of low frequency rumble such as transmitted resonance from an onstage mic stand.

There's also an onboard metronome and chromatic / guitar / bass tuner, as well as dozens of guitar and bass effects, including compression, delay/reverb, modulation, and amp models, which can be chained together to create powerful multi-effects. In addition, playback can be looped and the playback speed varied without pitch change (or vice versa) to facilitate phrase training.

File types supported
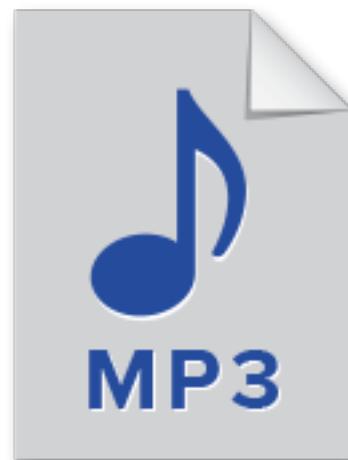
The H4n can record audio in two different basic file types: WAV and MP3.

The main difference between the two is that WAV files are uncompressed; that is, they contain all the recorded signal without any data being removed. The WAV files recorded by the H4n can be either 16- or 24-bit, with sampling rates of 44.1, 48, or 96kHz, and are automatically time-stamped, making them Broadcast Wave Format (BWF) compliant—especially important when recording audio for video since it allows for precise synchronization in post-production.

MP3 recordings are compressed, which means that some unnecessary data is removed prior to storage, making them much smaller than WAV files, and thus much easier to upload and download. Some MP3 files exhibit a slight loss of audio fidelity as compared with the original signal; however, this is not noticeable in all circumstances.

Battery life and recording times

The H4n requires just 2 AA batteries—either alkaline or rechargeable NiMH. Battery life when using alkaline batteries is more than 20 hours, even during continuous recording. Alternatively, you can use an optional AD-17 AC adapter, which allows you to power the H4n from any standard wall socket.

The H4n records directly to SD cards, with support for both standard SD and SDHC cards, up to 32 gigabytes. The charts below show maximum recording times for different file types and SD/SDHC card sizes.

STEREO MODE

REC Format		SD/SDHC Card Capacity				
		1GB	4GB	8GB	16GB	32GB
MP3	128kbps	17hrs 21min	69hrs 26min	138hrs 53min	277hrs 46min	555hrs 33min
	320kbps	6hrs 56min	27hrs 46min	55hrs 33min	151hrs 6min	342hrs 13min
WAV	16bit / 44.1kHz	1hr 34min	6hrs 17min	12hrs 35min	25hrs 11min	50hrs 23min
	16bit / 48kHz	1hr 26min	5hrs 47min	11hrs 34min	23hrs 8min	46hrs 17min
	24bit / 96kHz	28min	1hrs 55min	3hrs 51min	7hrs 42min	15hrs 25min

4 CHANNEL MODE

REC Format		SD/SDHC Card Capacity				
		1GB	4GB	8GB	16GB	32GB
WAV	16bit / 44.1kHz	47min	3hrs 8min	6hrs 17min	12hrs 35min	25hrs 11min
	24bit / 48kHz	28min	1hrs 55min	3hrs 51min	7hrs 42min	15hrs 25min

MTR MODE (Monaural tracks)

REC Format	SD/SDHC Card Capacity				
	1GB	4GB	8GB	16GB	32GB
WAV 16bit / 44.1kHz	3hrs 8min	12hrs 35min	25hrs 11min	50hrs 23min	100hrs 46min

Recording times are approximations. Actual times may differ according to recording conditions.

The maximum file size is limited to 2GB.

Using the H4n as an audio interface

The H4n's USB port allows it to send and receive digital data and to act as a 2-input / 2-output interface, operating at sampling frequencies of either 44.1 or 48kHz. Simply connect the H4n to your laptop or desktop computer via USB, launch your favorite DAW or use the included Cubase LE, and start laying down your tracks. When operating at a sampling frequency of 44.1kHz, signal can even be routed through the H4n's onboard effects.

Features at a glance

- Four-track simultaneous recording

- Built-in X/Y stereo mic, adjustable between 90˚ and 120˚

- Onboard MS decoding

- Dual mic/line/instrument level inputs with XLR/TRS combo connectors

- Stereo ⅛" Mic/Line In mini phone jack

- +24 or +48V phantom power for main inputs and Plug-in power (2.5V) via Mic/Line In mini phone jack

- Output/headphone jack with dedicated volume control

- Built-in reference speaker for fast monitoring

- Large 1.9 inch backlit LCD display

- Records directly to SD and SDHC cards up to 32GB

- Supports up to 24-bit/96kHz audio in BWF-compliant WAV or a variety of MP3 formats

- Auto-record and Pre-record features

- Internal mixdown: four-track to stereo and stereo to dual mono

- Up to 99 marks per recording

- Flexible overdubbing and punch-in/out

- Built-in effects, including compression/limiting, low-cut filtering, modulation, reverb/delay and amp models

- Normalize (maximum gain) and Divide (file splitting) functions

- Chromatic tuner and metronome

- Loop playback with user-defined start and stop points

- Variable playback speed, from 50% to 150%, without affecting pitch

- Variable pitch without affecting playback speed

- USB port for data exchange to and from computer

- 2-in/2-out USB audio interface for PC/Mac computers

- SD card reader function

- Mounts to mic stand or tripod, or directly to DSLR with optional Hot Shoe adapter

- Runs on only 2 standard AA alkaline or NiMH rechargeable batteries

- Over 6 hours of operation with 2 AA alkaline batteries (over 11 hours in Stamina mode)

- AC adapter included

Accessories

Here's what comes included with the H4n:

- Operation manual

- SD card (2GB)
- Windscreen
- MA2 mic clip adapter
- AD-14 AC adapter
- USB cable
- Cubase LE software
- Protective case

Optional H4n accessories

- RC4 remote control
- APH-4n DSLR accessory package includes RC4, Hot Shoe mount adapter, windscreen, splitter cable and attenuator cable

Concert recording

Here's how you might typically use the H4n for concert recording. In this example, the H4n is set to record a stereo MP3 or 16-bit/44.1kHz WAV file in STAMINA mode (for extended battery life of up to 11 hours). Its built-in X/Y microphone is being used to capture the performance, including room sound. In addition, a stereo feed from the mixer is being sent to Inputs 1 and 2 in order to record a feed from the live sound board.

Location videography

In this example, the H4n is set to record in 4CH mode so that two stereo tracks can be recorded simultaneously. A pair of matched external mics (connected to Inputs 1 and 2) set in a mid-side configuration are focused on the talent, while the built-in X/Y microphone is used to capture the ambient sound. The H4n's onboard MS decoder can then be used to adjust the width of the stereo image in post-production. Finally, the four tracks can be bounced down to a stereo pair using the Stereo Encode function.

Making music

In this example, we start with a backing track. Here, the H4n is set to record in MTR mode to high-resolution 24-bit/96kHz WAV files, with its metronome employed to give the musicians a click track and its chromatic tuner keeping everyone in tune. The built-in X/Y mic is used to capture the sound of the drums, while the electric guitar and electric bass are connected directly to Inputs 1 and 2—the H4n's onboard guitar and bass amp modeling means that no amps or speakers are required.

Once the backing track is completed to everyone's satisfaction, you can apply effects and bounce the four tracks down to stereo (or mono), then overdub vocals and solos on the remaining tracks using the H4n's powerful Punch-In features. Finally, use the File MP3 Encode function to convert the finished song to an MP3 file and email it to your friends or post it to your favorite social networking site.
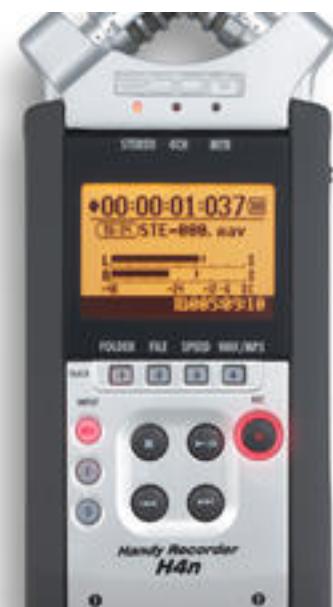
MEDIA

Zoom H4n: How to Update Firmware

Zoom H4n: How to Update Firmware

In this video we show how to update the Firmware on the H4n.

DOWNLOADS

IMAGES

(https://www.zoom-na.com/sites/default/files/products/downloads/images/H4n_top.jpg)

(https://www.zoom-na.com/sites/default/files/products/downloads/images/H4n_rear.jpg)

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DOCUMENTS

Zoom H4n Handy Recorder: Operations Manual (English)
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Zoom H4n Handy Recorder: Software Version History (v1.72, English)
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Zoom H4n Compatible SD Cards
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SOFTWARE

Drivers
For Windows Vista / 7 / 8 (32bit) Version 2.0.0.3 (https://www.zoom-na.com/sites/default/files/products/downloads/software/E_H-Series_ASIO_win32_v2.0.0.3.zip)

For Windows Vista / 7 / 8 (64bit) Version 2.0.0.3 (https://www.zoom-na.com/sites/default/files/products/downloads/software/E_H-Series_ASIO_win64_v2.0.0.3.zip)

For Windows XP (32bit) Version 1.0.4 (https://www.zoom-na.com/sites/default/files/products/downloads/software/E_H-Series_ASIOv1.0.4.zip)

Firmware
H4n System Version 1.72 (https://www.zoom-na.com/sites/default/files/products/downloads/software/H4n_v1.72E.zip)

SPECS

GENERAL

Number of simultaneous recording tracks:	2 (STEREO mode), 4 (4CH mode), 2 (MTR mode)
Number of simultaneous playback tracks:	2 (STEREO mode), 4 (4CH mode), 4 (MTR mode)
Recording time 4GB (SDHC):	Approx. 380 minutes (WAV 44.1 kHz/16 bit stereo track) Approx. 68 hours (MP3 44.1 kHz/128kbps stereo track) * Recording times are approximations. Actual times may differ according to recording conditions.
Maximum number of simultaneous recording files size:	2GB
Projects:	1000/card
Locate function:	Hours/Minutes/Seconds/Milliseconds
Other functions:	Punch-in/out, Bounce, A-B repeat
Effects modules:	2 STEREO / 4CH Mode: LO CUT, COMP/LIMITER MTR Mode : PRE AMP module, EFX module
Types:	50
Patches:	60
Tuners:	Chromatic, Guitar, Bass, Open A/D/E/G, DADGAD
Metronome sound sources:	5
Variable beat:	1/4 - 8/4, 6/8, unaccentuated
Tempo:	40.0 - 250.0 BPM
A/D conversion:	24 bit × 128 oversampling
D/A conversion:	24 bit × 128 oversampling
Recording media:	SD card (16MB - 2GB), SDHC card (4GB - 32GB)
Display:	128 x 64 dots Full-dot backlit LCD

DATA TYPE - WAV FORMAT (RECORD/PLAY)

Quantization:	16/24 bit
Sampling frequency:	44.1 / 48 / 96 kHz

DATA TYPE - MP3 FORMAT (RECORDING)

Bit rate:	48, 56, 64, 80, 96, 112, 128, 160, 192, 224, 256, 320 kbps, VBR
Sampling frequency:	44.1 kHz

DATA TYPE - MP3 FORMAT (PLAYBACK)

Bit rate:	48, 56, 64, 80, 96, 112, 128, 160, 192, 224, 256, 320 kbps, VBR
Sampling frequency:	44.1 / 48 kHz

INPUTS

Input [1] [2]:	XLR (balanced input) / standard phone (unbalanced input) combo jack
Input impedance:	(Using balanced input) 1 kΩ balanced, pin 2 hot (Using unbalanced input) 480 kΩ unbalanced
Input level:	(Using balanced input) –10 dBm to -42 dBm (Using unbalanced input) +2 dBm to -32 dBm
Built-in stereo mic:	Unidirectional condenser microphone Gain: +7 dB to +47 dB
External mic:	Mini stereo phone jack Input impedance: 2 kΩ Input level: -7 dBm to -47 dBm

OUTPUTS

Line/phone:	LINE Output load impedance: 10 kΩ or more Rated output level: -10 dBm PHONE: 20 mW+20 mW (into 32-Ω load)
Monaural speaker:	400 mW 8 Ω

Monaural speaker:	400 mW 8 Ω
Phantom power:	48 V, 24 V, OFF
USB:	USB 2.0 High Speed Mass Storage Class operation, Audio interface operation (USB functions can be operated by USB bus power)
Power requirements:	DC 5 V 1A AC from AC adapter (ZOOM AD-14)
Batteries:	IEC R6 (size AA) x 2
Continuous recording time:	6 hours (STEREO/4CH/MTR mode) 11 hours (STAMINA mode)
Dimensions:	73 (W) × 156.3 (D) × 35 (H) mm
Weight:	280 g
	* 0 dBm = 0.755 Vrms * Design and specifications subject to change without notice.

RELATED PRODUCTS

WSU-1
Universal Windscreen
(/products/product-accessories/zoom-wsu-1-universal-windscreen)

APH-4n
H4n Accessory Pack
(/products/product-accessories/zoom-aph-4n-h4n-accessory-pack-dslr)

HS-1
Hot Shoe Mount Adapter
(/products/product-accessories/zoom-hs-1-hot-shoe-mount-adapter)

MA2
Tripod to Mic Stand Adapter for Handy Recorders
(/products/product-accessories/zoom-ma2-tripod-mic-stand-adapter-handy-recorders)

RC4
Remote Control for H4n
(/products/product-accessories/zoom-rc4-remote-control-h4n)

H6
Handy Recorder
(/zoom-h6-handy-recorder)

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