

H4next *Handy Recorder*

OPERATION MANUAL

ZOOM

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Special features of H4n

Thank you very much for purchasing our ZOOM H4n Handy Recorder (hereinafter abbreviated to H4n).
The H4n has the following special features.

- **An all-in-one handy recorder.**

You can enjoy recording and creating your own music any time, anywhere with the H4n.

The H4n has a very compact 280 g lightweight design, equipped with high quality stereo condenser microphones arranged in an XY pickup pattern, a built-in speaker, SD card recording, mixer and internal effects.

- **Versatile field recorder with multi-track capability.**

The H4n is capable of recording in several different operation modes: <STEREO mode> which is capable of high quality stereo recording; <4CH mode> which can record 4 discrete channels simultaneously using the on-board microphones and the external inputs; <MTR mode> which allows you to record multiple tracks in multiple passes, overdubbing one or two tracks at a time. In <STAMINA mode> you can record for up to 11 hours using batteries only.

- **Newly designed XY stereo microphones allow variable recording patterns from 90 to 120 degrees.**

The H4n allows the user to adjust the angle of the onboard microphones to address a wider range of recording scenarios. If you want a wider area of sound, you can set the microphones to 120 degrees. Or set them to 90 degrees for a more focused sound source. Either way, the mics retain their XY configuration, so you can record natural stereo sound with no phase cancellation.

- **XLR-1/4-inch combo jacks allow direct connection of any sound source.**

We've loaded the H4n with a versatile array of input options to accommodate a variety of recording sources. Any type of microphone (including condensers), electric instrument (guitar, bass, keyboard) or line level source can be connected to the H4n.

- **It can be used as an Audio Interface/SD card reader for a computer.**

An onboard USB 2.0 Hi-Speed jack allows direct connection to a computer. You can use it as an audio interface with built-in effects (sampling rate 44.1 kHz). You can also use the H4n as an SD card reader for your computer. You can even take the recorded files from your computer and create an audio CD using those files as material in any DAW software.

- **Other built-in functions: Tuner/Metronome/Karaoke.**

The H4n can be used as a standard chromatic tuner. It is also capable of more irregular tuning functions, like for a 7-string guitar or a 5-string bass, along with others. The H4n has a metronome function convenient for practice and multi-track recording.

You can change playback speed between the ranges of 50% to 150%.

There are many other effects functions included, such as center cancel function for stereo files, Karaoke function with variable key control, language learning and voice training function

* Please read this manual carefully to ensure comprehensive knowledge and proper use of the H4n.

After reading through it, please keep the manual for future reference

The H4n is ideal for the following scenarios



Vocal recording



Recording acoustic guitar sound



Piano recitals



Live performance recording



The band practices



Transfer analogue sound sources to digital sources



Recording the meetings



Any field sound recording



Drum practice recording

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Safety precautions for users

SAFETY PRECAUTIONS

In this manual, the warning and caution symbols are used to highlight dangerous accidents and troubles for users to read so that accidents can be prevented. The meanings of these symbols are as follows:



Warning

If the users ignore this symbol and handle the device the wrong way, serious injury or death could result.



Caution

If the users ignore this symbol and handle the device the wrong way, bodily injury and damage to the equipment could result.

Please read through the following safety tips and precautions to ensure hazard-free use of the H4n.

Power requirements



Warning

Since power consumption of this unit is fairly high, we recommend the use of an AC adapter whenever possible. In case you use batteries, use either alkaline or nickel-metal hydride batteries.

[AC adapter operation]

- Make sure to use only an AC adapter, DC5 center plus 1A (ZOOM AD 14). The use of other than the specified type may damage the unit and pose a safety hazard.
- Connect the AC adapter only to an AC outlet that supplies the rated voltage required by the adapter.
- When disconnecting the AC adapter from the AC outlet, make sure grasp the adapter itself and never pull at the cable.
- During lightning or when not using for an extended period, disconnect the AC adapter from the AC outlet.

[Battery operation]

- Use two conventional size AA-1.5 volt batteries.
- H4n cannot be used for recharging. Pay close attention to the labeling of the batteries to make sure you choose the correct ones.

- When not using for an extended period, remove the batteries from the unit.
- If battery leakage has occurred, wipe the battery compartment and battery terminals carefully to remove all remnant of battery fluid.
- When using the unit, the battery compartment cover should be closed.

Environment



Warning

To prevent unexpected troubles and malfunctions, avoid using H4n in environment where it will be exposed to:

- Extreme temperatures
- Heat sources such as radiators or stoves
- High humidity or moisture
- Excessive dust or sand
- Excessive vibration or shock

Handling



Warning

- Never place any objects filled with liquids, such as a vase, on the H4n since this can cause electric shock.
- Never place naked flame sources, such as lighted candles, on the H4n since this can cause fire.



Caution

- The H4n is a precision instrument. Do not exert undue pressure on the keys and other controls. Take care not to drop, bump, and do not subject it to shock or excessive pressure, which can cause serious troubles.
- Take care that no foreign objects (coins or pins etc.) or liquids (water, alcoholic drinks and juice) can enter the unit.
- Do not place the H4n speaker closer to other precision instruments (watch and computer), electronic medical instruments, or magnetic cards.

Connecting cables and input and output jacks



Caution

You should always turn off the power to the H4n and all other equipment before connecting or disconnecting any cables. Make sure to disconnect all a connection cables and the power cord before moving the H4n.

Alterations



Warning

Never open the case of the H4n or attempt to modify the product in any way since this can result in damage to the unit.

Volume



Caution

Do not use the H4n at a loud volume for a long time since this can cause hearing impairment.

USAGE PRECAUTIONS

Electrical interference

For safety considerations, the H4n has been designed to provide maximum protection against the emission of electromagnetic radiation from inside the device, and protection from external interference. However, the equipment that is very susceptible to interference or that emits powerful electromagnetic waves should not be placed near the H4n, as the possibility of interference cannot be ruled out entirely.

With any type of digital control device, the H4n included, electromagnetic interference can cause malfunctioning and can corrupt or destroy data. Care should be taken to minimize the risk of damage.

Cleaning

Use a soft, dry cloth to clean the H4n. If necessary, slightly moisten the cloth. Do not use abrasive cleanser, wax, or solvents (such as paint thinner or cleaning alcohol), since these may dull the finish or damage the surface.

Please keep this manual in a convenient place for future reference.

Copyright warnings


■ Recording of live performances

Many artists and most live venues do not allow recording and photography and will check for cameras and recorders at the entrance. Even if recording is allowed, it is prohibited to sell, distribute, or upload to the Internet without the organizer's authorization. Copyright violation is a crime.

■ Capturing music and sound files

Saving music to CD, MP3, or other media, reproducing files for personal use can be considered a copyright violation.

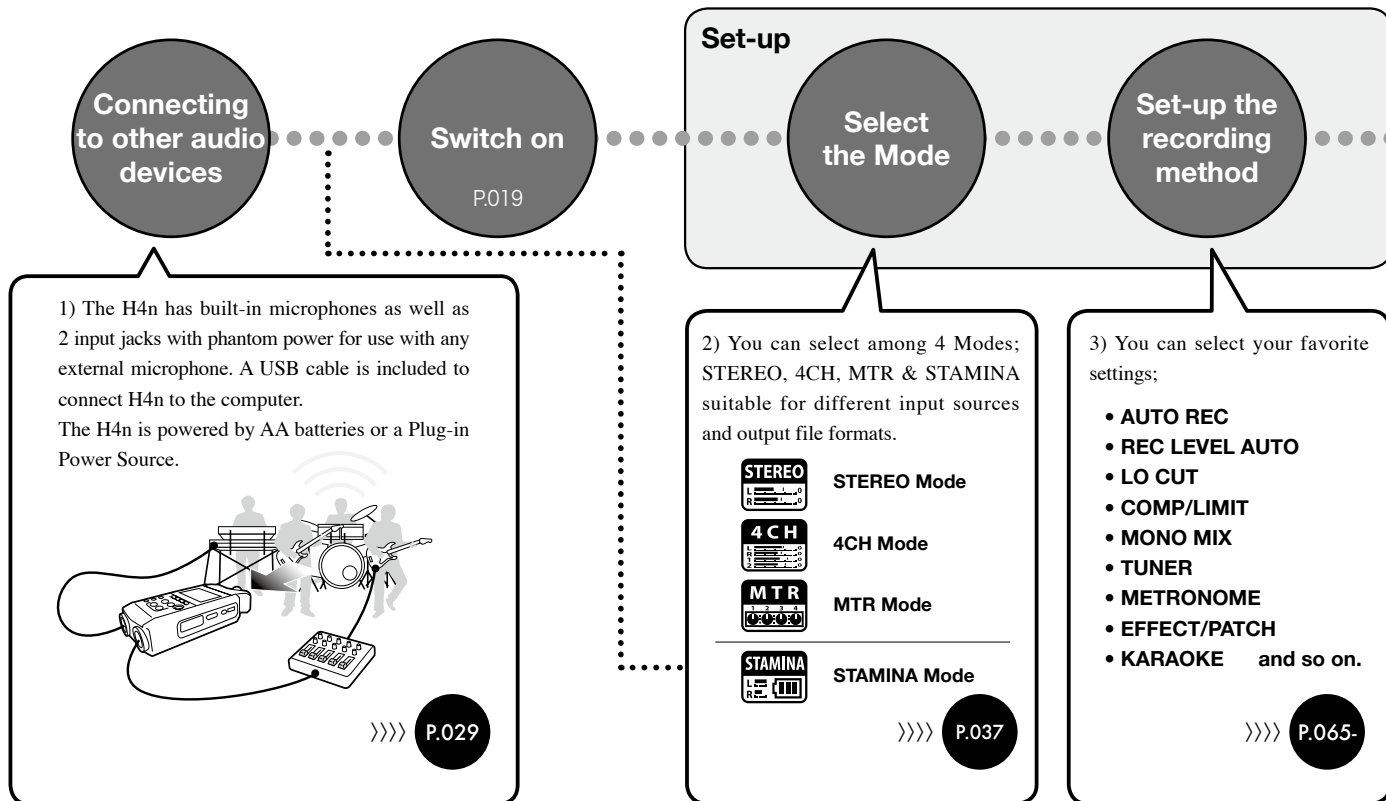
Trademarks:

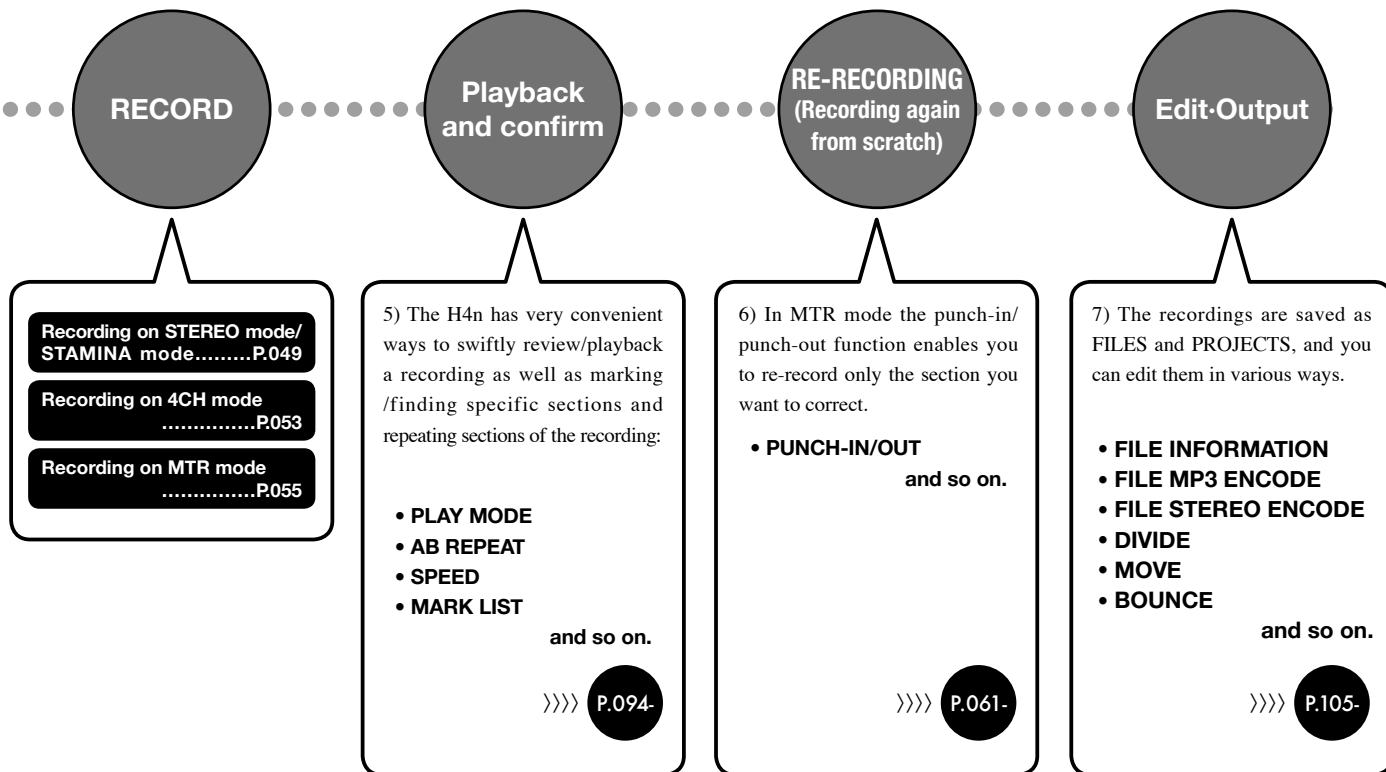
- The SD symbol and SDHC symbol are trademarks.

- The use of MPEG Layer-3 audio compression technology is licensed from Fraunhofer IIS and Sisvel SpA.
- Windows is a registered trademark of US Microsoft Corporation.
- Mac OS and Macintosh is a trademark of Apple Inc.
- Steinberg and Cubase are registered trademarks of Steinberg Media Technologies GmbH Inc.
- Names of manufacturers and products are each respective owner's trademarks or registered.

Getting started

1-1 Recording flow using the H4n

The following is the basic flow of recording operation for the H4n. Depending on the application of the recording, you can select which recording mode and audio quality setting is right for the situation.

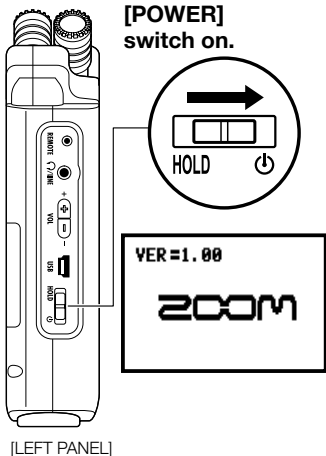




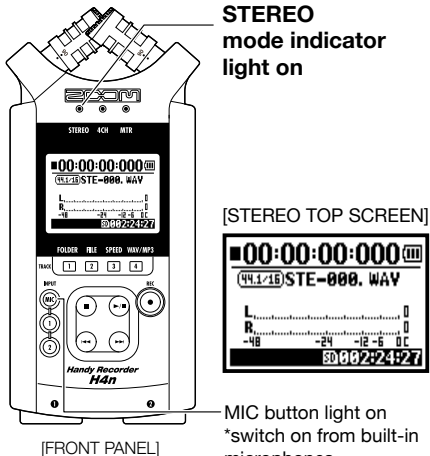
1-2 Easy recording guide [STEREO MODE]

The following is basic recording instructions using the built-in stereo microphones and built-in speaker in STEREO MODE.

1
Power switch ON

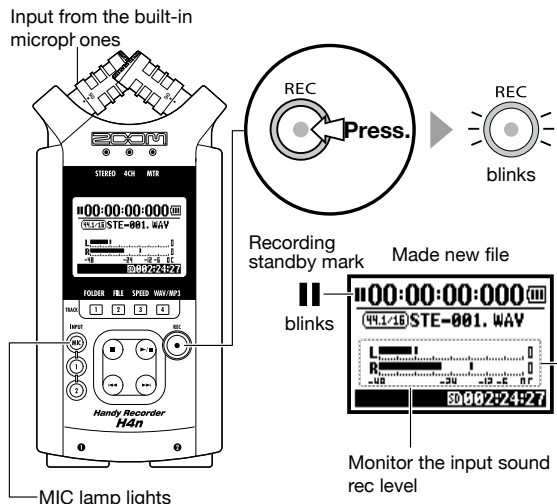


2
Confirm STEREO MODE



In case of a wrong MODE indicator or a wrong screen >>> P.038

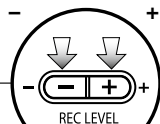
3
RECORD READY OR STANDBY CONDITION



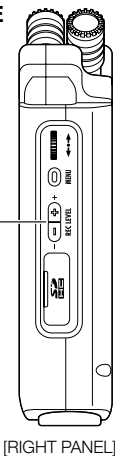
Press here when you want to stop.

4
ADJUST
INPUT LEVEL

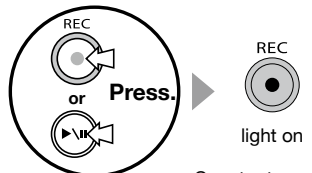
DECREASE INCREASE



Adjust the input sound
rec level



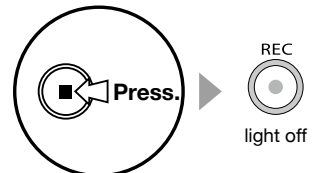
5
START
RECORDING



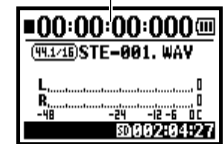
Remaining time on SD CARD

- Pause Recording**
Counter doesn't return 0
- Mark Recording**
Places Mark at specific time in WAV file format

6
STOP
RECORDING

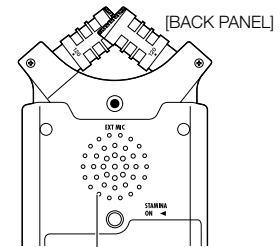
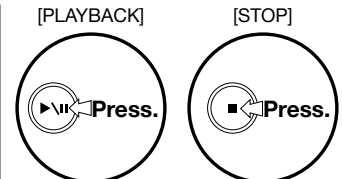


Counter returns 0:00:00:000



In detail >>> **P.049**

7
PLAYBACK



Output: Built-in speaker

In detail >>> **P.094**

2-1 Name and function of each part

[FRONT PANEL]

[BACK PANEL]

90 / 120°
Variable XY
Stereo microphones
(Built-in)

STEREO/4CH/MTR
mode indicator

Backlight Equipped
Display

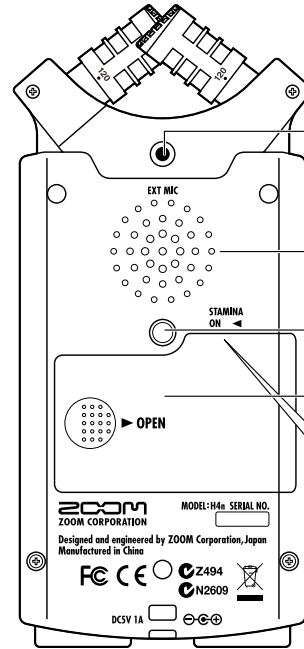
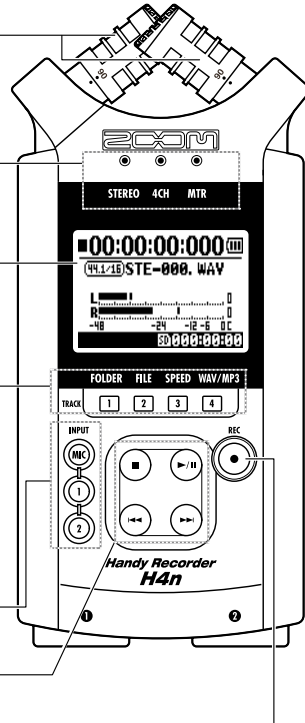
- Short cut buttons on STEREO/4CH mode
 - [1] <FOLDER>
 - [2] <FILE>
 - [3] <SPEED>*STEREO mode
 - [4] <WAV/MP3>
*STEREO/4CH mode

- On MTR mode
Buttons for
TRACK [1], [2], [3], [4]

INPUT: Buttons for
[MIC] [1], [2]

Transport Control Buttons

[REC] Button



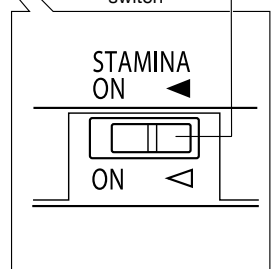
Input jacks for external stereo
microphone

A built-in mono speaker

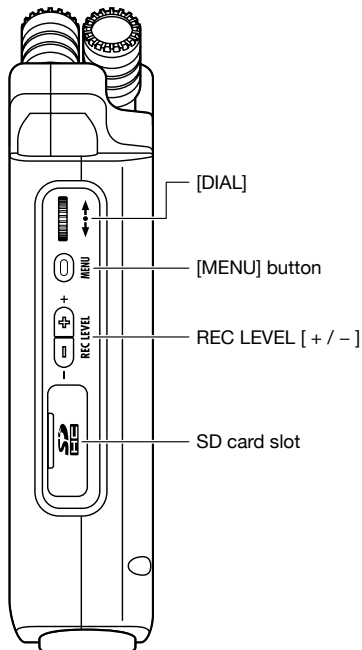
Threaded Tripod mount

Battery cover

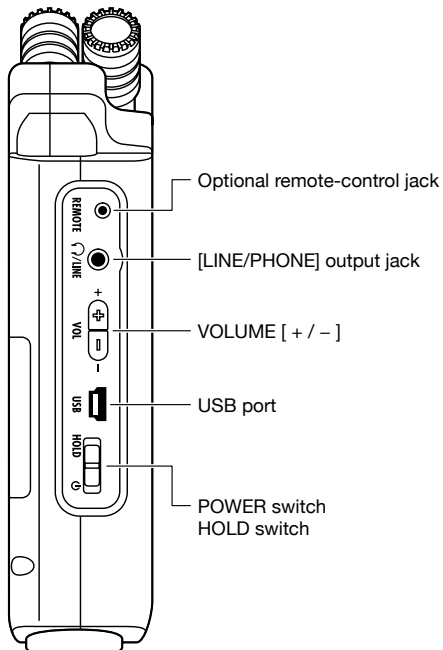
STAMINA mode
switch



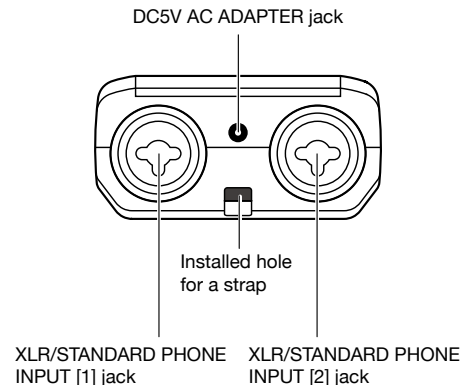
[RIGHT PANEL]



[LEFT PANEL]



[BOTTOM PANEL]



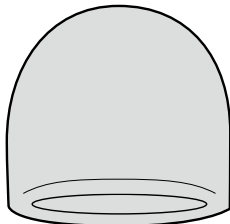
2-2 Included Accessories

The following accessories are included in the H4n package.
Inspect the package contents to be sure all accessories are included.

SD CARD



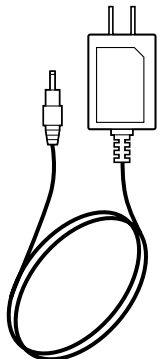
WINDSHIELD



**MICROPHONE STAND
ADAPTER**



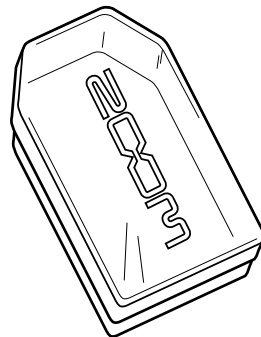
**AC ADAPTER
(ZOOM AD-14)**



USB CABLE



MAIN BODY CASE

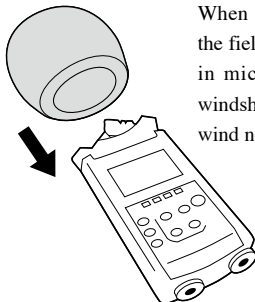


Instruction manual

DAW start-up guide

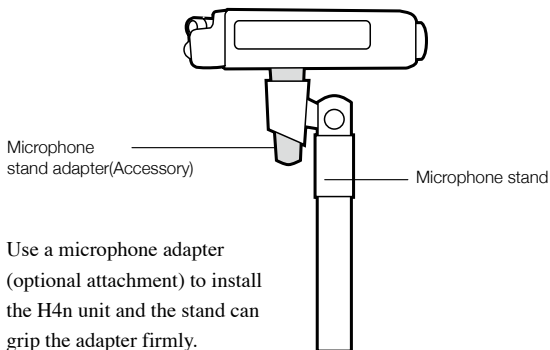
Cubase LE4

•How to use the windshield



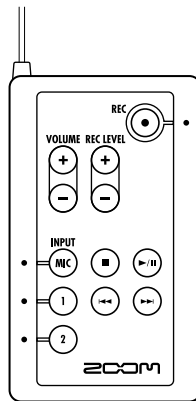
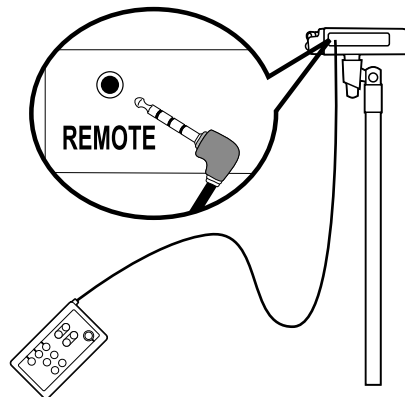
When recording outside in the field, covering the built-in microphones with this windshield, you can reduce wind noise.

•How to mount to a microphone stand



Use a microphone adapter (optional attachment) to install the H4n unit and the stand can grip the adapter firmly.

Remote control
(Option, sold separately)



[FRONT PANEL]



[SIDE PANEL]

Operation of remote control >>>>

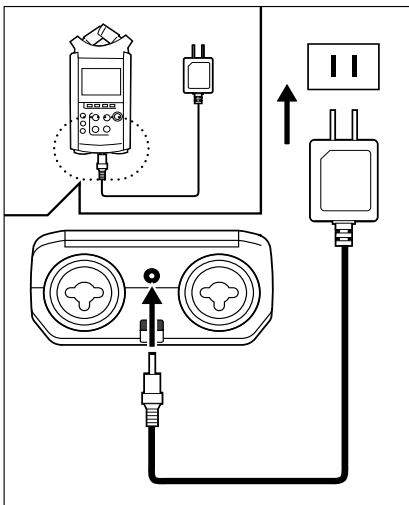
P.045

3 Battery/Power setting

Power for H4n recorder is supplied by the included AC adapter or batteries.

• AC power operation

An AC adapter is included.

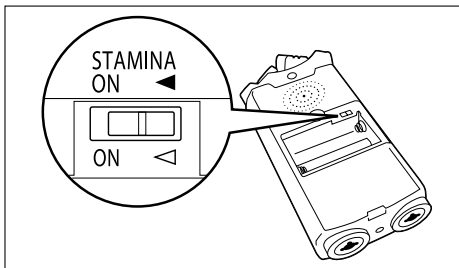
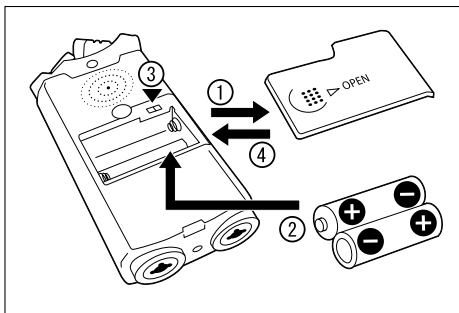


An attached AC adapter
Zoom AD-14

Use of an AC adapter other than the one included may cause trouble.

• Battery installation

Install two size AA batteries (IEC R6)



1 Open the battery compartment cover.

NOTE:

Make sure the power is off!

Whenever you open the battery compartment cover or plug in/unplug the AC adapter, make sure the power is off, otherwise the recording data can be destroyed.

2 Insert two size AA batteries ensuring you match the polarity markings (+ and -).

* Illustration : open the battery compartment cover and insert batteries.

3 Set the Stamina Mode Switch.

* Illustration of a Stamina Switch on.

◀ : Use in general (Using AC adapter, batteries)

ON: Stamina Mode On (Eco-power mode when using batteries)

4 Close the battery compartment cover.

* Illustration of closing the battery compartment cover.

Ref. ⓘ Explanation about the Stamina Mode. **P.037**

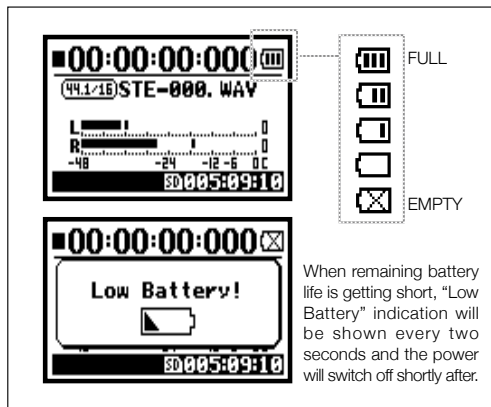
• **Battery's approximate lifetime**

Alkaline battery	in general use	about 6 hours
	in stamina mode use	about 11 hours

* Approximate lifetime when it is used for continuous recording on WAV 44.1 kHz/16bit format.

• **Remaining lifetime of the battery**

When “Low Battery!” indication appears, immediately switch off unit and exchange batteries, or shift power source to AC adapter.



NOTE:

Usable batteries

You can use conventional alkaline and nickel metal hydride batteries.

Power supply from USB

Connect the USB cable to the H4n while it's already connected to the computer with the power switch off, and power is automatically turned on via USB bus power supply. This function is only available when the H4n is used as an SD card reader or an audio interface.

HINT:

To measure the lifetime of the battery

The remaining lifetime of the battery is measured more precisely by using the battery type setting on the H4n.

Saving period for the setting <DATE/TIME>

Whenever power supply is off by dead battery, the H4n can save the date/time setting for three minutes. When the saving time is over, the setting will be returned to the default value.

Screen indicator for power



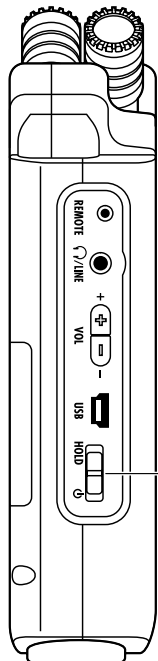
Using batteries

Using AC adapter

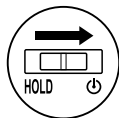
- Ref. ⓘ <USB BUS POWER> **P.033**
- Ref. ⓘ <BATTERY TYPE> **P.128**

4-1 Power On and Off, How to use power and hold switch

[LEFT PANEL]



POWER switch
HOLD switch



POWER ON / BOOTING UP

1 [Preparation]
Make sure all equipment is turned off.

2 Insert SD card.

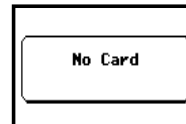
3 [Power On _ Boot up]
Slide the power switch.



4 Switch on connected instruments and monitors.

NOTE

- Before switching the power on, lower the volume of instruments and monitors connected to the H4n.
- If the display reads "No Card" when booting up, make sure that the SD card is inserted correctly.
- If the display says "Reset DATE/TIME" when booting up, the date and time are set to the primary value.



Ref. **P.028**
<DATA/TIME>

HINT: Procedure for power on.

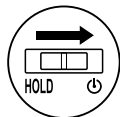
When using additional audio devices, power them on in the following order:



POWER OFF / SHUT DOWN

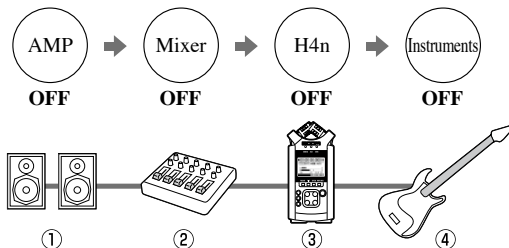
1 [Preparation]
Turn off monitors first then instruments

2 [Power Off _ Shut down]
Slide the power switch.



* shut down screen

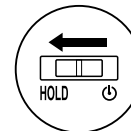
HINT Procedure for power off



HOLD Function

.....
The H4n features a HOLD function to make any button operation inactive, preventing errors during recording.

To engage the hold function, slide switch to hold position.



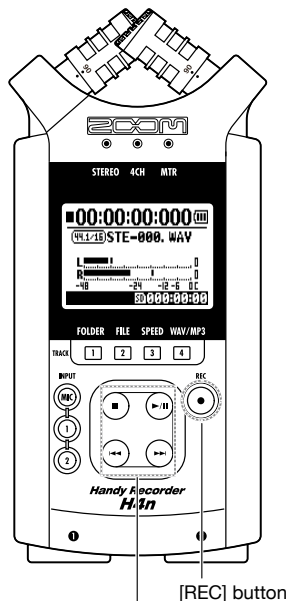
* 'Key Hold' display

If you press any button while the HOLD function is engaged, the screen will display "Key Hold" for two seconds. To disengage the HOLD mode, slide power switch out of hold position.

4-2 How to use the [REC] and transport control buttons

Buttons like [REC], [STOP], [PLAY/PAUSE], [FF], [REW] each have different functions depending on the H4n's operation MODE.

[FRONT PANEL]



[REC] button
transport control buttons

STEREO/4CH/STAMINA MODE

- [REC] button**
- Stop**: Enter recording standby mode and reset the counter to 0
 - Recording Standby**: Start recording and counter
 - Record** **Playback**: Place a mark (WAV FILE only)

TRANSPORT CONTROL BUTTONS

- [STOP] button**
- Recording, recording standby, Recording-pause**: Stop recording and reset counter
 - Playback-pause**: Stop playback and counter
- [PLAY/PAUSE] button**
- Stop**: Start playback and counter
 - Recording, Recording-pause**: Pause or restart recording
 - recording standby**: Start recording and counter
 - Playback-pause**: Pause or restart playback

- [FF], [REW] buttons**
- Stop**: Press for less than one second
[FF] move to next file
[REW] returns to the beginning of the file
* However if there is a marker in a WAV file, the button moves to the marking place.
 - Playback**: Press for more than one second
Scans through file in forward or reverse direction.
 - Playback-pause**: The longer the button is pressed, the faster the scanning speed. Fast Forward or Rewind will stop at the beginning or end of the file.

MTR MODE

- [REC] button**
- Set to overwrite recording**
 - Stop**: Engages recording standby mode
 - Record, Recording Standby**: Stop recording (You can continue playback while recording)
 - Playback**: Stops recording and resets the counter

Recording in ALWAYS NEW mode

- Stop**: Stops recording and counter
- Recording Standby**: Starts recording and counter

TRANSPORT CONTROL BUTTONS

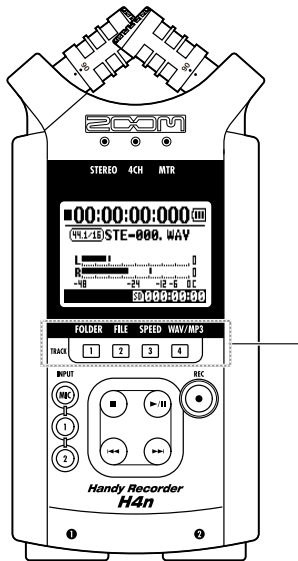
- [STOP] button**
- Recording**: Stop recording and the counter stops
 - Playback**: Stop playback and the counter stops
 - Recording-pause** **Playback-pause**: Stop each movement
- [PLAY/PAUSE] button**
- Stop**: Starts playback
 - Recording**: In OVERWRITE mode: No function
In ALWAYS NEW mode: pause recording
 - Recording standby**: Starts recording and counter
 - Playback**: Pause Playback

- [FF] [REW] buttons**
- Stop**: Press for less than one second
[FF] : Moves forward through file in one second increments
[REW] : Returns to the beginning of the file
 - Playback**: Press for more than one second
Scans through file in forward or reverse direction.

4-3 How to use the track [1], [2], [3] and [4] buttons

The buttons of TRACK [1] – [4] have different functions depending on the MODE.

[Front Panel]



TRACK [1]-[4]

MTR MODE

Switch from 'RECORDING' to 'PLAYBACK' of the tracks, or the other way around

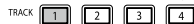


When you start recording, press the track number you want to record and the track becomes 'Recording Standby' status. That track button will then become illuminated.

Make settings of the track and the input source

After selecting the track, use the input source buttons to select the input for that track. Using the INPUT button you can record in mono, stereo or a combination of those.

Select only one track



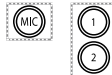
* track #2-#4 are the same, press the number you select

Select two tracks



* track #3 and #4 are the same

For stereo input you select from [MIC] and [1] [2]



For a mono input you can select either from [1] or [2]



* Input selections are those four different combinations.

* Those operations are not valid during recording and playback.

STEREO/4CH/STAMINA MODE

1 Move to the <FOLDER SELECT> menu

2 Move to the <FILE> menu

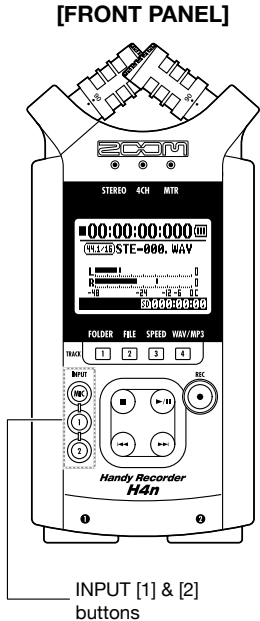
3 Move to the <SPEED> menu (only STEREO MODE)

4 Move to the <REC FORMAT> menu (STEREO MODE, 4CH MODE)

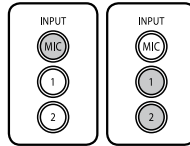
These operations are not available during recording and playback.

4-4 How to use the input [MIC], [1] and [2] buttons

These buttons have different functions depending on the various modes.



STEREO/STAMINA MODE



Select INPUT [MIC] or INPUT [1] [2] and the corresponding button lights up.

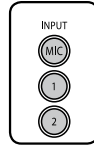
Whether you select the INPUT [1] or INPUT [2] button, they will both respond the same

Both buttons light up after the selection. (Once lighted the buttons do not respond)

Any other settings about input sources like [REC LEVEL], should be made to the lighted target.

* When the presently selected input clips its button will blink.

4CH MODE



Use all input sources like [MIC], [1] and [2] = All [MIC], [1] and [2] light on.

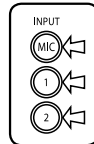
When you switch to 4CH, H4n will receive 2- system stereo inputs from [MIC] and [1] [2]

altogether. When you press the lighted button, each shows its input level and you can make

adjustment to recording level operating [REC LEVEL].

* When the input clips the corresponding button blinks.

MTR MODE



Select [MIC], [1] and [2] individually and the corresponding button lights up.

You can select individually INPUT [MIC], [1] and [2]

- When you use built-in and the external stereo microphones, select INPUT [MIC].

- When you make stereo input using the external input jack, select both INPUT [1] and [2].

You press either INPUT [1] or [2] button and then press another button.

* When the selected input clips its button blinks.

HINT:

What is clipping?

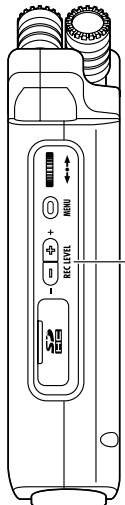
The input level reaches up to the maximum which the H4n can record, that is 0 dB.

In this case the recording sound can be distorted and need adjustment of recording level.

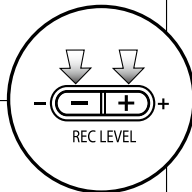
4-5 How to use REC LEVEL and VOLUME

These keys allow you to adjust the levels of recording input and output volume.
 (All the modes are the same)

[LEFT PANEL]



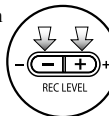
REC LEVEL



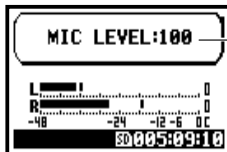
'REC LEVEL' IN ANY MODE

The recording levels coming from the INPUT [1] & [2] can be adjusted from 1 to 100 with the (+/-) key.

Press the 'REC LEVEL' = Adjusting

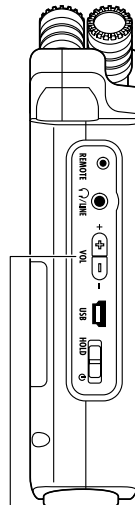


Target setting:
 Press INPUT [MIC], [1] and [2] buttons and select the input source which you want to adjust the recording level.

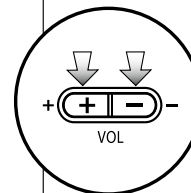


1 _ 100
 + : Increase reception level (amplify)
 - : Decrease reception level (reduce)

[RIGHT PANEL]



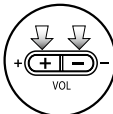
VOLUME



[VOLUME] IN ANY MODE

Press the 'VOL' = Adjusting

Output volume from the built-in speaker and output jacks can be adjusted from 0 to 100 with the (+/-) key.

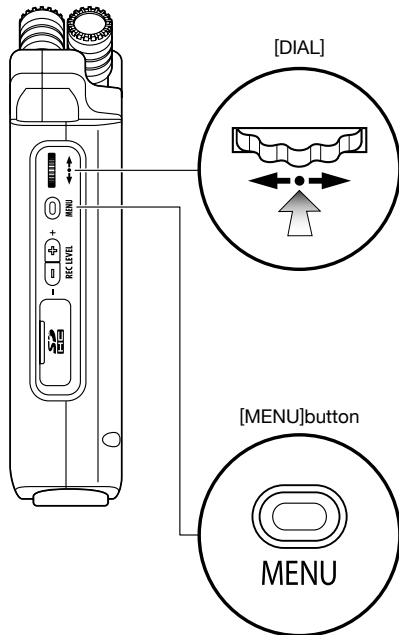


0 _ 100
 + : Increase Volume
 - : Decrease Volume

4-6 How to use [DIAL] and [MENU] buttons

[DIAL] and [MENU] buttons are used for various settings while recording and during playback. Here are some basic explanations about each operation.

[RIGHT PANEL]



The basic operation for [DIAL]



Rotate the [DIAL] = select an item

Rotate the [DIAL], and the cursor on the display will move along the [DIAL]

Select



Press

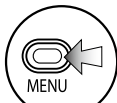
Press in the [DIAL] = confirm the selection

Press down [DIAL], your selection is confirmed.

→ for additional selections, move on to the next screen.

→ When you complete selections, the screen returns back to the previous one.

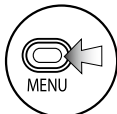
The basic operation for [MENU] button



Calling [MENU] screen

When setting recording or playback method, Press [MENU] button at the top screen of each mode.

Select



Long Press

Canceling the setting

If you press the [MENU] button during any setting operation, its operation will be canceled and the screen returns back to the previous one.

To cancel setting operation and to return back to the top screen of the each mode, press [MENU] button for more than 2 seconds.

The operation when [] cursor is on display (Date-Time Setting, Changing File Name Directory, etc)



When you rotate the [DIAL], [] moves accordingly.



Pressing [DIAL] in, change the numbers and letters.

The item letters or numbers are reversed → Rotate [DIAL] to change the numbers and letters → Press [DIAL] down to confirm your selection.



[DIAL] operation on the top screen

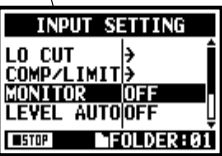
Moving [DIAL] on the top screen, 'cursor' moves. Pressing (highlight) [] selects 'COUNTER' to enable adjustment or calls up the setting menu.

* Available only on MTR mode.

The operation when the selections are listed on screen



By rotating the [DIAL], the selection lists will move accordingly.



Push [DIAL] in, to confirm your selection.

the screen returns back to the previous one.



About the '□' on the selection lists

When you see this display, there are more selections on the next screen. Highlight arrow and press [DIAL] in to move on to the next screen.

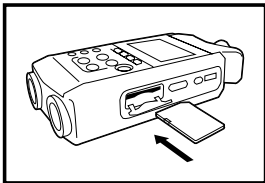
5-1 Insert a SD card

The SD card is required to record. Make sure to turn off power before inserting or removing the SD card.

[How to install the SD card]

1 Make sure power is off.

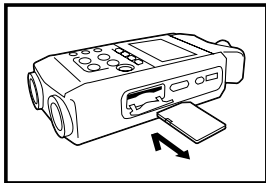
2 Insert the SD card into the slot.



[How to remove the SD card]

1 Make sure power is off.

2 Push the SD card in to remove it from the slot.



SD card capacity time to record (approx.)

4GB SDHC card	Recording time
WAV 44.1 kHz/16 bits (measured in terms of stereo track)	approx. 380 minutes
MP3 44.1 kHz/128 kbps (measured in terms of stereo track)	approx. 68 hours

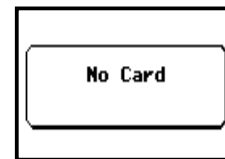
NOTE:

POWER OFF !

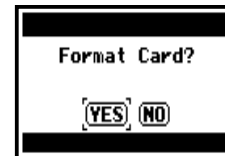
Never insert or remove the SD card while the power is on. This may destroy the data.

CAUTIONS WHEN INSERTING SD CARD

- You can use 16MB to 32GB SD cards. For a list of operation certified SD cards please refer to ZOOM's website: <http://www.zoom.co.jp/>
- When you use the SD card for your computer, digital camera or other machine, formatting in the H4n is required.
- When "No Card" is seen on the display at boot-up, check if the SD card is correctly inserted.
- When "Format Card" is seen on the display at booting-up, this means the SD card has not been formatted in the H4n. To format, press [DIAL] down and select OK button.
- When the booting-up screen says "Card Protect", the card is covered with OVERWRITE PROTECT. To release this protect slide the lock switch of the SD card.



"Warning" no SD card in when booting - up.

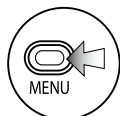


This "Warning" will show when an SD card is not in a recognized format. Select <YES> to format card and all of the data will be deleted.

5-2 Set date and time <DATE/TIME>

Each file will automatically record the date/time.

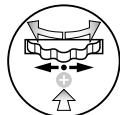
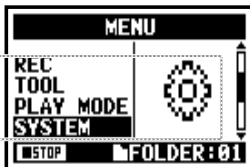
To facilitate searching for files by date, be sure to set the date/time after every battery change.



1 Press.



2 Select <SYSTEM> and press.



3 Select <DATE/TIME> and press.



5 Select <OK> and press.

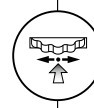


4 Set YEAR→MONTH→DAY→TIME
(Time: Minute: Second)

Select the item on <DATE/TIME>:



You can select the item while moving [] of the [DIAL].



Press the [DIAL] in
* The selected item values are highlighted.

[Change the figure number]:



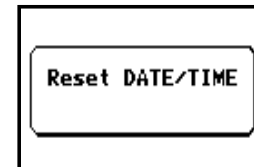
You can select the number by rotating the [DIAL].



Press the [DIAL] in
* [] comes out on display.

NOTE:

When "Reset DATE/TIME" is seen during boot-up, the date/time needs to be set.

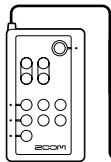


- When there is no power source connected for more than three minutes, the DATE/TIME setting will return to the default value.
- You cannot use this setting during recording and playback.

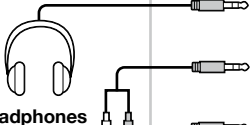
6-1 Setting up: How to connect external audio devices

The H4n offers versatile connectivity with options for any recording application.

Remote control
(option)



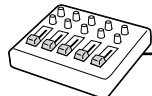
Headphones



Monitor



Mixer

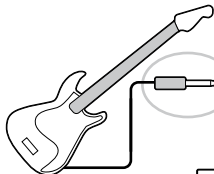


USB



Personal computer (PC)

INPUT: instrument
(guitar)



H4n's very own AC adapter



Stereo
microphones



SD card



INPUT: instrument
(keyboard)

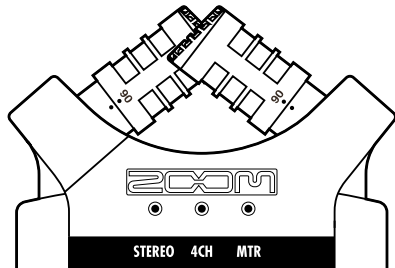


INPUT: instrument
(microphone)



6-2 Setting up: Built-in microphones

These are special features of the H4n's built-in microphones.



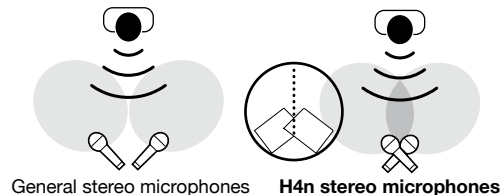
High quality microphones in an XY pattern ensure a natural stereo image when recording sounds.

Stereo recording is often done by placing two microphones in a V shape. Pointing microphones outward will result in stereo separation, however the recording will lack definition around the center position, resulting in a poor stereo image.

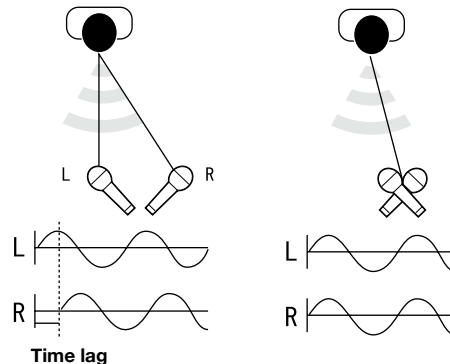
The H4n utilizes an X Y stereo mic configuration. By placing two microphones in a crossed pattern (opposing angles), the H4n can cover a wide area and capture sound sources in the center with clarity and definition. Sounds reach both mics simultaneously, and therefore no phase cancellation occurs between right and left channels.

LOCATION OF THE MICROPHONES UNDER XY SYSTEM

Capturing sound in a stereo image.

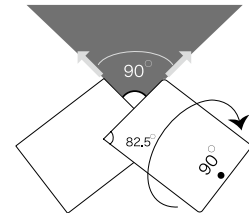


Stereo images with no phase cancellation.

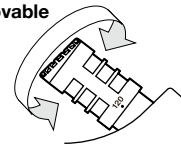


DIRECTIVITY OF 90°, 120°

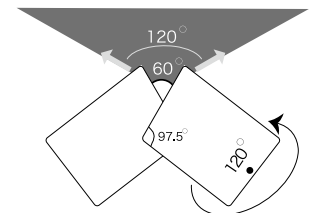
Center 90°



movable



Width 120°



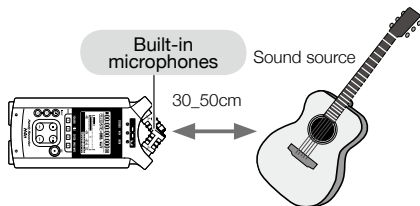
General stereo microphones H4n stereo microphones

6-3 Setting up: Built-in microphones /outside microphone with plug-in power

The input jack for the external microphone is suitable for microphones that require <PLUG-IN> power.

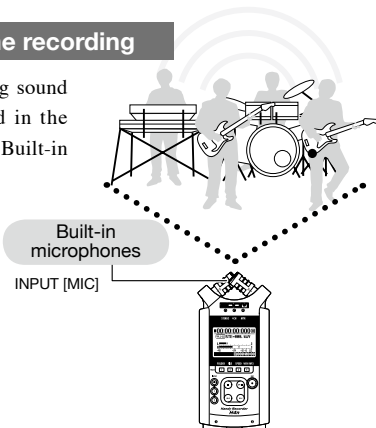
Close microphone recording

Please put H4n 30 - 50 cm away from the sound source.



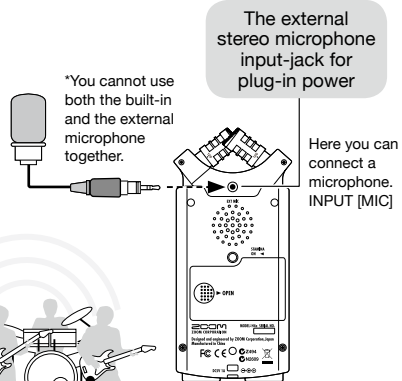
Off microphone recording

Make sure the recording sound sources are all located in the range of T zone of the Built-in microphones.



External microphone recording

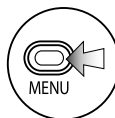
When you use the external microphone, be sure to select the correct setting.



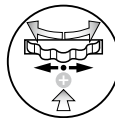
NOTE:

Plug-in and phantom power can not be set during recording and playback.

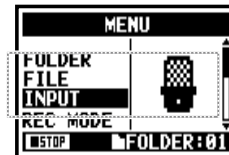
[How to make setting of <PLUG-IN> power]



1
Press.



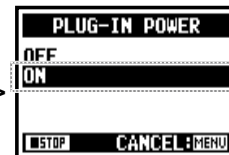
2
Select <INPUT> and press.



3
Select <PLUG-IN> and press.



4
Select <ON> and press.



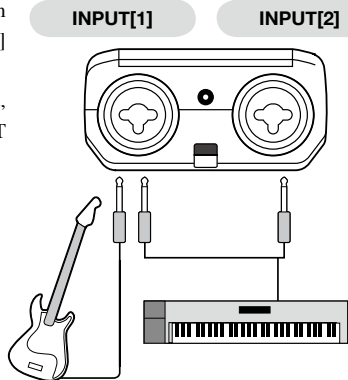
6-4 Setting up: INPUT [1], [2] connections and phantom power source

Using INPUT [1] and INPUT [2] you can connect to a guitar, a bass, a keyboard, etc.

Connecting to instruments

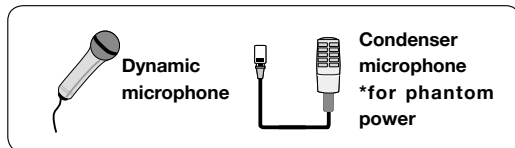
For a guitar or a bass, you can directly plug into either INPUT [1] or INPUT [2].

For a keyboard with stereo output, you can plug into both the INPUT [1] and the INPUT [2].



Connecting to a microphone

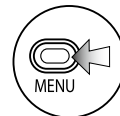
To connect a microphone you connect XLR plugs to INPUT [1] and INPUT [2]. In case you need phantom power, such as using a condenser microphone, be sure to select the following setting.



NOTE:

Some condenser microphones cannot operate with +24V phantom power, but comparing to +48V setting this function is useful for battery operation to economize electric consumption.

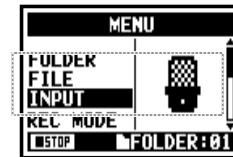
[How to make setting of <PHANTOM> power]



1
Press.



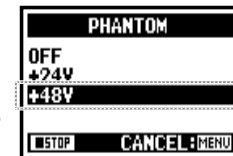
2
Select
<INPUT>
and press.



3
Select
<PHANTOM>
and press.



4
Select
the voltage
and press.



6-5 Setting up: USB connection, H4n used as an Audio Interface

The H4n can be used as a two-in/two-out USB interface at 44.1kHz or 48kHz.

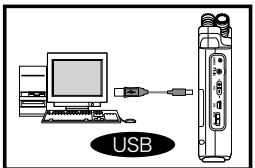
From power ON

Connect H4n to computer with USB cable.

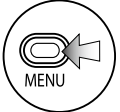
From power OFF

Using USB bus power, H4n start booting-up
Display of USB setting screen

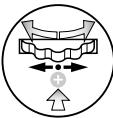
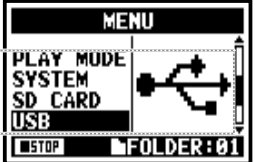
1 Connect H4n to computer with USB cable.



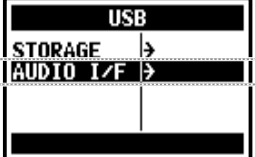
2 Press on the top screen.



3 Select <USB> and press.



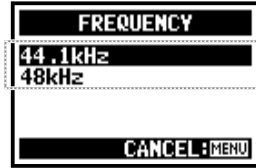
4 Select <AUDIO I/F> and press.



5 Select <FREQUENCY> and press.



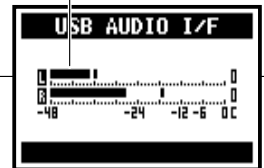
6 Select a sampling rate and press.



7 Select <CONNECT> and press.



displayed input or output level

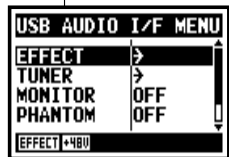


Two channels can be sent and received while it connects a computer and by using of 44.1kHz or 48 kHz.

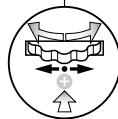
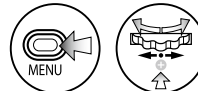
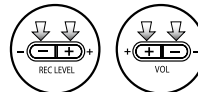
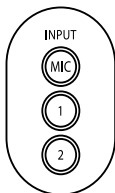


displayed a active function

- Ref.
- <EFFECT> P.083
 - <TUNER> P.075
 - <MONITOR> P.071
 - <PHANTOM> P.032
 - <PLUG-IN> P.031

[Button operation during setting and <AUDIO I/F> menu]**Press.****<AUDIO I/F> MENU**

EFFECT	Use EFFECT (only on 44.1 kHz)
TUNER	Use TUNER
MONITOR	Use MONITOR
PHANTOM	Use PHANTOM power
PLUG-IN	Use PLUG-IN power
DISCONNECT	Disconnect

**Select and press.****[You can use those buttons during setting]***** Call [MENU] and make setting***** Adjust input / output level****[Selection of input source]**

When you select an input the corresponding input button lights, confirming the selection. To turn off the input, press the corresponding input button and the light will turn off.

* When no input is selected and no input buttons are lit, you are sending no signal to the computer.

To monitor input signals, you must turn the <MONITOR> setting on.

NOTE:

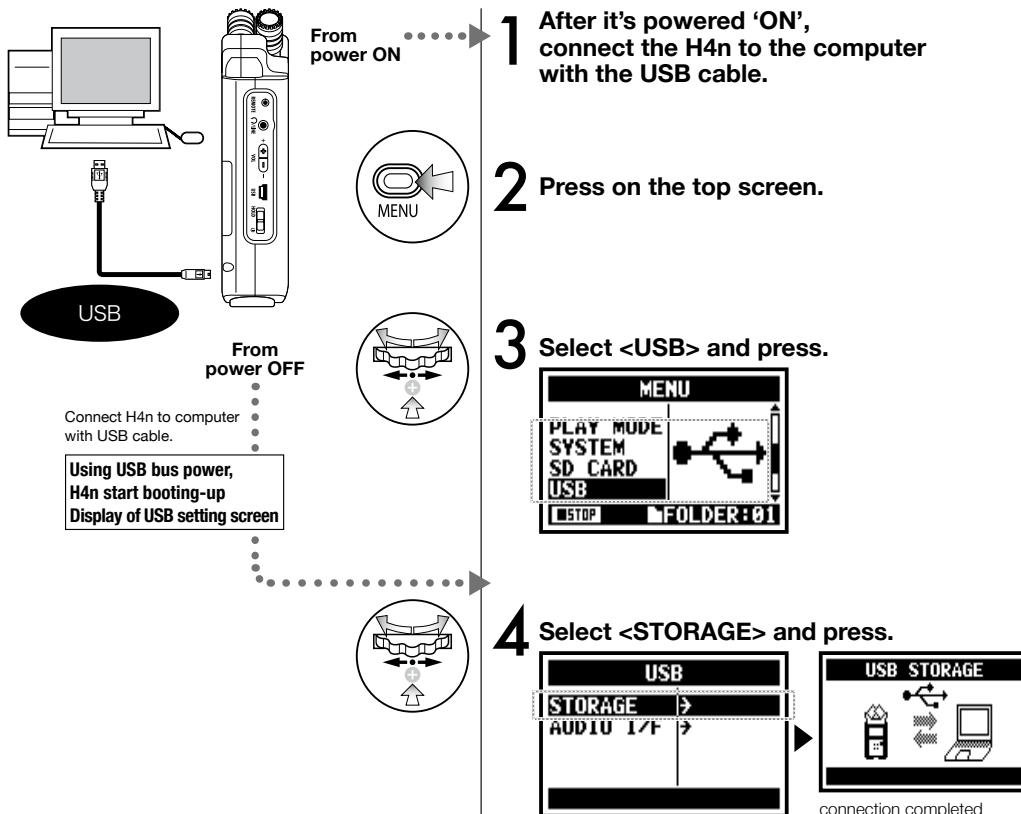
- You cannot change a sampling rate while computer is recognizing H4n as an audio interface.
- To connect as an Audio I/F, make sure that a sampling rate (step 6) matches the recording software and playback file.
- You cannot use this setting during recording and playback.

HINT:**Usage of AUDIO INTERFACE**

- You can record and playback signals directly to and from your DAW software using the H4n.
- In this mode, you can use the H4n's built-in effects on input signals.
- Effects can only be used when the sampling rate is set to 44.1kHz.
- You do not need a specific driver to use the H4n as an USB audio interface.
- When using a specific DAW, please refer to its respective user manual.

6-6 Setting up: USB connection, H4n used as a SD card reader

When you use the H4n as a SD card reader, make the following settings.



NOTE:

- Before physically unplugging USB cable (and H4n) from computer, be sure to perform the "safely remove hardware" function on the computer first. Unplugging USB cable (and H4n) without performing this function may damage files.
- Compatible operating system
Windows XP
Mac OS X (10.2 or later)

HINT:

USB bus power

USB bus power is the method to supply power from a computer through the USB cable.

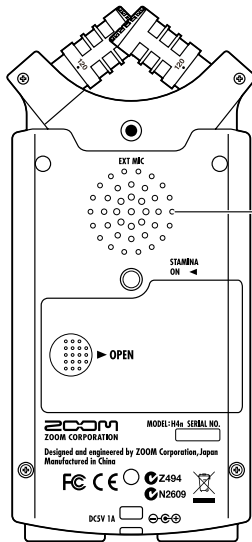
Connecting USB with the H4n power off condition, H4n automatically boots up and displays USB menu.

Usage of a SD card reader

- You can use files recorded on the H4n on your computer.
- The H4n can use audio files created on your computer.

6-7 Setting up: Built-in speaker

The H4n is equipped with a built-in mono speaker.



H4n built-in speaker

This is a mono speaker for playback. Without connecting headphones to [LINE/PHONE] jack, you can easily playback the recorded data and listen.

NOTE:

There is no output when [LINE/PHONE] jack is plugged in. When setting is the <MONITOR>, there is no output of the input signals. The built-in speaker cannot be used when recording in standby on MTR mode.

HINT:

When you can use this function:

- The FILE playback
- Using as <AUDIO I/F>.
- Nothing connected to the [LINE/PHONE] jack.

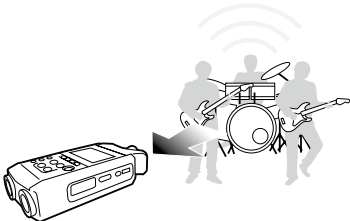
7-1 About H4n modes

There are four operational modes in H4n: STEREO/STAMINA, 4 CH (CHANNEL), MTR (MULTI TRACK) mode. You can choose the mode according to your need.

• STEREO mode

You can easily create a stereo recording via the built-in microphones or an external microphone.

The STEREO mode is convenient to record a band's live performance, acoustic instrument, voice, lecture, or a subtle soundscape. you can then transfer the file to a stereo WAV/MP3 recorder/player.



- One-pass stereo recording of live performance or rehearsal.
- Direct recording of a single instrument.
- Field recording.
- Voice memos.
- Record important points during a conference.

• STAMINA mode

This mode allows for longer battery life. STAMINA mode operation is similar to STEREO mode, but with less functions.

Continuous usage time for Alkaline batteries: approximately 11 hours (battery life can be less depending on usage).

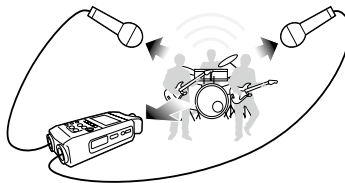
When in STAMINA mode, the H4n can only record/playback in WAV 44.1kHz/16-bit and MP3 format.

When using batteries STAMINA mode can be turned on using the stamina switch before booting up. ▶P.017

- 'Live' outside recording.
- At the conference, or the places difficult to change batteries.

• 4CH mode

In 4Ch mode, you can record two stereo signals simultaneously. You can capture both live sounds via built-in mics and direct instruments via external inputs simultaneously.

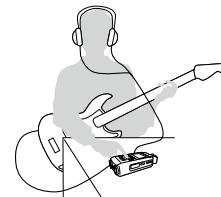


- Simultaneous recording with both line input and a microphone.
- Surround recording via front and rear microphone placement.
- Simultaneous recording of both ambient and direct sound sources.
- Record both ambient and direct sounds to add a live feel to recorded performances.

• MTR mode

You can record using effects. You can also overdub recordings and use sound files previously recorded using the H4n's other modes.

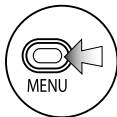
When creating a demo, you can record backing tracks at home and record instrumental tracks at the studio while listening to the backing tracks.



- Record one track at a time and then combine them.
- Overdubbing.
- Record using effects
- Mixing track levels after recording.
- Indoor or outdoor rehearsals.

7-2 Selecting a <MODE>

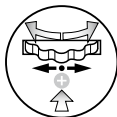
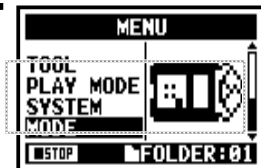
Be sure to select the appropriate mode for your application.



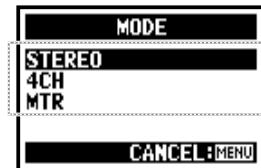
1 Press.



2 Select <MODE> and press.



3 Select among STEREO, 4CH and MTR modes and press.

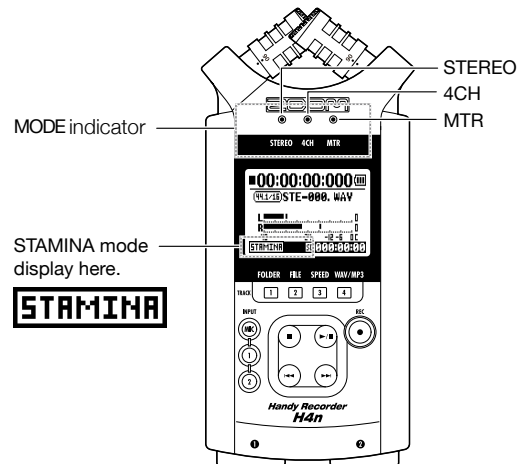


*To engage STAMINA mode, use the switch located in the battery compartment.

HINT:

Confirmation of the mode

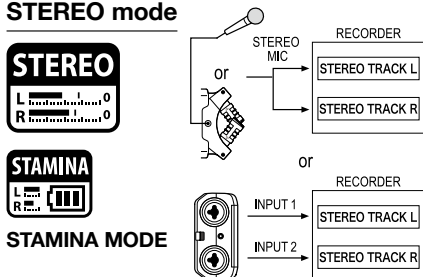
- The current mode is indicated on the FRONT PANEL by Mode Indicator LEDs.
- The H4n will power up in the same mode it was in when turned off.
- When booting up for the first time, the default mode is 'STEREO'.



7-3 Details about modes

Input and output levels as well as saving and formatting data are different in each mode.

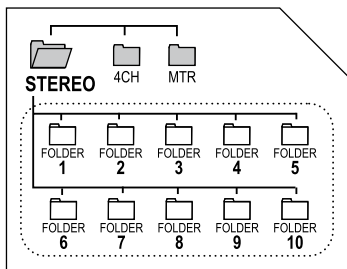
STEREO mode



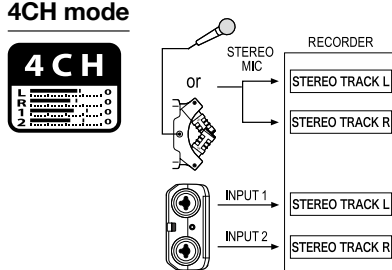
In STEREO mode, you can select 2 different inputs either INPUT[MIC] or INPUT[1] and INPUT[2], and operate them as one stereo file.

The resulting FILE is saved in one of the ten sub-folders of the STEREO folder.

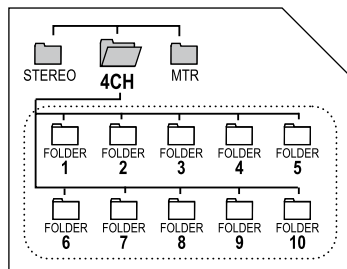
In STAMINA mode, the functions are limited to maximize the battery life time.



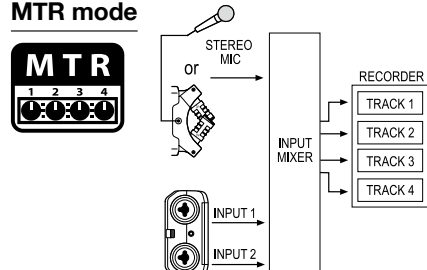
4CH mode



In 4CH MODE the H4n records two stereo WAV files: one stereo WAV file for the built-in microphones and one stereo WAV file for the inputs. These FILES are saved in one of the ten fixed folders.

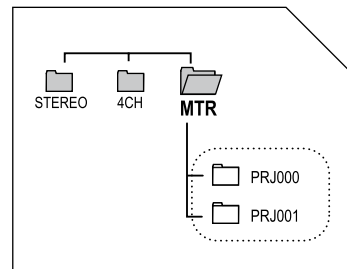


MTR mode



You can record tracks in MONO or STEREO from INPUT [1], INPUT [2] or the internal microphones. You can combine them with tracks recorded in other modes or <OVERDUB> additional tracks.

In MTR mode, project data and settings are saved as a PROJECT in the MTR folder.



8-1 <MODE> screens: STEREO and STAMINA modes



• Explanation of the top screen

Display of recorder's condition

STOP

Recording Standby **REC**

blink REC [REC] button blinks REC [REC] button lights on

PLAY **PAUSE**

 blink

FILE FORMAT

File format during selecting, recording and playback.

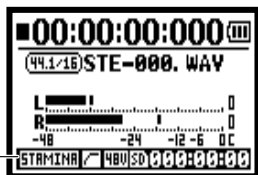
- WAV FILE: Hz/bit
- MP3 FILE: bit rate

96k24 Display example of 96kHz/24bit

128kbps Display example of MP3 128kbps

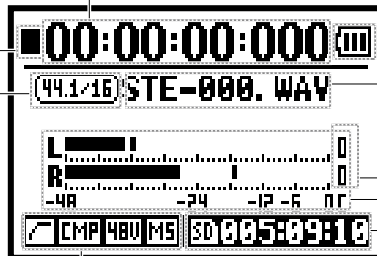
STAMINA MODE

Stamina Icon



Counter

Recording lapse and playback lapse:
Display: 00(time):00(minute):00(second):000(1/1000second)



Indicator of option settings: ON or OFF

When each optional function is ON, display says following:

- <LO CUT> function P.068
- <COMP/LIMIT> function P.069
- <PHANTOM> power source P.032
48V/24V
- <MS STEREO MATRIX> P.073

REMAINING BATTERY LIFETIME during battery running

When the display of "Low Battery" is shown, it is time to change battery.

FILE NAMES

FILE NAMES during selecting, recording and playback work.
If there is no file in any folder, the screen says 'No Data'.

CLIP METER

The clip meter light turns on when the recording and playback level reach 0dB and remains lit until the file ends or the stop button is pressed.

LEVEL METER

Displays the recording and playback level.

REMAINING RECORDING TIME

Remaining recording capacity time on SD card.

8-2 <MODE> screen: 4CH mode



• Explanation of the top screen

Display of recorder's condition

STOP

Recording Standby ● **REC**

blink [REC] button blinks [REC] button lights on

▶ **PLAY** || **PAUSE**

blink blink

FILE FORMAT

File format during selecting, recording and playback.

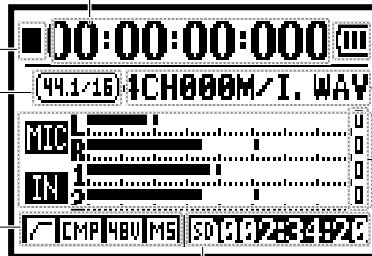
Indicator of option settings: ON or OFF

When each optional function is ON, display says following:

- <LO CUT> function P.068
- <COMP/LIMIT> function P.069
- <PHANTOM> power source 48V/24V P.032
- <MS STEREO MATRIX> P.073

Counter

Recording lapse and playback lapse:
 Display: 00(time):00(minute):00(second):000(1/1000second)



REMAINING RECORDING TIME

Remaining recording capacity time on SD card.

REMAINING BATTERY LIFETIME during battery running

When the display of "Low Battery" is shown, it is time to change battery.

FILE NAMES

FILE NAMES during selecting, recording and playback work.

If there is no file in any folder, the screen says 'No Data'.

CLIP METER

The clip meter light turns on when the recording and playback level reach 0dB and remains lit until the file ends or the stop button is pressed.

INPUT SOURCE and LEVEL METER

Displays the recording and playback level corresponding to each input source.

[MIC]Input from either the built-in microphones or an external stereo microphone

[IN]Input from INPUT [1] and INPUT [2]

8-3 <MODE> screen: MTR mode



• Explanation of the top screen



Display of recorder's condition

STOP
 blink only when recording [ALWAYS NEW] setting

REC
 [REC] button lights on

Recording Standby
 blink only when recording [ALWAYS NEW] setting

PAUSE
 blink only when recording <ALWAYS NEW> setting

PLAY

TRACK NUMBER

During recording standby operation the track or its icon is highlighted.

② TRACK MENU ICON

This is where track settings like 'volume,' 'pan,' 'stereo or mono' are made. Selecting this icon with the jog dial will access the track menu.

P.059

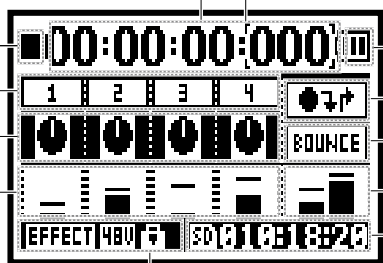


LEVEL METER

This displays the recording and playback level corresponding to each track 1-4.

① Counter

Recording lapse and playback lapse:
 Display: 00(time):00(minute):00(second):000(1/1000second)



Indicator of option settings: ON or OFF

When each optional function is ON, display says following:

EFFECT <EFFECT> function P.081

48U <PHANTOM> power source P.032
 48V/24V

PROTECT <PROTECT> function P.125

REMAINING RECORDING TIME

Remaining recording capacity time on SD card.

Counter Function: Ref. P.102
 Appoint time

REMAINING BATTERY LIFETIME during battery running

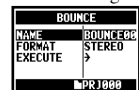
When the display of "Low Battery" is shown, it is time to change battery.

③ AUTO PUNCH IN and AUTO PUNCH OUT ICONS

Selecting this icon brings up the PUNCH IN/ PUNCH OUT settings.
 The icon only appears when recording in OVERWRITE mode. P.058

④ BOUNCE ICON

Selecting this icon brings up BOUNCE settings. P.123

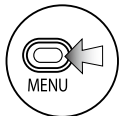


L R LEVEL METER

Displays the master left and right output levels

8-4 <MODE> screen: MAIN MENU

The Menu icon list is displayed by [MENU] button.




1 Press.



2 Select items and press.

CANCEL:
To return back to the top, press [MENU] button more than 2 seconds.




STEREO mode

<FOLDER>



<FILE>



<INPUT>



<REC>



<TOOL>



STAMINA mode

<FOLDER>



<FILE>



<INPUT>



<REC>



4CH mode

<FOLDER>



<FILE>



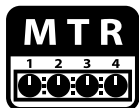
<INPUT>



<REC>



<TOOL>



MTR mode

<PROJECT>



<FILE>



<EFFECT>



<INPUT>



<REC MODE>



<PLAY MODE> <SYSTEM> <SD CARD> <USB> <MODE>



<PLAY MODE> <SYSTEM> <SD CARD> Set STAMINA mode with the STAMINA switch before starting the unit when operating with battery power. **P.019**

<MIXER> <PLAY MODE> <SYSTEM> <SD CARD> <USB> <MODE>

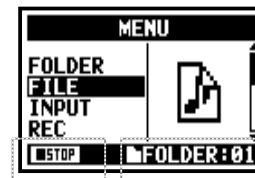


<TOOL> <SYSTEM> <SD CARD> <USB> <MODE>



Display at the bottom of Menu screen

In the recording and playback menu, the current recording condition is displayed at the bottom left of the screen.



On the right bottom of the screen the current folder number is displayed (On Stereo, 4ch and Stamina mode).



In MTR mode, the current project name is displayed.

- STOP** Stop
- PAUSE** Pause (playback)
- PLAY** Playback
- REC** Recording Standby / Pause
- REC** Recording Standby
On MTR mode and recording on OVERWRITE
- REC** Recording

9 Option: Remote control operation

When you use the optional remote controller, you can operate the H4n from a distance.

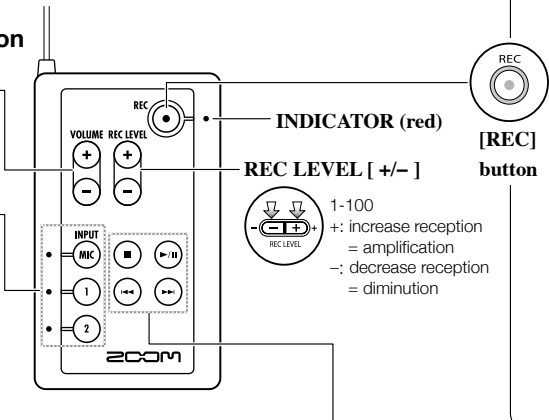
Remote control button operation

VOLUME [+/–]

0-100
 +: increase (higher)
 -: decrease (lower)

INPUT buttons, [MIC] [1] [2] AND INDICATORS (green, yellow, red)

Select the input source
 * the indicator corresponding to the button shows input condition.
 Green : The input source selected
 Yellow : The level of the input is over -6dB.
 Red : The input is clipping



REC LEVEL [+/–]

1-100
 +: increase reception = amplification
 -: decrease reception = diminution

Recording and placing marks.

STEREO	Stop	Engages recording standby condition and counter resets to 0.
4 CH	Recording Standby	Start recording and the counter begins to move
STAMINA	Recording	Place a mark (only for WAV FILE)
REC	Playback	

* This can be used only when the recording standby track available.

MTR	Set to overwrite recording	
STEREO	Stop	Engage recording standby condition
4 CH	Record, Recording Standby	Stop recording (You can continue playback while recording)
STAMINA	Playback	Starts recording and sets the counter to 0
MTR	Set always new recording	
STEREO	Stop	Stop recording and the counter stops
4 CH	Recording Standby	Start recording and the counter begins to move

LOCATOR buttons

[FF], [REW] buttons

STEREO	Stop	Press for less than one second
4 CH	Playback	[FF] move to next file [REW] returns to the beginning of the file However if there is a marker in a WAV file, the button moves to the marking place.
STAMINA	Playback temporary stop	Press for more than one second
MTR	Stop	Press for less than one second
MTR	Playback	[FF]: Moves forward through file in one second increments [REW]: Returns to the beginning of the file
MTR	Playback temporary stop	Press for more than one second
		Scans through file in forward or reverse direction.

[STOP] button

STEREO	Record, Recording Standby, Temporary stop	Stop recording and return to 0
4 CH	Playback temporary stop	Stop playback and the counter stops
STAMINA		
MTR	Recording	Stop recording and the counter stops
MTR	Playback	Stop playback and the counter stops
MTR	Recording temporary stop	Stop each movement
MTR	Playback temporary stop	

[PLAY/PAUSE] button

STEREO	Stop	Start playback and the counter begins to move
4 CH	Recording standby	Starts recording
STAMINA	Recording, temporary stop	Restarts recording
STAMINA	Playback, temporary stop	Starts playback
MTR	Stop	Start playback
MTR	Recording	While overwrite setting : Stops recording While always new setting : Pauses recording
MTR	Recording standby	Start recording and the counter begins to move
MTR	Playback	Pause playback

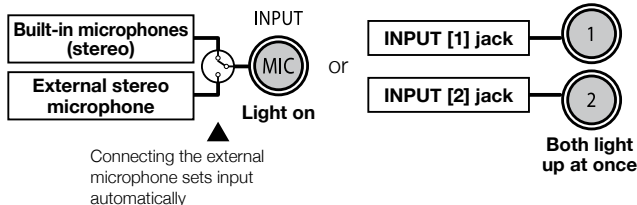
Operations

1-01 Setting / Recording: Set input source and recording level

Control settings for the targets, built-in microphones or external input jacks.

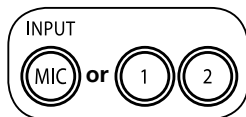
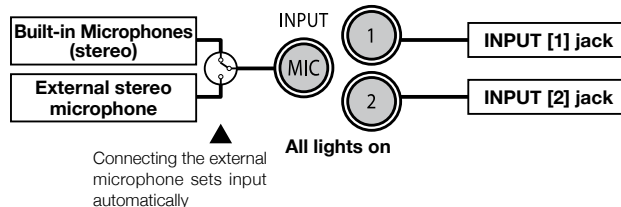
STEREO MODE

Use the stereo input source of either [MIC] or INPUT [1] [2].



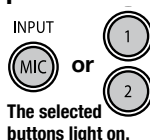
4CH MODE

Use both [MIC] and INPUT [1] [2] stereo input.

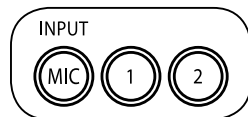
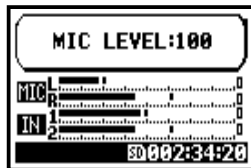
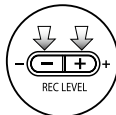


1 Select INPUT and press.

* Selection is available at any time during Stop, Recording Standby or Recording.



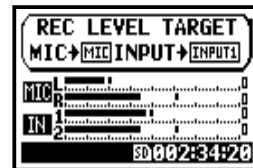
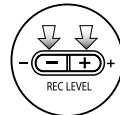
2 Press REC LEVEL and adjust the levels.



1 Select INPUT and press.

The recording level selected is displayed

2 Press REC LEVEL and adjust the levels.



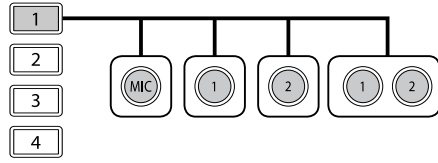
HINT:

On the top screen of the 4CH mode, press REC LEVEL button, and display "REC LEVEL TARGET" appears. Select the input and press.

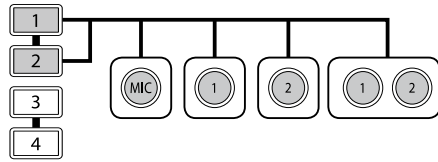
MTR MODE

Any of tracks 1-4 can be set for mono or stereo input.

SELECT the input per track one by one and adjust.

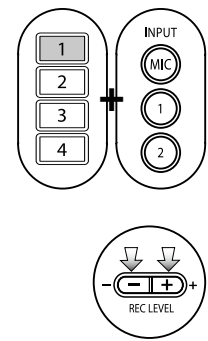


SELECT the input to 2 tracks and adjust.



TRACK 1	TRACK 2	TRACK 3	TRACK 4
MONAURAL	STEREO	MONAURAL	MONAURAL
STEREO		MONAURAL	MONAURAL
MONAURAL	MONAURAL	STEREO	
STEREO		STEREO	

Use the REC LEVEL



1 Press the selected track and input button.

2 Press REC LEVEL and adjust the level.

HINT:

In MTR mode, you can record multiple tracks in multiple passes. You can also send any input to any track.

1-02 Setting / Recording: Recording in STEREO and STAMINA mode

These are the steps to begin recording in STEREO or STAMINA mode.

Setting / Recording: Recording in STEREO and STAMINA mode

[RECORDING DIRECTION]

Confirmation of the mode.
(Stereo mode)

* Change the FILE setting.
• REC FORMAT,
• FILE NAME TYPE

* Use the recording functions.
AUTO REC/STOP, PRE REC,
REC LEVEL AUTO


* Use METRONOME

1. Recording standby
2. Select the input source
3. Adjust the recording level of the source

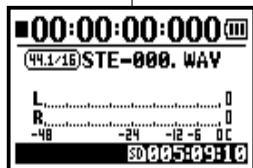
Recording
4. Start recording: Temporary stop, Start recording again, Put a mark

5. Recording completes

*marks mean you can record without those settings.

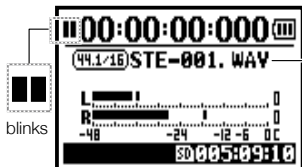


Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



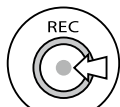
STEREO MODE TOP

1 [RECORDING STANDBY] press.

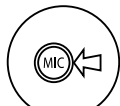


a new file name here

blinks



light blinks

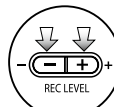


light on



2 Select an input source and press.

Using built-in microphones, press [MIC], using external inputs press INPUT [1] and INPUT [2].



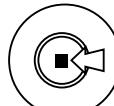
REC LEVEL



REC



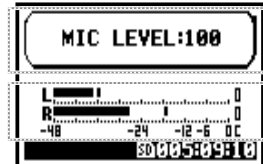
light on



light off



3 Adjust the recording level of the input source.



4 [REC START] press.



The number figures rotate.

5 [REC FINISH] press.



The counter returns back to 0.

[TEMPORARY STOP]



Counter doesn't return to 0.

[RECORDING AGAIN]



You can start recording from the position you stopped on the same file.

HINT:

<REC FORMAT>

In STEREO mode you can record in 19 different file formats using WAV and MP3. Recording format must be selected before recording of a file begins.

<FILE NAME> change

Recorded files are named automatically. You can choose from two formats:

<DEFAULT> and <DATE>.

<DEFAULT> : STE-xxx

<DATE> : 090531-xxx

* The recording date is written.

The initial format is <DEFAULT>

MARK

When the recording format is WAV, you can mark your file by pressing the [REC] button while recording. You can move swiftly to the marked position during playback. When you make a temporary stop on WAV FILE, the mark will be placed at the stop position.

NOTE:

While recording and playback, no <REC FORMAT> change nor FILE NAME TYPE change is possible.

Ref.

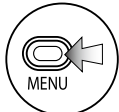
<REC FORMAT>	P.051	<FILE NAME>	P.052
Mark setting	P.096	<METRONOME>	P.079
<AUTO REC>	P.065	<PRE REC>	P.067
<REC LEVEL AUTO>	P.070		

1-03 Setting / Recording: Recording format <REC FORMAT>



Choose recording file settings <REC FORMAT> before recording.

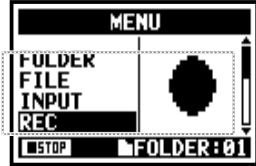
STEREO 4CH Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



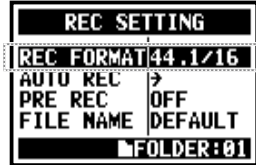
1 Press.



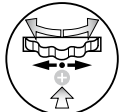
2 Select <REC> and press.



3 Select <REC FORMAT> and press.



"Short cut"
Pressing TRACK [4] on the top screen.



4 Select one and press.



default;
WAV44.1 kHz/16bit.

NOTE:

How to use WAV and MP3 format

- The WAV FILES with no compression are used for high quality sound recording. Because data is not compressed, the volume of the file will increase compare to MP3 format.
- MP3 FILES decrease the sound quality because of data compression, but are useful to save SD card capacity and to record much more sounds.

HINT:

VARIETY OF WAV FILES

Formats are: 44.1/48/96 kHz indicates the sampling rate of the analog-to-digital conversion. 16/24-bit indicates the bit depth of the analog-to-digital conversion.

The larger the number, the higher the sound quality, but the files that are created are larger as well.

The WAV files recorded on STEREO/4CH/STAMINA mode correspond to BWF (Broadcast Wave Format) and include marks and production date.

VARIETY OF MP3

Select the bit rate which indicates information volume per minute. The bigger the number, the lower the rate of compression and the higher the sound quality. The higher compression MP3 will occupy less space on an SD card

VBR (Variable Bit Rate) means the bit rate (recording quality) is automatically adjusted based on input information.

REC FORMAT	
STEREO mode	
WAV	44.1kHz/16bit
	44.1kHz/24bit
	48kHz/16bit
	48kHz/24bit
	96kHz/16bit 96kHz/24bit
MP3	48kbps
	56kbps
	64kbps
	80kbps
	96kbps
	112kbps
	128kbps
	160kbps
	192kbps
	224kbps
256kbps	
320kbps	
VBR	
4CH mode	
WAV	44.1kHz/16bit
	44.1kHz/24bit
	48kHz/16bit
	48kHz/24bit

1-04 Setting / Recording: File name <FILE NAME>



When recording, a file name is automatically assigned. To change that, take the following steps.

Press the [MENU] button for more than 2 seconds, and start operation from the top screen.

1

Press.

2

Select <REC> and press.

3

Select <FILE NAME> and press.

4

Select and press.

The initial notation is <DEFAULT>

File Name	
STEREO mode:	
<DEFAULT>	STE-xxx.wav (mp3) : 'STE-' 3 figures, extension * <MONO MIX> setting MONO-xxx.wav(mp3) : 'MONO' 3 figures, extension
<DATE>	090531-xxx.wav(mp3) : year, date yymmdd-3 figures, extension
4CH mode:	
No change	4CH-xxxM.wav Record file of the built-in microphones: '4CH-' 3 figures 'M' extension 4CH-xxxI.wav Record file of the external input: '4CH-' 3 figures 'I' extension
MTR mode:	
STEREO FILE	TRK1-xx.wav : 'TRK' track number- 2 figures, extension
MONO FILE	* On stereo tracks put the track number like [1] [2] using L and R.

NOTE:

- You can set the DATE type only on STEREO mode.
- You can use other file names on STEREO and MTR mode. Those setting is operated on <FILE RENAME>

Ref.

<FILE RENAME>

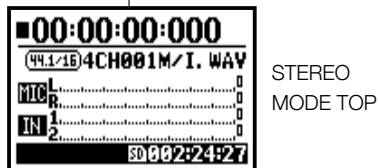
P.109

1-05 Setting / Recording: Recording on 4CH mode

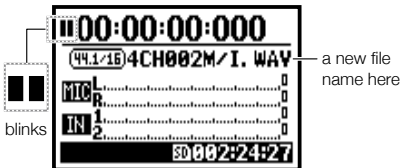
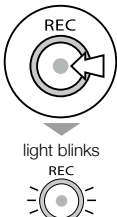
This is the method to record 4 channel stereo sounds coming from the built-in mic and the external input jack.

- [RECORDING DIRECTION]**
- Change to 4CH mode
 - * Change the FILE setting.
 - REC FORMAT
 - Use the recording functions:
 - AUTO REC/STOP
 - PRE REC
 - REC LEVEL AUTO
 - * Use the METRONOME
1. Recording standby.
 2. Select the input source.
 3. Adjust the recording level of the source.
- Recording operation.
 4. Start recording
 - temporary stop
 - record again
 - put a mark on a file.
 5. Recording completes.

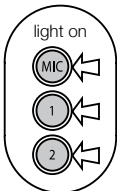
4CH Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



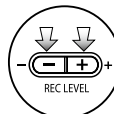
1 [RECORDING STANDBY] press.



2 [Adjust the recording level] Select the input sources and press.



* When you use the built-in microphones: select [MIC]
Connection from outside: INPUT [1] and [2]



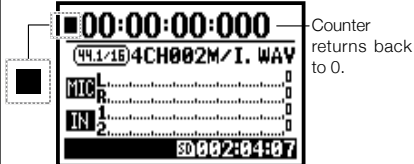
3 Adjust the recording level of the input sources.



4 [START RECORDING] press.



5 [COMPLETE RECORDING] press.



*You can record skipping this step.

[TEMPORARY STOP]



Counter doesn't return back to 0.

[RECORDING AGAIN]



Continue recording from the position stopped on the same file.

HINT:

FILE NAME

On 4CH mode the input from the built-in and the external microphones is saved separately as STEREO WAV FILE.

Those 2 files are always administered as one pair and named as the following depending on the input:

[MIC] file: 4CHxxxM.wav

INPUT [1] [2] file: 4CHxxxI.wav

On screen 2 files noted 'M/I' at one time.

* You cannot change the file name.

<REC FORMAT> CHANGE

If you want change, operate before recording.

Mark

While the recording format is WAV, if you press [REC] button during recording operation, the mark is put on the file and you can move swiftly to the marked position during playback.

When you pause, that becomes the mark position.



file name

NOTE:

While recording and playback, no <REC FORMAT> is possible.

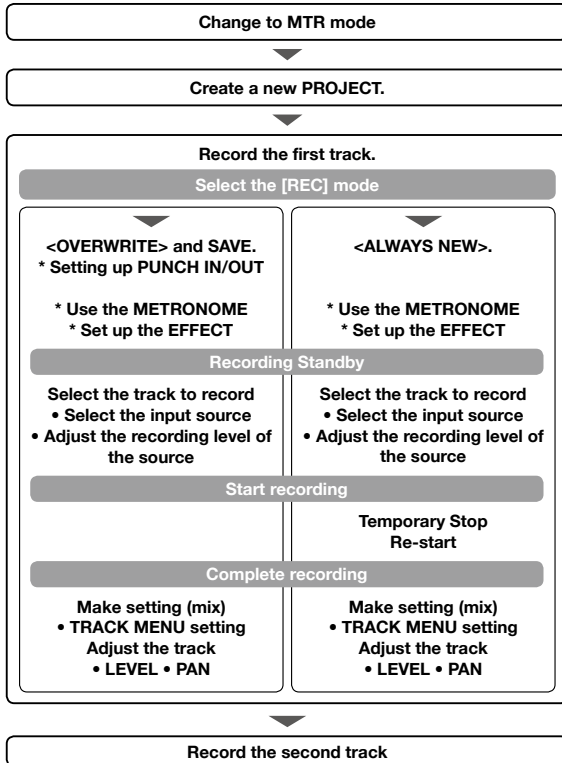
Ref.

<REC FORMAT>	P.051	<FILE NAME>	P.052
Mark setting	P.096	<METRONOME>	P.079
<AUTO REC>	P.065	<PRE REC>	P.067
<REC LEVEL AUTO>	P.070	Mode change	P.038

1-06-1 Setting / Recording: Recording in MTR mode

Using multiple tracks, you can combine mono and stereo recordings.

[RECORDING DIRECTION]

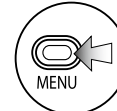


* This means you can record without this setting.

Change to <REC MODE>, <OVERWRITE/ ALWAYS NEW>



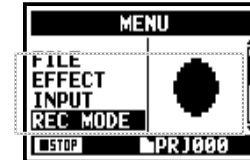
Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



1 Press.



2 Select <REC MODE> and press.



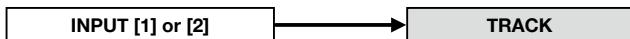
3 Select either <OVERWRITE> or <ALWAYS NEW> and press.



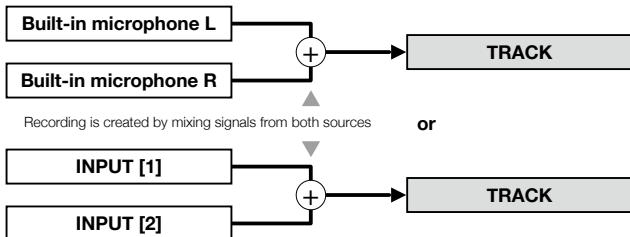
About INPUT SOURCE and TRACK

Only one recording track

1. Input source comes from either INPUT [1] or INPUT [2].

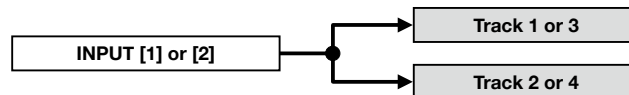


2. Input sources come from both [MIC]s or INPUT [1] & [2].



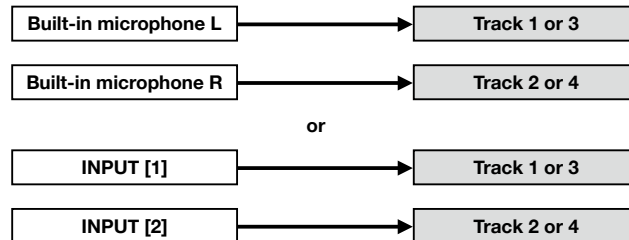
Two recording tracks

1. Input source comes from either INPUT [1] or INPUT [2].



The same signals are sent to both tracks.

2. The input source comes from either [MIC] or INPUT [1] [2].



1-06-2 Setting / Recording: Recording <OVER WRITE> in MTR mode



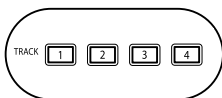
You can select from two recording modes.

Using the <OVERWRITE> mode, you can overwrite new sounds on the existing file.

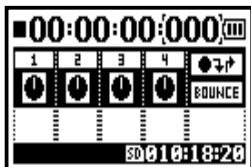


Press the [MENU] button for more than 2 seconds, and start operation from the top screen.

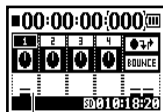
Choose the appropriate settings for your application
Input setting ... P.055
Recording functions ... P.059-



1 Select the TRACK.

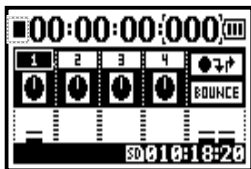


MTR MODE TOP



— displays input level

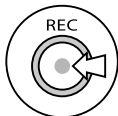
2 Press.



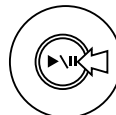
Counter won't be reset to 0 when using.

1

The selected 'TRACK' light on.



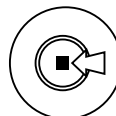
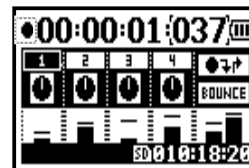
light on
REC



light on



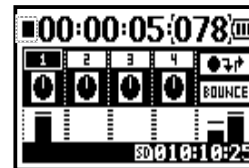
3 [START RECORDING] press.



light off



4 [STOP RECORDING] press.



Counter doesn't return back to 0.

You can get back to the beginning of the file with the REW button. This will allow you to listen to what you've just recording by pressing the PLAY/PAUSE button.

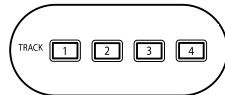
1-06-3 Setting / Recording: Recording <ALWAYS NEW> in MTR mode



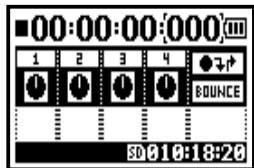
In ALWAYS NEW, a new file is made whenever it records.

MTR Press the [MENU] button for more than 2 seconds, and start operation from the top screen.

Choose the appropriate settings for your application
 ☞ Input setting ... P055
 ☞ Recording functions ... P059-

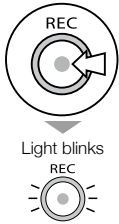


1 Select the TRACK.

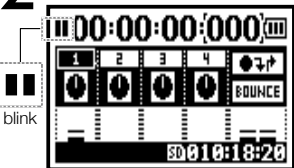


MTR MODE TOP

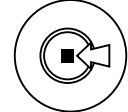
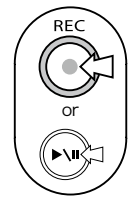
1
The selected TRACK light on.



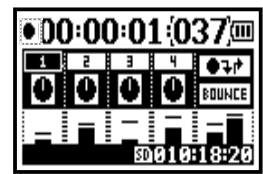
2 Press.



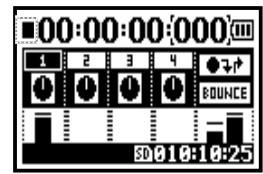
Counter won't be reset to 0 when using.



3 [START RECORDING] press.



4 [STOP RECORDING] press.



Counter return back to 0.

The PLAY/PAUSE button will allow you to listen back to the recorded file.

Setting / Recording: Recording <ALWAYS NEW> in MTR mode

1-07 Setting / Recording: TRACK MENU in MTR mode

This is an exclusive menu available only in MTR mode to set a track.

Link tracks together, create a stereo track, or you can create a special setting for output effects.



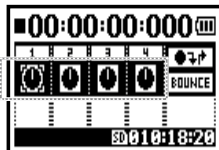
Press the [MENU] button for more than 2 seconds, and start operation from the top screen.

Select a target project and startP.119

Select TRACK MENU

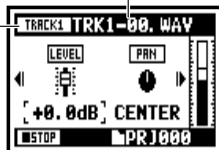


1 On the top screen select 'TRACK MENU ICON' and press.



TRACK MENU icon

TRACK MENU file names allocated to tracks

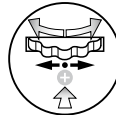


currently selecting track

HINT LEVEL

Set the output level of a track
Setting value: Mute, -48.0dB _ +12.0dB
Default: 0.0dB

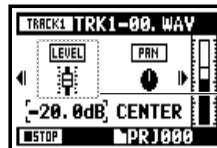
Adjust the output level of a track



Select <LEVEL> and press.



Set the value and press.

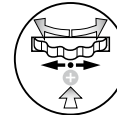


fader icon changes

HINT: PAN

Set the balance of Left and Right position of the tracks
Setting value: L100 _ C _ R100
Default: C (Center)

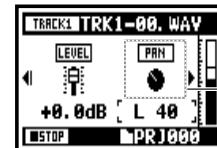
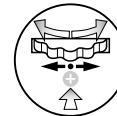
Adjust the output pan of a track



Select <PAN> and press.



Set the value and press.



pan icon changes



NOTE:

Setting for <STEREO LINK>, <FILE> and <KARAOKE> are not available during recording, playback and also when tracks are armed.

HINT: STEREO LINK

Setting stereo link on creates a stereo track from tracks 1 and 2 or 3 and 4. Setting stereo link off creates a mono track. Setting value: ON/OFF Default: OFF

NOTE:

- You can only playback a mono file on 'MONO TRACK' and a stereo file on 'STEREO TRACK'.
- When <STEREO LINK> is turned on, no file will be assigned to the track, and "NO DATA" will be displayed.
- When you change from 'ON' to 'OFF', the setting of <PAN> returns to the previous one.
- When you change from 'OFF' to 'ON', the setting of <LEVEL> and <PAN> return to 'DEFAULT'.

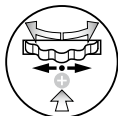
NOTE:

- You cannot record on the <KARAOKE> track.
- When the <STEREO LINK> turns on automatically with a monaural track setting, it turns to "NO DATA" condition.
- When the <KARAOKE> track has been set, you cannot make the other tracks <KARAOKE>.

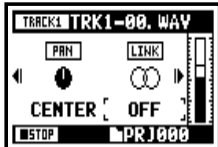
HINT:

You can only use KARAOKE setting on one pair of stereo tracks; either 1 and 2 or 3 and 4. In KARAOKE mode, you can set KEY CONTROL and CENTER CANCEL operations. Setting value: ON/OFF Default: OFF

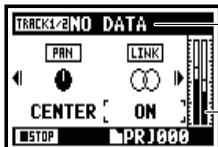
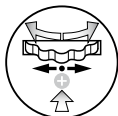
Setting <STEREO LINK>



Select <STEREO LINK> and press.



Set the value and press.



When change the format, the display says "NO DATA".

The display of 'LEVEL METER' changes 'STEREO'.

Allocate files to a track



Select <FILE> and press.



Select the <FILE> to be allocated and press.



Display for the file list available to allocate with corresponding file style.

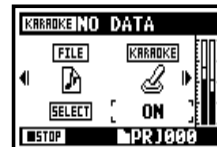
Setting <KARAOKE>



Select <KARAOKE> and press.



Set the value and press.



1-08-1 Setting / Recording: Re-recording, <PUNCH IN/OUT> automatic

This function, <PUNCH IN/OUT>, allows you to partially re-record a recorded file.
Here we explain how to start <PUNCH IN> and end <PUNCH OUT> automatically.



Press the [MENU] button for more than 2 seconds, and start operation from the top screen.

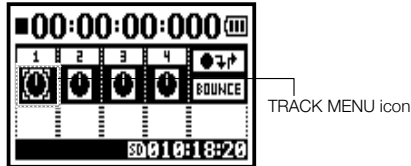
Change from <REC MODE> to <OVERWRITE>P.055

Allocate files to a track

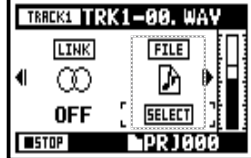
Set the recording start position, <PUNCH IN>



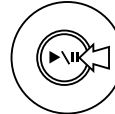
1 On the top screen select 'TRACK MENU ICON' and press.



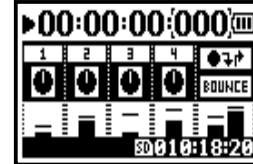
2 Select <FILE> and press.



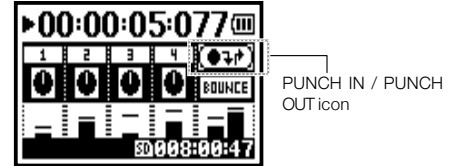
3 Select any desirable <FILE> and press.



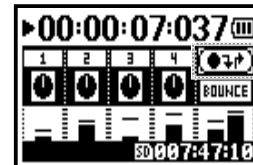
4 Press [START PLAYBACK].



5 Select PUNCH IN / PUNCH OUT ICON and press.



6 Find the desirable position for 'PUNCH IN' and press.



Icon interchanges

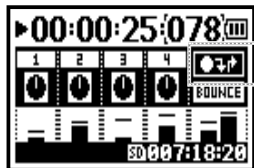
NOTE

Setting available on MTR mode and <OVERWRITE> recording.

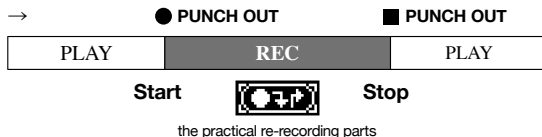
Set the recording end position, <PUNCH OUT>



7 Press the desirable position for 'PUNCH OUT'.



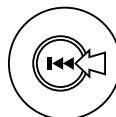
The PUNCH OUT setting confirmed



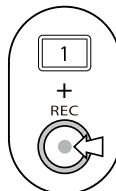
HINT:

- You can set the position for <PUNCH IN / OUT> while stopped by using the counter. First set each time and move the cursor to <PUNCH IN / OUT>, and then press [DIAL].
- During <PUNCH OUT> _ Step 7-, if you press [DIAL] again, all the setting will be cancelled.

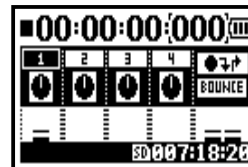
Re-recording



8 Rewind the file to the head (Counter: 0) or to the position to start re-recording 'PUNCH IN'.

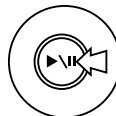


9 Press TRACK [1], Recording Standby.

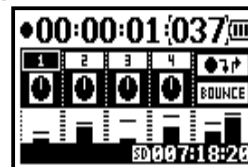


1

[1] When in punch in / out mode, the light is on during recording and blinks during record standby.



10 Press TRACK [1] [PLAYBACK _ RECORDING].



1

When the track reaches the 'PUNCH IN' point, the REC light will turn on, recording will start.

[1] When the track reaches the 'PUNCH OUT' point, the light will blink and recording will stop.

Ref. Apointing the time using a counter **P.102**

1-08-2 Setting / Recording: Re-recording, <PUNCH IN/OUT> manual

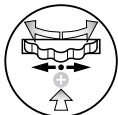
Using [OVERWRITE] recording operation in MTR mode, you can manually punch in and out. Press [REC] button during playback, from that pressed position you can start re-recording.



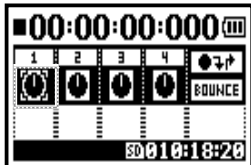
Press the [MENU] button for more than 2 seconds, and start operation from the top screen.

Change from <REC MODE> to <OVERWRITE>P.055

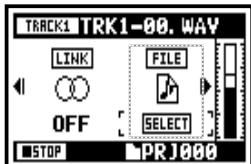
Allocate files to a track



1 On the top screen select 'TRACK MENU ICON' and press.



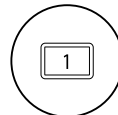
2 Select <FILE> and press.



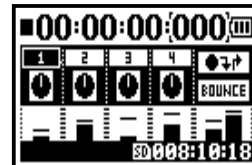
3 Select any desirable <FILE> and press.



Playback



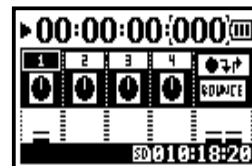
4 Press [RECORDING STANDBY].



1 light on



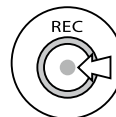
5 Press [START PLAYBACK].



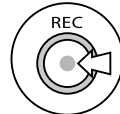
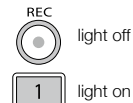
Re-recording (Manual <PUNCH IN/OUT>)



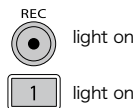
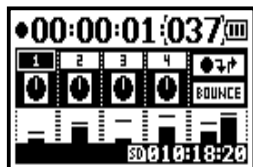
6 Performance (Not recording).



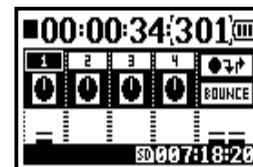
9 Press [FINISH RECORDING].



7 Press [START RECORDING].



10 Press [PLAYBACK FINISH].



8 Performance (Recording).



Re-recording



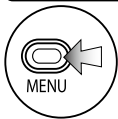
2-01-1 Recording function <AUTO REC>



The H4n can detect when the input level surpasses your predetermined level, and can automatically start recording from the recording standby position.

Recording function <AUTO REC>

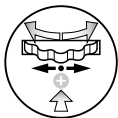
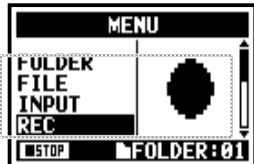
STEREO **4 CH** Pressing the [MENU] button long for two seconds, start to operate from the top screen of the MODE.



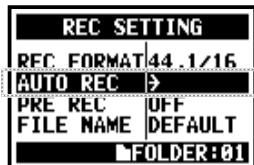
1 Press.



2 Select <REC> and press.



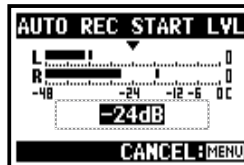
3 Select <AUTO REC> and press.



4 [START LEVEL SETTING] Select <START LVL> and press.



5 Adjust the level.



Set the input level to start recording automatically.



6 Select <ON/OFF> and press.



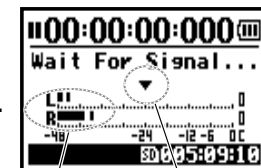
7 Select <ON> and press.



HINT:

Display of "Wait for Signal"

While <AUTO REC> operation is on, the display of "Wait for Signal" appears during recording standby. That watches whether the present input level goes over the recording start level.



Present input level Start level

During "wait for signal" you can also start recording manually by pressing the REC button.

NOTE:

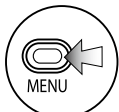
- You cannot use this setting during recording and playback.
- You cannot use this function together with <REC LEVEL AUTO>, <PRE REC> and <PRE COUNT>.

2-01-2 Recording function <AUTO REC STOP>

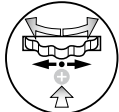


When <AUTO REC> is on and recording, the H4n will automatically stop recording when the input level goes below a predetermined level.

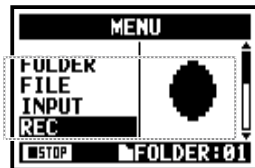
STEREO 4 CH Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



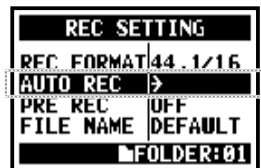
1 Press.



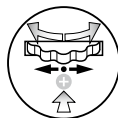
2 Select <REC> and press.



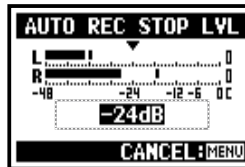
3 Select <AUTO REC> and press.



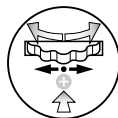
4 [STOP LEVEL SETTING] Select <STOP LVL> and Press.



5 Adjust the level.



Set the input level at which recording will stop



6 Select <AUTO STOP> and press.



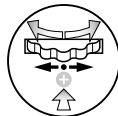
HINT:

When<[AUTO REC STOP]> is on, 'STOP LEVEL' display appears during recording.



Stop level

Present input level



7 Select the time setting.



Select from 1-5 seconds to stop recording after the signals have become lower than the STOP LEVEL.



NOTE:

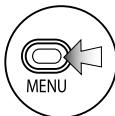
- You cannot use this function during recording and playback.
- When <AUTO REC STOP> is on, you can finish recording with pressing [STOP] button.

2-02 Recording function <PRE REC>



The <PRE REC> setting can be initialized by pressing the [REC] button, automatically adding the previous 2 seconds to your recording.

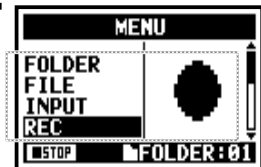
  Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



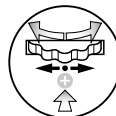
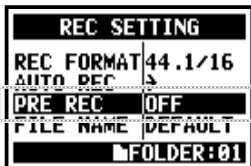
1 Press.



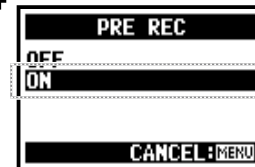
2 Select <REC> and press.



3 Select <PRE REC> and press.



4 Select <ON> and press.



HINT

In PRE REC mode the H4n will pre-record audio two seconds before the record button is pressed.




NOTE

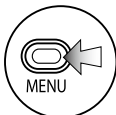
- You cannot use this setting during recording and playback.
- When recording on 96 kHz, 4CH mode, the maximum PRE REC time is one second.
- You cannot use this function together with AUTO REC and PRE COUNT.

2-03 Recording function <LO CUT>



The <LO CUT> filter setting allows you to eliminate wind or blowing noises.

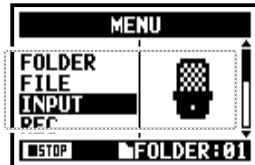
   Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



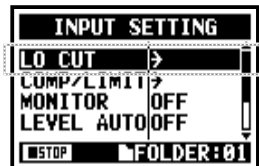
1 Press.



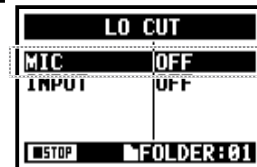
2 Select <INPUT> and press.



3 Select <LO CUT> and Press.



4 Select the setting input source.



5 Select the cutoff frequency.



HINT:

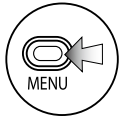
- You can Select the <LO CUT> filter among eleven frequencies, such as OFF, 80, 98, 115, 133, 150, 168, 185, 203, 220, and 237 Hz. When selecting higher numbers, you should verify the outcome before recording.
- The smaller the number, the lower the cut-off frequency.

2-04 Recording function <COMP/LIMIT>



The <COMP / LIMIT> setting can compensate for volume differences. For each input source, low level input signals are lifted up and high level input signals are controlled down when recording.

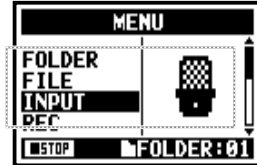
STEREO **4CH** Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



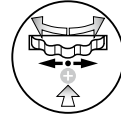
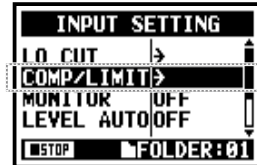
1 Press.



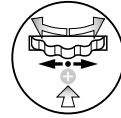
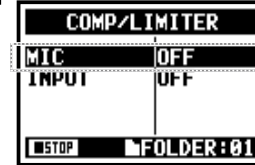
2 Select <INPUT> and press.



3 Select <COMP/LIMIT> and press.



4 Select the setting input source.



5 Select the setting target.



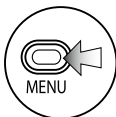
HINT:

OFF	Compressor and Limiter are off	
COMP1 (GENERAL)	Standard compressor	The compressor can compress higher level sounds and raise the level.
COMP2 (VOCAL)	Compressor suitable for vocal	
COMP3 (DRUM)	Compressor suitable for drum and percussion	
LIMIT1 (GENERAL)	Standard limiter	The limiter can compress when the input signals go over the fixed level
LIMIT2 (CONCERT)	Limiter suitable for 'live'	
LIMIT3 (STUDIO)	Limiter suitable for 'studio' recording	

2-05 Recording function <REC LEVEL AUTO>



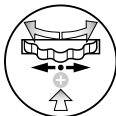
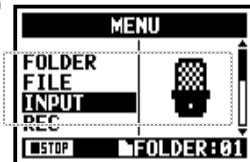
This function automatically sets the level for recording.



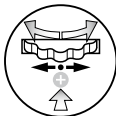
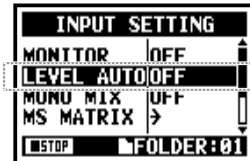
1 Press.



2 Select <INPUT> and press.



3 Select <LEVEL AUTO> and press.

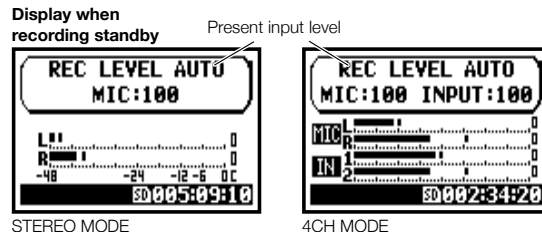


4 Select <ON>

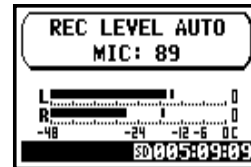


HINT:

When <REC LEVEL AUTO> is used, the unit automatically determines the recording levels using the signal present during recording standby. If the volume surpasses 6dB during recording, the input level is automatically adjusted with the new level displayed on the screen for two seconds.



Display when -6dB is exceeded while recording



NOTE:

- You cannot use this function together with <AUTO REC>.
- You cannot use this setting during recording and playback.

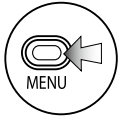
2-06 Recording function <MONITOR>



Turning on the MONITOR function allows you to monitor input signals at all times.

Recording function <MONITOR>

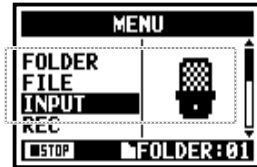
Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



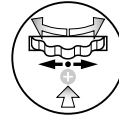
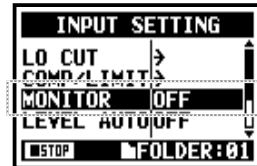
1 Press.



2 Select <INPUT> and press.



3 Select <MONITOR> and press.



4 Select <ON> and press.



HINT:

You can always monitor the input source through [LINE/PHONE MINI STEREO OUT] during recording standby.



NOTE:

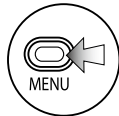
You cannot monitor the input sound through the built-in speaker.

2-07 Recording function <MONO MIX>

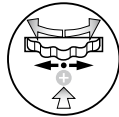


Engaging <MONO MIX> blends the left and right signals down to mono then records dual-mono to each left and right channel.

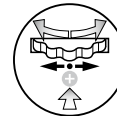
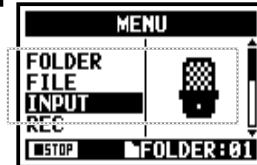
  Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



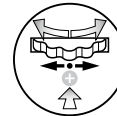
1 Press.



2 Select <INPUT> and press.



3 Select <MONO MIX> and press.



4 Select <ON> and press.



NOTE:

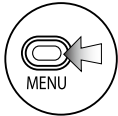
- The name of the recorded file making <MONO MIX> valid is “MONO-xxx”
- You cannot use this function together with <MS STEREO MATRIX>.
- You cannot use this setting during recording and playback.

2-08 Recording function <MS STEREO MATRIX>

This function enables you to convert the stereo microphone signals when using a MID/SIDE recording configuration.

Recording function <MS STEREO MATRIX>

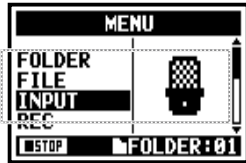
STEREO **4 CH** Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



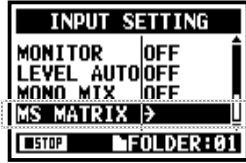
1 Press.



2 Select <INPUT> and press.



3 Select <MS MATRIX> and press.



4 Make each setting accordingly.



<ON / OFF>
Make the setting <ON/OFF> of <MS STEREO MATRIX>.

Select

Select

Select

<MID LEVEL>
<MID>is a directional microphone receiving the recording targets.
Setting value: MUTE, -48.0 _ +12.0dB
Default: +0.0dB

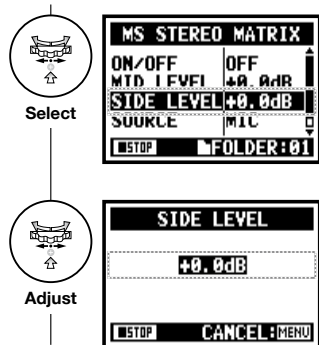
Select

Select

Adjust

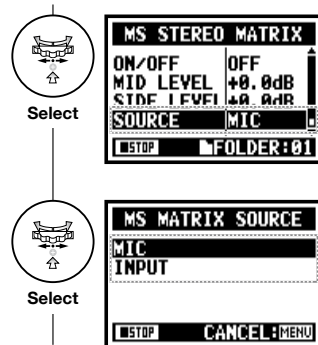
<SIDE LEVEL>

A bi-directional microphone <SIDE> and <MID> are perpendicular each other.
 Setting value: MUTE, -48.0_ +12.0dB
 Default: +0.0dB



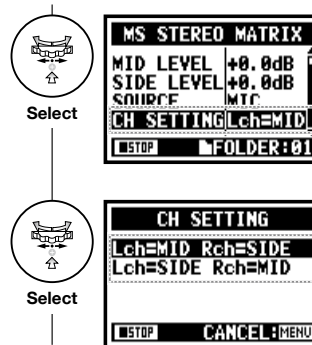
<SOURCE>

Enable to select what input is effective.
 (Only on 4CH mode)



<CH SETTING>

Allocate <MID> inputs and <SIDE> inputs between L-ch (INPUT [1]) and R-ch (INPUT [2]).



NOTE:

You cannot use this function together with <MONO MIX>.

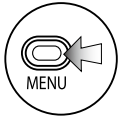
3-01-1 Tuner <TUNER (CHROMATIC) >



The H4n features a tuner with multiple tuning modes.



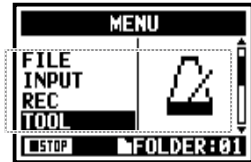

 Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



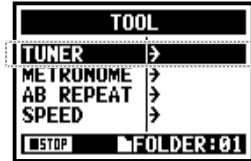
1 Press.



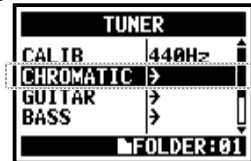
2 Select <TOOL> and press.



3 Select <TUNER> and press.



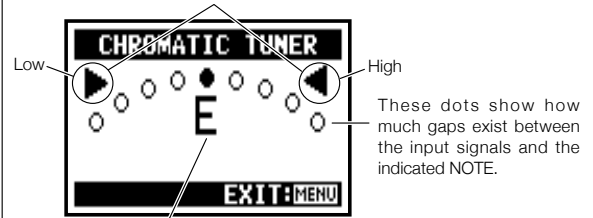
4 Select <CHROMATIC> and press.



5 Tuning.

The indicator shows the input signals are higher or lower than the 'NOTE' described below.

Both marks light on when the inputs signals match the 'NOTE'.




The name of the [NOTE] shows the nearest one to the input signals.

HINT:

- The input source signals selected at the present become the tuning target.
- Operating under 4CH mode, at Step 4 select <INPUT> and select the input source, and then continue to steps 5.

NOTE:

Not available during recording and playback.

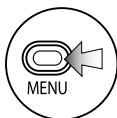
Ref.  Display of tuning
 Relationship between string numbers and notes **P.078**

3-01-2 Tuner, all other <TUNER>



Aside from CHROMATIC, there are other tuning modes such as GUITAR, BASS, OPEN A, OPEN D, OPEN E, OPEN G and DADGAD.

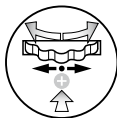
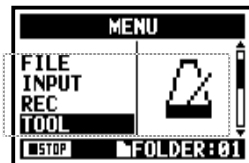
STEREO **4 CH** **MTR** Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



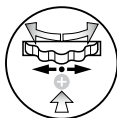
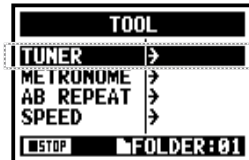
1 Press.



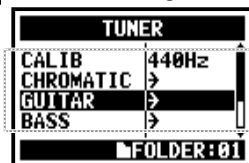
2 Select <TOOL> and press.



3 Select <TUNER> and press.

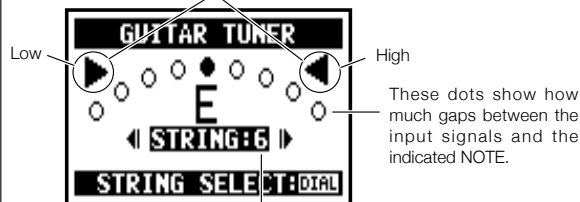


4 Select the tuning mode and press.



5 Tuning.

The indicator shows the input signals are higher or lower than the 'NOTE' described below. Both marks light on when the input signals match the 'NOTE'.



String number currently selected. You can [DIAL] and select.

HINT:

- The input source signals selected at the present become the tuning target.
- Operating under 4CH mode, at Step 4 select <INPUT> and select the input source, and then continue to steps 5.

NOTE:

Not available during recording and playback.

Ref. Display of tuning
Relationship between string numbers and notes **P.078**

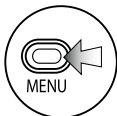
3-01-3 Tuner <TUNER (CALIB)>



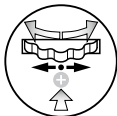
This function allows you to calibrate the tuner.

Tuner <TUNER (CALIB)>

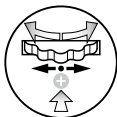
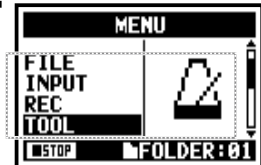
Press the [MENU] button for more than 2 seconds, and start operation from the top screen.



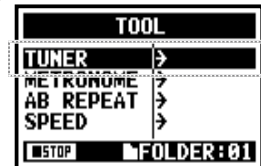
1 Press.



2 Select <TOOL> and press.



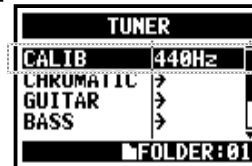
3 Select <TUNER> and press.



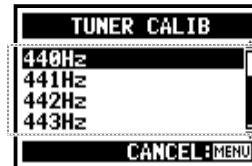
▶ The <TUNER> operation up to here is in common.



4 Select <CALIB> press.



5 Select frequency numbers.



HINT:


- The initial setting is 440Hz.
- You can make any setting per 1Hz from 435Hz to 445Hz.

NOTE:

Not available during recording and playback.

3-01-4 Tuner <TUNER (INPUT) >

In 4CH mode you can select the input source for the tuner.

 Press the [MENU] button for more than 2 seconds, and start operation from the top screen.

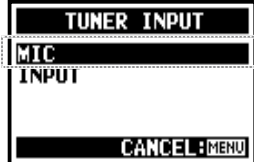
<TUNER>...P.075



4 Select <INPUT> and press.

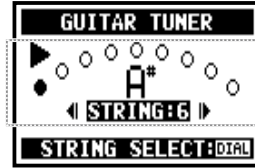


5 Select input source and press.

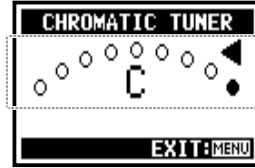


HINT:   

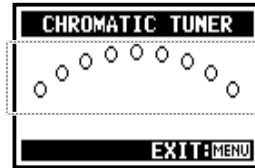
Tuning display



When tuning is low



When tuning is high



No input sound (chromatic)

Tuner type and code

Tuner type	String number/ note name						
	1	2	3	4	5	6	7
GUITAR	E	B	G	D	A	E	B
BASS	G	D	A	E	B		
OPEN A	E	C#	A	E	A	E	
OPEN D	D	A	F#	D	A	D	
OPEN E	E	B	G#	E	B	E	
OPEN G	D	B	G	D	G	D	
DADGAD	D	A	G	D	A	D	

NOTE:

Not available during recording and playback.