# Zoom H4n Pro
## Handy/Field recorder

Presented by the Media Creation Lab

# Contents

# 1. Overview & Power

# 1.1. Overview

- **Handy/field recorder**
  - Serious musicians: Live/studio performances
  - Interviews, podcasts
- **Standalone microphone / audio interface**
- **Buttons including *Menu* button & scroll dial**
  - Press *Menu* to open main menu, cancel/return
  - Scroll dial to highlight, press to select

# 1.2. Turning On/Off

- **Power button on left side**
  - Slide to I/O icon & hold for 2 sec
- **Startup / shutdown time:** ~2 min
  - Correlation(?) to storage capacity of SD/SDHC card
  - Compatible cards: 512 MB - 32 GB

(Zoom, 2016)

# 1.3. Power Options

1. **AC adapter (bottom):** Plug to power socket
2. **Batteries (back side):** Two AA batteries
3. **Bus power (left side):** USB cable to computer

# 1.3.a. Power Options: AC adapter

- **Port on bottom**
- **5 volts, 1 amps**

# 1.3.b. Power Options: AA Batteries

- **Housing component on back**
- **Alkaline** or **nickel-metal hydride** (Ni-MH, 2500 mAh)
  - *Menu -> System -> Battery -> [Alkaline/Ni-MH]*
- **Stamina mode:** Longer battery life vs limited functions
  - Open cover & slide *Stamina* button to *On*
- **Battery life:** Recommend duration is ~3-4 hrs
  - Alkaline: ~5.5 hrs (~8 hrs in Stamina mode)
  - Ni-MH: ~7.5 hrs (~10 hrs in Stamina mode)

(Zoom, n.d.)

# 1.3.c. Power Options: Bus Power

- **Mini-USB port on left side**
  - Connect cable to computer with USB-A port/adapter
- **H4n can be turned off**
  - While turned on, select *Menu* -> *USB* -> *[mode]*
    - *Storage*: Transfer files to computer
    - *Audio I/F* (interface): Use device only as mic

# 2. Input

# 2.1. Core Concepts

- **Channel:** Representation of sound to/from any point
- **Mono:** One channel, file has combined L/R section
- **Stereo:** Two channels, file has separate L/R sections

- **H4n Pro mode selection: *Menu* -> *Mode* -> *[mode]***
  - ***Stereo:*** Record two channels
  - ***4CH:*** Record four channels
  - ***MTR:*** Play/record multiple tracks at same time

# 2.2. Input Options

1. **Built-in mics (top)**
2. **External 3.5 mm mic (back side)**
3. **External 1/4 in and/or XLR mics (bottom)**

- In *Input* section of front, press *Mic*, *1*, or *2* button
- 4CH mode automatically selects *Mic*, *1*, & *2*

# 2.2.a. Input Options: Built-in Mics

- **Twin mics on top in X/Y configuration**
- **90- or 120-degree pickup pattern** (recording area)
  - Twist both mic knobs to **90** or **120** label
  - **90**: One audio source (e.g. person)
    - Place parallel to floor & point to source
  - **120**: Two+ audio sources (e.g. two persons)
    - Place perpendicular to floor & between sources

# 2.2.b. Input Options: 3.5 mm Mic

- **3.5 mm port on back**
- **Uses cases:**
  - Condenser/desktop mics
  - Lapel/lavalier mics
  - Receiver of wireless mic system
- **Automatic override** of built-in mics

# 2.2.c. Input Options: 1/4-in, XLR mics

- **Two combo ports (1/4 in or XLR) on bottom**
  - Press ***Push*** lever to release
- **Use cases:**
  - Mics, instruments (guitars, keyboards)
  - Receiver of wireless mic system
- **Inputs *1 & 2* share volume by default**
  - ***Menu* -> *Input* -> *1/2 Link* -> *[On/Off]***
- **Inputs *1 & 2* each record one channel**
  - One-sided stereo recording

# 2.3. Recording Level (Volume)

- ***Rec Level* buttons (right side): Change *[Input] Level***
  - Press ***Input*** button on front to match input
  - Resting, standby (ideal), or recording state

**Preview mic level before recording:**
1. Press ***Rec*** button to enter standby
2. Position device/mic as intended
3. Produce sound as intended & observe on-screen meters
4. Adjust ***[Input] Level*** so peaks are at ***-12*** dB mark (+/- 3)

# 3. Output

# 3.1. Output Options

1. **Built-in speaker (back side)**
2. **Headphone/line-out (left side)**

# 3.1.a. Output Options: Built-in Speaker

- **Built-in speaker on back side**
  - Standalone or audio-interface mode

# 3.1.b. Output Options: Headphone/Line

- **3.5 mm port on left side**
- **Use cases:**
  - Headphones
  - External speakers (amplification)
  - Sound board/mixer

# 3.2. Output Volume

- ***Vol* buttons on left side: Change (output) *Volume***
  - Resting, standby, recording, or playback states
  - Independent of ***Rec Level***

# 3.3. File Formats

- **WAV or MP3**
  - ***WAV:*** Higher quality
    - Create recording marks (bookmarks for playback)
  - **MP3:** Smaller file-size

**Format selection**

    **a.** ***Menu - > Rec -> Rec Format -> [format]***

    **b.** (Main screen) Press ***WAV/MP3*** button -> ***[format]***

# 3.4. File Organization

- **Recording modes have separate folders & sub-folders**
    - *Stereo -> [Folder01 ... Folder10] -> [file]*
    - *4CH -> [Folder01 ... Folder10] -> [files]*
        - 4CH recordings: Twin files appended with *I* or *M*
    - *MTR -> ProjXYZ -> [file]*

# 3.5. Folder/File Selection

**Select sub-folder (within current mode folder)**
- **a.** *Menu* -> *Folder*
- **b.** (Main screen) Press *Folder* button

**Select file in current sub-folder**
- **a.** *Menu* -> *File*
- **b.** (Main screen) Press *File* button

# 4. Recording & Playback

**MCL**

# 4.1. Accessories

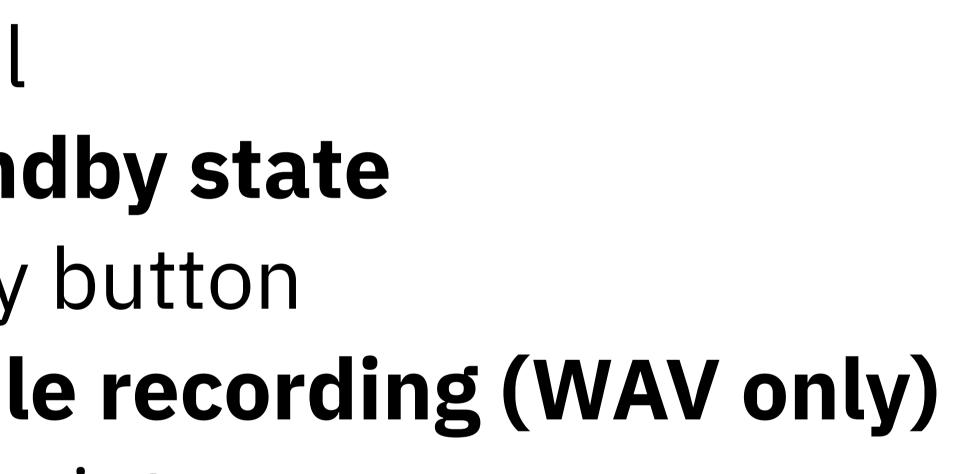- Tripod with 1/4 in screw
- Fur windshield

# 4.2. *Rec* Button

1. **Enter standby state**
   - Preview recording level
2. **Start recording from standby state**
   - (Alternative) Press Play button
3. **(Optional) Set marks while recording (WAV only)**
   - Press before relevant points
   - Can have 99 marks
   - Note button doesn't function as pause button

# 4.3. Other Buttons

- Stop button: Stop recording; stop playback
- Play/Pause button:
  - Recording: Start (from standby), pause/resume
  - Playback: Play/pause/resume playback
- Skip buttons: Skip to next/previous file
  - (If applicable) Skip to next/previous mark within file

- Key Hold (left side): Disables button input
  - Slide power switch to **Hold**

# 5. Usage with Computer

# 5.1. File Transfer

## Transfer by USB cable

1. Insert USB cable into mini-USB port on left side
2. Connect cable to computer & turn off H4n
3. (H4n) Select *Storage* & (computer) locate *H4N_SD* drive

## Transfer by SD card

1. Remove SD card from covered slot on right side
2. Insert into computer with slot/adapter
3. (Computer) Locate *H4N_SD* drive

# 5.2. USB Mic

**Setup on H4n**

1. (Recommended) Turn off H4n
2. Connect USB cable (Micro-USB port, left side)
3. Connect cable to computer
4. Select **Audio I/F**
5. Select **Frequency** -> **48kHz** (**44.1kHz** possible on Mac)
6. Select **Connect**

- H4n appears on computer as **H4**

# (continued)

## Setup on Mac (macOS)

1. Open *Applications* -> *Utilities* -> *Audio MIDI Setup*
   - Or use Spotlight Search to find **Audio MIDI Setup**
2. Select *H4* (*2 ins / 0 outs*) in sidebar
3. Set *Format* drop-down to equivalent frequency on H4n
   a. (H4n) *44.1kHZ* = (Mac) *44,100 Hz*
   b. (H4n) *48kHZ* = (Mac) *48,000 Hz*

- Discrepancies: higher/lower pitch of recordings

# References

**Zoom. (n.d.).** *Zoom H4n Pro Black*. https://zoomcorp.com/en/ca/handheld-recorders/handheld-recorders/h4n-pro/

**Zoom. (2016).** *H4n/H4nPro operation confirmed SD/SDHC cards*. https://zoomcorp.com/media/documents/H4n_H4nPro_compatible_cards_en_2.pdf

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