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Usage and Safety Precautions

Safety Precautions

In this operation manual, symbols are used to highlight warnings and cautions that you must read to prevent accidents. The meanings of these symbols are as follows.

⚠️ Something that could cause serious injury or death.

 предосторожность

⚠️ Something that could cause injury or damage to the equipment.

 Предупреждение

Other symbols used

⚠️ An action that is mandatory.

 действие

⚠️ An action that is prohibited.

 запрет

⚠️ Operation using an AC adapter

 Never use any AC adapter other than a ZOOM AD-19.

 ⚠️ Operation with external DC power supply

 Use a 9V–18V external DC power supply.

 ⚠️ Operation with batteries

 Use 8 commercially-available 1.5V AA batteries (alkaline dry cell batteries, nickel metal hydride batteries or lithium dry cell batteries).

 ⚠️ Alterations

 Do not open the case or modify the product.

 ⚠️ Product handling

 1. Do not drop, bump or apply excessive force to the unit.
 2. Be careful not to allow foreign objects or liquids to enter the unit.

 ⚠️ Operating environment

 Do not use in extremely high or low temperatures.
 Do not use near heaters, stoves and other heat sources.
 Do not use in very high humidity or where it could be splashed by water.
 Do not use in places with frequent vibrations.
 Do not use in places with much dust or sand.

 ⚠️ AC adapter handling

 1. When disconnecting the power plug from an outlet, always pull on the plug itself.
 2. Disconnect the power plug from the outlet when the unit will not be used for extended periods and whenever there is lightning.

 ⚠️ Battery handling

 1. Install batteries with the correct +/– orientations.
 2. Use the specified batteries. Do not use new and old batteries together. Do not use batteries of different brands or types together.
 3. Remove the batteries when the unit will not be used for extended periods. If a leak occurs, thoroughly wipe the battery case and battery terminals to remove the leaked fluid.
 4. Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

 ⚠️ Mic handling

 1. Always turn the power switch OFF before connecting a mic. Do not apply unnecessary force when connecting a mic.
 2. Attach the protective cap when no mic is connected for extended periods.

 ⚠️ Connection cables and input/output jacks

 1. Always turn the power OFF for all equipment before connecting any cables.
 2. Always disconnect all connection cables and the AC adapter before moving the unit.

 ⚠️ Volume

 1. Do not use at a loud volume for extended periods.

 Usage Precautions

Interference with other electrical equipment

In consideration of safety, the F8n has been designed to minimize its emission of electromagnetic waves and to suppress interference from external electromagnetic waves. However, equipment that is very susceptible to interference or that emits powerful electromagnetic waves could result in interference if placed nearby. If this occurs, place the F8n and the other device farther apart.

With any type of electronic device that uses digital control, including the F8n, electromagnetic interference could cause malfunction, corrupt or destroy data and result in other unexpected trouble. Always use caution.

Cleaning

Use a soft cloth to clean the exterior of the unit if it becomes dirty. If necessary, use a damp cloth that has been wrung out well to wipe it. Never use abrasive cleansers, wax or solvents such as alcohol, benzene or paint thinner.

Breakdown and malfunction

If the unit becomes broken or malfunctions, immediately disconnect the AC adapter or DC power supply, turn the power off and disconnect other cables. Contact the store where you bought the unit or ZOOM service center with the following information: product model, serial number and specific symptoms of breakdown or malfunction, along with your name, address and telephone number.

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Note about the Auto Power Off function

The power will automatically turn off if unused for 10 hours. If you want the power to instead remain on, see “Disabling the Automatic Power Saving function” on P21 and turn the function off.
Thank you very much for purchasing a ZOOM F8n Multitrack Field Recorder. The F8n has the following features:

- **8 analog input channels with super high-quality preamps**
The 8 lockable XLR/TRS combo jacks provide high-quality analog inputs with EIN of −127 dBu or less, +75 dB maximum input gain and support for +4 dB input.

- **PCM recording at up to 192kHz/24-bit resolution**

- **Recording of up to 10 tracks simultaneously**
Inputs 1–8 and a stereo mix (left and right) can be recorded at the same time (8 tracks when the sampling rate is 192 kHz).

- **Dual channel recording of separate files at lower levels simultaneously with ordinary recording (Inputs 1–4)**
Using dual channel recording at a lower input level, you can create backup recordings to use when unexpected loud noise causes regular recordings to distort, for example.

- **Newly redesigned limiters for overload protection**
With 10 dB of headroom, this limiter prevents distortion even more than ordinary ones. The threshold can also be set to keep the signal below that level.

- **Time code with pinpoint accuracy**
The F8n utilizes a high-precision oscillator that generates time-code with accuracy of 0.2ppm, ensuring rock-solid stability when syncing audio and video.

- **Outputs include a stereo headphone jack with a powerful 100mW amp as well as MAIN OUT 1/2 and SUB OUT 1/2 jacks**
This allows you to send the audio signal to a video camera or other device while monitoring with headphones.

- **Built-in digital mixer with flexible signal routing**
Prefader and postfader signals from inputs 1–8 can be freely routed to any outputs.

- **Phantom power (+24V/+48V) can be supplied**
This can be turned on/off for each input separately.

- **Three possible power sources—batteries, an AC adapter and an external DC power supply**
In addition to AA batteries and an AC adapter, a 9-18V external DC power supply can also be used.

- **Double SDXC card slots**
Simultaneous recording on 2 SD cards is possible, and support for SDXC cards up to 512 GB enables long-duration recording. In addition, the F8n can be used as a card reader by connecting to a computer using USB.

- **USB audio interface capabilities with up to 8 ins and 4 outs**
The F8n can be used not only as a 2-in/2-out audio interface, but also as an 8-in/4-out audio interface (driver required for Windows).

- **Other useful features**
Other convenient functions include a built-in slate mic for voice memos and a variable frequency slate tone generator to confirm levels. There are also input and output delays and pre-recording of up to 6 seconds.

- **ZOOM mic capsules can be connected**
Use any ZOOM mic capsule instead of inputs 1/2.

Please read this manual carefully to fully understand the functions of the F8n so that you can make the most of it for many years. After reading this manual, please keep it with the warranty in a safe place.
Names of parts

**Front**
- Display
- Select encoder
- Slate switch
- Track indicator
- Track key
- Track knob
- LED level meter
- PFL key
- Slate mic
- DC IN connector
- Power switch

**LED level meter**
- Green
- Orange
- Red

**Back**
- DC IN connector
- Timecode IN/OUT connectors
- Battery cover
- MIC IN connector
Names of parts

F8n Multi Track Field Recorder

Left side

- EXT DC IN connector
- USB port
- SD card slots
- Lock release button

Right side

- SUB OUT 1/2 jack
- Headphone jack
- MAIN OUT 1/2 jacks

Inputs 1–8

- HIROSE 4-pin
- XLR

- 1: GND
- 2: HOT
- 3: COLD

- TIP: HOT
- RING: COLD
- SLEEVE: GND

Inputs 5–8

- MAIN OUT 1/2

- 1: GND
- 2: HOT
- 3: COLD

SUB OUT 1/2 jack

- TIP: HOT
- RING: COLD
- SLEEVE: GND

USB port

- DC 9–18V

SD card slots

- TA-3

TRS

- 1: GND
- 2: HOT
- 3: COLD

Headphone jack

- 1
- 2
- 3
Connecting mics/other devices to Inputs 1–8

The F8n can record a total of 10 tracks simultaneously: 8 individual tracks with signals coming from Inputs 1–8 and a stereo mix of these inputs on left and right tracks. You can connect mics and the outputs of line-level devices such as keyboards, mixers, or instruments with active electronics to Inputs 1–8 and record them to tracks 1–8. Alternatively, Inputs 1 and 2 can instead receive input from a ZOOM mic capsule connected to the F8n MIC IN connector.

Connecting mics

Connect dynamic and condenser mics with XLR plugs to Inputs 1–8. Phantom power (+24V/+48V) can be supplied to condenser mics. (→ P:90)

NOTE

When disconnecting a mic, gently pull on the XLR plug while simultaneously pushing the connector lock release button.

Connecting line level equipment

Connect the TRS plugs of keyboards and mixers directly to Inputs 1–8. Direct input of passive guitars and basses is not supported. Connect these instruments through a mixer or effects device.
Connecting mics/other devices to Inputs 1–8

A ZOOM mic capsule can be connected to the MIC IN connector on the back of the F8n.

**NOTE**
- The mic capsule input is assigned to tracks 1/2.
- When a mic capsule is connected, Inputs 1/2 cannot be used.

Connecting and disconnecting mic capsules

1. Remove the protective caps from the F8n and the mic capsule or extension cable.

2. While pressing the side buttons on the mic capsule or extension cable, connect it to the main unit, inserting it completely.

3. To disconnect the mic capsule or extension cable, pull it away from the main unit while simultaneously pressing the buttons on its sides.

**NOTE**
- Do not use too much force when disconnecting. Doing so could damage the mic capsule, extension cable or main unit.
- Reattach the protective cap when a mic capsule is not connected.

Stereo input

By enabling the stereo link for tracks 1/2, 3/4, 5/6 or 7/8, the corresponding Inputs (1/2, 3/4, 5/6 or 7/8) can be handled as a stereo pair. (→ P.27)

When linked, Input 1, 3, 5 or 7 becomes the left channel and Input 2, 4, 6 or 8 becomes the right channel.
Connecting mics/other devices to Inputs 1–8 (continued)

Connection examples
The F8n allows you to record in a variety of situations, such as the following.

While filming
• Input 1: gun mic for main subject sound (XLR connection)
• Inputs 2–5: wireless lavalier mics for performers (TRS connections)
• Inputs 6-7: mics for ambient sound (XLR connections)

While filming
• Input 1: gun mic for main subject sound (XLR connection)
• Inputs 2–5: wireless lavalier mics for performers (TRS connections)
• Inputs 6-7: mics for ambient sound (XLR connections)

Concert recording
• Inputs 1-4: mics for stage performance (XLR connections)
• Inputs 5-6: line-level PA mixer outputs (TRS connections)
• Inputs 7-8: mics for audience sound (XLR connections)
**LCD display**

**Home Screen**

- **Mixer**

  - **Status icon**
    - Stopped
    - Paused
    - Recording
    - Playing

  - **Track number**
    - Red: input enabled
    - Green: playback track enabled
    - Grey: input disabled

  - **Phantom power status**
    - Lit: enabled
    - Unlit: disabled

  - **Limiter status**
    - Grey: disabled
    - Red: enabled
    - Yellow: functioning

  - **Recording/playback take name**
    - Press \( \wedge \) when stopped to show the name of the next track to be recorded.

- **Frame rate**
  - INT: internal timecode enabled
  - EXT: external input timecode enabled

- **Counter**
  - (playback/elapsed recording time)

- **Recording/playback timecode**
  - Power type and remaining power
    - DC: AC adapter
    - EXT: external DC power supply
    - AA: batteries

- **Level meters**
  - Stereo-linked inputs
  - L/R tracks
  - Limiter indicators
    - Yellow: limiter functioning
  - Clip indicators
  - Level meters

- **Playback card**
  - Green: used for playback
  - Grey: no card

- **Recording/playback file format and sampling rate**
  - (by card)

- **When recording: remaining recordable time**
- **When playing: remaining playback time**
  - (by card)

**HINT**

When the Home Screen is not displayed, press and hold \( \) to return to the Home Screen.
LCD display (continued)

- Level meters

Turn to switch the mixer display (Tracks 1–8, MAIN OUT 1/2, SUB OUT 1/2, USB1–4) or level meter display (Views 1–4 can be set → P.164) shown on the LCD.
Character input screen

- **Text box**
  - Project001
  - Project001

- **Keyboard**
  - 123 45 67 89 0
  - ABC DEFGHIJKLMNOPQRSTUVWXYZ
  - KL MNOPQRSTUVWXYZ
  - UVWXYZ
  - - Del
  - Enter
  - Enter

- **Instructions**
  - Press abc to input a character.
  - Press #+= to move the cursor to “Enter”.

- **Automatic input keys**
  - Project
  - Scene
  - Del
  - ABC

- **Editing operations**
  - Move cursor in box: ← and →
  - Character selection: Turn the to move horizontally and turn it while pressing to move vertically.
  - Confirm character: Press
  - Complete editing: Move cursor to “Enter” and press
  - Cancel editing: Press

**NOTE**
- The following characters can be used in project names:
  - (space)!#$('@,$-0123456789;=@ABCD
  - EFGHIJKLMNOPQRSTUVWXYZ
  - VWXYZ[]^_abcdefghijklmnopqrstuvwxyz{~

**HINT**
- Press ← + ← to delete the previous character.
- Press ← + → to move the cursor to “Enter”.
- **Automatic input keys**
  
  (Date): Automatically inputs the date. Example: 180210
  (Time): Automatically inputs the time. Example: 130950
  (Project): Automatically inputs “Project***” in the field.
  (Scene): Automatically inputs the scene name.
Using AA batteries

1. Turn the power off and then loosen the screw in the battery cover to open it.

2. Install the batteries.

3. Close the battery cover and tighten the screw.

NOTE
- Be careful because the battery case could become loose unexpectedly if the cover screw is not tightened firmly.
- Use only one type of batteries (alkaline, NiMH or lithium) at a time.
- After loading batteries, set "Power Source" to the correct type of battery. (→ P.22)
- If the remaining battery power indicator turns red, turn the power off immediately and install new batteries.
Using an AC adapter

1. Connect the dedicated AC adapter to the DC IN connector.

2. Plug the dedicated AC adapter into an outlet.

Using an external DC power supply

1. Connect the external DC power supply equipment to the EXT DC IN connector.

Connect a 9–18V direct-current power supply.

2. If there is an adapter, plug the adapter into an outlet.

**NOTE**
- When connecting an external DC power supply, be sure to make the power supply settings. (→ P22)
Loading an SD card

1. Turn the power off and then open the SD card slot cover.

2. Insert the SD card into the SD CARD 1 or 2 slot.

   To eject an SD card:
   Push the card further into the slot until it clicks and then pull it out.

NOTE
- Always turn the power off before inserting or removing an SD card. Inserting or removing a card while the power is on could result in data loss.
- When inserting an SD card, be sure to insert the correct end with the top side up as shown.
- If an SD card is not loaded, recording and playback will not be possible.
- To format an SD card, see P. 177.
Turning the power on and off

Turning the power on

1. Press and hold briefly.

The LED will light.

**NOTE**

- The first time you turn the power on after purchase, you must set the date/time (→ P. 19). You can also change this setting later.
- If “No Card!” appears on the display, confirm that an SD card is inserted properly.
- If “Card Protected!” appears on the display, the SD card write-protection is enabled. Slide the lock switch on the SD card to disable write-protection.
- If “Invalid Card!” appears on the display, the card is not formatted correctly. Format the card or use a different card. To format an SD card, see P. 177.

Turning the power off

1. Press and hold briefly.

**NOTE**

Keep pressing it until the ZOOM logo appears on the LCD.

**The F8n will automatically turn off if it is unused for 10 hours.**

To keep the power on continuously until powered off, see "Disabling the Automatic Power Saving function" on P. 21 and set Auto Power OFF to Off.
Setting the date and time (Date/Time (RTC))

The date and time set on the F8n are used when recording files, for example. You can also set the date format (order of year, month and day).

1. Press \( \text{MENU} \).  
2. Use \( \text{SEL} \) to select SYSTEM, and press \( \text{SEL} \). 
3. Use \( \text{SEL} \) to select Date/Time (RTC), and press \( \text{SEL} \). 

▶ Continue to one of the following procedures. 

Setting the date and time ................................. P.19  
Setting the date format ........................................ P.20

Setting the date and time  

4. Use \( \text{SEL} \) to select Set Date/Time, and press \( \text{SEL} \). 

5. Change the setting. 
   - Changing settings  
     Move cursor or change value: 
   
   Turn \( \text{SEL} \)  
   Select item to change: Press \( \text{SEL} \)
Setting the date and time (Date/Time (RTC)) (continued)

6. Use \( \rightarrow \) to select Enter, and press \( \bullet \).

   This completes setting the date and time.

   ![Set Date/Time Screen]

   ![Setting the date format]

Setting the date format

4. Use \( \rightarrow \) to select Date Format, and press \( \bullet \).

5. Use \( \rightarrow \) to select the format, and press \( \bullet \).

   Setting value | Explanation
   -------------|------------------
   mm/dd/yy     | Month, day, year order
   dd/mm/yy     | Day, month, year order
   yy/mm/dd     | Year, month, day order
Disabling the Automatic Power Saving function (Auto Power Off)

The power will automatically turn off if the F8n is unused for 10 hours. If you want the power to stay on continuously until powered off, disable the Automatic Power Saving function.

1. Press \textsc{menu}.

2. Use \textbullet\textdegree to select \textsc{system}, and press \textbullet\textdegree.

3. Use \textbullet\textdegree to select \textsc{auto power off}, \textsc{auto power off} \textbullet\textdegree and press \textbullet\textdegree.

4. Use \textbullet\textdegree to select \textsc{off}, \textsc{off} \textbullet\textdegree and press \textbullet\textdegree.
Setting the power supply used (Power Source)

Set the external DC power supply shutdown voltage, nominal voltage and type of batteries so that the remaining power supply charge can be shown accurately.

On this menu page, you can also check the voltage of each power supply and the remaining battery capacity.

1. Press [MENU].

2. Use [ ] to select SYSTEM, and press [ ].

3. Use [ ] to select Power Source, and press [ ].

▶ Continue to one of the following procedures.

   Setting the external DC power supply (EXT DC) shutdown voltage ......................................................... P.22
   Setting DC power supply (Ext DC) nominal voltage. P.23
   Setting the AA battery type (Int AA). ......................... P.23

Setting the external DC power supply (EXT DC) shutdown voltage

When an external DC power supply is being used, if the voltage drops below the value set here, the F8n will automatically stop recording and turn off.

If AA batteries (Int AA) are installed, however, the power supply will switch to Int AA and operation will continue.

4. Use [ ] to select Shutdown Voltage, and press [ ].

HINT

- The shutdown voltage is the voltage when the external DC power supply runs out and can no longer supply power.
- See the manual for the external DC power supply for the shutdown voltage value.

5. Use [ ] to select the voltage, and press [MENU].
Setting DC power supply (Ext DC) nominal voltage

4. Use \( \circ \) to select Nominal Voltage, and press \( \circ \).

5. Use \( \circ \) to select the voltage, and press \( \circ \).

HINT
- The nominal voltage is the voltage of the external DC power supply under normal conditions. This value should be indicated on the outside of the external DC power supply.
- This can be set from 12.0 to 15.0 V in 0.2 V intervals.

Setting the AA battery type (Int AA)

4. Use \( \circ \) to select Battery Type, and press \( \circ \).

5. Use \( \circ \) to select the type, and press \( \circ \).

NOTE
- When multiple power supplies are connected, they will be used in the following order of precedence.
  1. Dedicated AC adapter (DC IN)
  2. External DC power supply (Ext DC)
  3. AA batteries in unit (Int AA)
- The voltages of each power supply are shown on the display.
Recording process

Recording with the **F8n** follows the process shown below.
The data created for each recording occurrence is called a "take".

1. Set the SD card and file format for recording. (→ P.25)
   - Set the recording file format for each SD card separately.

2. Select the recording tracks (→ P.27)
   - Use track keys to select. The indicators for selected tracks light red and you will be able to monitor input sounds.
   - Press two track keys simultaneously to link them as a stereo track.

3. Make recording settings
   - Make other settings, including for the following functions:
     - dual channel recording (→ P.33)
     - pre recording (→ P.35)
     - high pass filter (→ P.82)
     - limiter (→ P.83)

4. Adjust the input levels (→ P.28)
   - The side mic level can also be adjusted when using a mid-side mic capsule.

Connect

Turn power on (→ P.18)

Prepare before recording

Record (→ P.29)

Play back and check (→ P.51)

Check take information (→ P.63)

• Connect mics, instruments, audiovisual equipment and other devices to Inputs 1–8. (→ P.8)
• Connect a mic capsule to the MIC IN connector. (→ P.9)

• Press ◼ to start and ◼ to stop recording.
• You can also set marks.
• Press ◼ to start recording a new track.
• Press ◼ to pause

• Press ◼ to start playback and ◼ or ◼ to stop it.
• Marks, for example, can also be set.

• Check and edit metadata.
Enabling recording on SD cards and setting file formats

The recording file format can be set independently for SD CARD slots 1 and 2.

**HINT**
- Recording the same content to two cards is possible by using the same settings for both card slots. This function can be used to create a backup in case the sound skips on one card, for example.
- You can also record tracks 1–8 unmixed on one SD card while recording all tracks mixed together as MP3 or WAV data with left and right tracks.

1. Press **MENU**.
2. Use **○** to select **REC**, and press **△**.
3. Use **○** to select **Rec to SD1** or **Rec to SD2**, and press **△**.
4. Use **○** to select the file type, and press **△**.

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Tracks recorded</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>–</td>
<td>Nothing is recorded on the SD card.</td>
</tr>
<tr>
<td>Track1-8 (Poly WAV)</td>
<td>Selected tracks 1–8</td>
<td>A single (multitrack) file is created that contains audio for multiple tracks.</td>
</tr>
<tr>
<td>Track1-8 (Mono/Stereo WAV)</td>
<td>All selected tracks</td>
<td>A single mono file is created for each mono track and a single stereo file is created for each stereo track.</td>
</tr>
<tr>
<td>Track1-8 + L/R (Poly WAV)</td>
<td>–</td>
<td>A single (multitrack) file is created that contains audio for multiple tracks.</td>
</tr>
<tr>
<td>Track1-8 + L/R (Mono/Stereo WAV)</td>
<td>–</td>
<td>A single mono file is created for each mono track and a single stereo file is created for each stereo track.</td>
</tr>
<tr>
<td>L/R (Stereo WAV)</td>
<td>L/R tracks</td>
<td>A stereo file is created based on the mix created by the internal mixer.</td>
</tr>
<tr>
<td>L/R (Stereo MP3)</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Enabling recording on SD cards and setting file formats
NOTE

- When recording with a Mono/Stereo WAV setting, the audio files are saved in a take folder that is created. (→ P.38)
- When recording to 2 SD cards simultaneously, files will be saved in take folders with the same name on both cards. Folders will be created automatically if they do not already exist.
- If recording should stop on one SD card because, for example, it runs out of space, recording will continue on the other SD card. At such times, do not remove the card that has stopped recording from the slot. Doing so could damage the card or data.
Selecting inputs and adjusting levels

You can select which of Inputs 1–8 to use. Inputs will be recorded on tracks with the same numbers. For example, Input 1 will be recorded on track 1 and Input 2 will be recorded on track 2.

Selecting inputs

1. Make the track indicator light by pressing the track key for the number of the input to record.

The background color of the track number on the LCD also changes at this time.

<table>
<thead>
<tr>
<th>Track indicator</th>
<th>Track number background color</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lit red</td>
<td>Red</td>
<td>The input is enabled.</td>
</tr>
<tr>
<td>Unlit</td>
<td>Gray</td>
<td>The input is disabled.</td>
</tr>
</tbody>
</table>

The signals from the inputs selected this way will also be sent to the L/R tracks.

NOTE

Linking inputs as a stereo pair

1. While pressing track key 1, press track key 2.

Tracks 1 and 2 will be linked as a stereo track (stereo link). Repeat the same procedure to disable the stereo link.

HINT

- The 3/4, 5/6 and 7/8 track pairs can also be stereo-linked in the same way.
- When a mic capsule that allows independent L and R input selection is connected, stereo-linking can also be enabled and disabled for those tracks.
Selecting inputs and adjusting levels (continued)

Adjusting input levels

1. Use \( \text{trim} \) to select a trim, and press \( \text{enter} \).

2. Use \( \text{trim} \) to adjust the input level, and press \( \text{enter} \).

NOTE

When a mic capsule is connected, the input levels of Input 1/2 cannot be adjusted with the F8n. Use the level control on the mic capsule to adjust its input volume.

HINT

- This can be set in a range from +10 to +75 dB when the input source is set to "Mic", from –10 to +55 dB when set to "Line", and from –35 to +30 dB when set to USB.
- If the sound distorts even when you lower the input level, try changing mic positions and adjusting the output levels of connected devices.
- Using the limiter (→ P.83)
- Using the high pass filter (→ P.82)
Recording

1. Press \( \text{ RECORD} \). This starts recording.

   **HINT**
   If the timecode function is enabled, recording will start from frame 00 (00 or 02 when using drop frame) and files will always end exactly on a second. This makes synchronization easy when editing later.

2. Press \( \text{ RECORD} \) to start a new take when recording.

   This will end the current take and start a new take while continuing to record without interruption.

   **NOTE**
   Pressing \( \text{ RECORD} \) during recording is only possible after recording for at least a second.

3. Press \( \text{ PLAY/PAUSE} \) to pause.

   **NOTE**
   - When pausing, pausing will occur at a whole second increment.
   - When recording is paused, a mark is added at that point. Press \( \text{ PLAY/PAUSE} \) to resume recording.
   - A maximum of 99 marks can be added to a take.

   **HINT**
   - During playback, you can press \( \text{ PLAY/PAUSE} \) and \( \text{ STOP} \) to jump to points where marks have been added.
   - You can also add marks without pausing. (→ P. 170)

4. Press \( \text{ STOP} \) to stop.

   **NOTE**
   - If the maximum file size is exceeded during recording (→ P. 36), recording will continue in a new take with a number that is one higher. No gap in sound will occur between the two takes when this happens.
   - When recording on 2 SD cards simultaneously, if recording should stop on one because it runs out of space, recording will continue on the other SD card without interruption.

   **HINT**
   - Files are automatically saved at regular intervals during recording. Even if the power is interrupted or another unexpected problem occurs during recording, an affected file can be restored to normal by playing it with the F8n.
   - Press and hold \( \text{ STOP} \) when the HOME screen is open to check the name that will be given to the next take recorded.
Setting the sampling rate (Sample Rate)

You can set the sampling rate used to record files.

1. Press \( \text{MENU} \).

2. Use \( \text{ } \) to select \( \text{REC} \), and press \( \text{ } \).

3. Use \( \text{ } \) to select \( \text{Sample Rate} \), and press \( \text{ } \).

4. Use \( \text{ } \) to select the sampling rate, and press \( \text{ } \).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>44.1kHz, 48kHz, 88.2kHz, 96kHz, 192kHz</td>
<td>These are standard sampling rates.</td>
</tr>
<tr>
<td>47.952kHz</td>
<td>Select this when recording video at 23.976 frames per second if you want to edit at 24 frames per second later.</td>
</tr>
<tr>
<td>48.048kHz</td>
<td>Select this when recording video at 24 frames per second if you want to edit at NTSC 29.97 or 23.98 HD later.</td>
</tr>
<tr>
<td>47.952kHz (F), 48.048kHz (F)</td>
<td>These function the same as the two above, but the &lt;FILE_SAMPLE_RATE&gt; sampling rate metadata will be recorded as 48kHz. This enables playback and editing with devices and software that do not support 47.952kHz and 48.048kHz WAV files. Playback, however, will occur at the ±0.1% speed at which the file was recorded.</td>
</tr>
</tbody>
</table>

**NOTE**

- When the recording file format is MP3, only 44.1kHz and 48kHz can be selected.
- When 192 kHz is selected, L/R tracks will not be recorded. The Input Delay and Output Delay are also disabled. Moreover, Auto Mix, Ambisonic Mode, and Input Limiter > On/Off > On (Advanced) cannot be set.
- Audio Out From USB cannot be used when values other than 44.1 kHz or 48 kHz are selected.
Setting WAV file bit depth (WAV Bit Depth)

You can set the bit depth of WAV files.

1. Press \( \text{MENU} \).

2. Use \( \) to select REC, and press \( \) .

3. Use \( \) to select WAV Bit Depth, and press \( \) .

4. Use \( \) to select the bit depth, and press \( \) .

HINT
This can be set to 16-bit or 24-bit.
**Setting MP3 file bit rate (MP3 Bit Rate)**

You can set the bit rate of recorded MP3 files.

1. Press **MENU**.

2. Use **○** to select **REC**, and press **○**.

3. Use **○** to select **MP3 Bit Rate**, and press **○**.

4. Use **○** to select the bit rate, and press **○**.

**HINT**

This can be set to 128 kbps, 192 kbps or 320 kbps.

You can set the bit rate of recorded MP3 files.
Simultaneously recording tracks at different levels (Dual Channel Rec)

Along with regular recording, the F8n can capture a second recording set to a different input level (dual channel recording). For example, by using dual channel recording to record at an input level 12 dB below that of the regular recording, you have an immediate replacement if the regular recording distorts because the track level is too high. Dual channel recording can be used with tracks 1–4.

1. **Press 
   **

2. **Use 
   to select REC, and press 
   .

3. **Use 
   to select Dual 
   Channel Rec, and press 
   .

4. **Use 
   to select the track, and press 
   .

5. **Use 
   to select On, and press 
   .

When dual channel recording is on, the name of the corresponding second track (5–8) changes.
Simultaneously recording tracks at different levels (Dual Channel Rec) (continued)

6. Open the mixer on the Home Screen.

7. Adjust its dual channel recording track input level.

For example, when track 1 is selected, adjust the input level of track 5. (→ P.28)

HINT

Dual channel recording increases the amount of space used on SD cards.

NOTE

- When using dual channel recording, the track that is numbered 4 higher than the original track is used for the second recording. For example, track 5 is used for the dual channel recording of track 1 and track 6 is used for track 2. Dual channel recording tracks cannot be used independently.
- When dual channel recording is enabled, if stereo-linking is enabled or disabled for tracks 1/2 or 3/4, the same setting will be applied to tracks 5/6 or 7/8.
- The limiter, high pass filter and other functions can be set independently for the regular and dual recording tracks.
- When a mic capsule is connected, its dual recording track input level is fixed at –12 dB compared to the regular track.
Capturing audio before recording starts (Pre Rec)

The input signal can be captured for up to 6 seconds before \( \bullet \) is pressed (pre-recording). This is useful if, for example, \( \bullet \) is pressed too late.

1. Press \( \text{MENU} \).

2. Use \( \text{ } \) to select \( \text{REC} \), and press \( \uparrow \).

3. Use \( \text{ } \) to select \( \text{Pre Rec} \), and press \( \uparrow \).

4. Use \( \text{ } \) to select \( \text{On} \), and press \( \uparrow \).

### File format
- **WAV**
  - 44.1kHz: 6 seconds
  - 47.952kHz: 6 seconds
  - 47.952kHz(F): 6 seconds
  - 48kHz: 6 seconds
  - 48.048kHz: 6 seconds
  - 48.048kHz(F): 6 seconds
  - 88.2kHz: 3 seconds
  - 96kHz: 3 seconds
  - 192kHz: 1 second

- **MP3**
  - 44.1kHz: 6 seconds
  - 48kHz: 6 seconds

### NOTE
Pre-recording will be disabled if MENU > TIMECODE > Timecode > Mode (→ P.126) is set to Int Record Run, Ext or Ext Auto Rec.
Maximum file size (File Max Size)

The maximum size of recording files can be set. If a recording file exceeds the maximum file size, recording will continue in a new take with a number that is one higher. No gap will occur in the sound between the two takes when this happens.

1. Press `MENU`.

2. Use `REC` to select REC, and press `INFO`.

3. Use `REC` to select File Max Size, and press `INFO`.

4. Use `INFO` to select Size, and press `INFO`.

5. Use `INFO` to select the maximum size of recording files, and press `INFO`.

**HINT**

Setting the maximum size to 640MB or 512MB is convenient for backing up to CDs.
Showing total recording times for long recordings (Time Counter)

When recording for a long time, if the file size set with "File Max Size" is reached, recording will continue in a new take and the recording time will reset. You can change this, however, so that it is not reset and the total recording time is shown.

1. Press \[\text{MENU} \].

2. Use \[\text{REC} \] to select \[\text{REC} \], and press \[\text{REC} \].

3. Use \[\text{REC} \] to select \[\text{File Max Size} \], and press \[\text{REC} \].

4. Use \[\text{REC} \] to select \[\text{Time Counter} \], and press \[\text{REC} \].

5. Use \[\text{REC} \] to select \[\text{Continuous} \], and press \[\text{REC} \].

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous</td>
<td>When recording, even if the file size set with &quot;Size&quot; is reached, the counter shown on the Home Screen will not be reset.</td>
</tr>
<tr>
<td>Reset</td>
<td>When recording, if the file size set with &quot;Size&quot; is reached, the counter shown on the Home Screen will be reset to 000:00:00.</td>
</tr>
</tbody>
</table>
Folder and file structure

When recording with the F8n, folders and files are created on SD cards as shown below. Folders and files are used to manage scenes and takes.

Folder and file structure

The folder and file structure differs according to the recording file format. In addition, the names of folders and files depend on how scenes are named.

NOTE
- Enabling recording on SD cards and setting file formats (→ P.25)
- Setting how scenes are named (mode) (→ P.43)

HINT
- A "take" is a unit of data created for a single recording.
- A "Scene" is a unit containing multiple files and takes that comprise a single scene.
## Take names

<table>
<thead>
<tr>
<th>Structure</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scene001-T001</td>
<td>Scene name: Select none, the folder name, the date or a name input by the user (→ P43). Scene number: Press + to advance the number by one. Take number: This number increases by 1 for each recording made with the same scene name and number.</td>
</tr>
</tbody>
</table>

## Audio file names

File names are given by the F8n according to the file format—poly, mono or stereo. Track numbers and other data are added to file names.

### File names

File names are given according to the following formats.

<table>
<thead>
<tr>
<th>Type</th>
<th>Structure</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly file</td>
<td>Scene001-T001.wav</td>
<td>This is a file created by poly recording. Audio for multiple tracks is recorded to a single file.</td>
</tr>
<tr>
<td>Mono file</td>
<td>Scene001-T001_Tr1.wav</td>
<td>This is a file created by mono recording.</td>
</tr>
<tr>
<td>Stereo file</td>
<td>Scene001-T001_Tr1_2.wav</td>
<td>This is a file created by stereo recording.</td>
</tr>
<tr>
<td>Dual channel recording file</td>
<td>Scene001-T001_Tr1_D.wav</td>
<td>This is a file created by dual channel recording.</td>
</tr>
</tbody>
</table>

### HINT

When recording with a Mono/Stereo setting, the audio files are saved in the take folder that is created.
Moving the previously recorded take to the FALSE TAKE folder

If the just recorded take was a failure, you can use a shortcut to move the recording to the FALSE TAKE folder.

1. Open the Home Screen.

2. Press and hold \( \text{ previous } \).

HINT
- Moving the take recorded most recently to the FALSE TAKE folder will reduce the number of the take recorded next by 1.
- Even during recording, you can move the previously recorded take to the FALSE TAKE folder.

3. Use \( \circ \) to select Yes, and press \( \circ \).

If the just recorded take was a failure, you can use a shortcut to move the recording to the FALSE TAKE folder.
Changing the note for the next take recorded (Note)

You can input characters for a note to use as metadata in the file.

1. Press \[ MENU \].

2. Use \[ \] to select META DATA (for Next Take), and press \[ \].

3. Use \[ \] to select Note, and press \[ \].

▶ Continue to one of the following procedures.

   Editing notes ........................................ P.41
   Selecting notes from the history list ................. P.42

4. Use \[ \] to select Edit, and press \[ \].

5. Edit the note.

   See "Character input screen" (→ P.13) for how to input characters.

NOTE

This note is written to the <NOTE> metadata.
Selecting notes from the history list

4. Use \( \) to select History, and press \( \).

5. Use \( \) to select the item to use, and press \( \).

**NOTE**
The history list will be erased if the Factory Reset function is used.
Setting how recorded scenes are named and numbered

You can set how scenes are named (name mode), the base scene name and how scene numbers advance.

1. Press MENU.

2. Use to select META DATA (for Next Take), and press .

▲ Continue to one of the following procedures.

- Setting how scenes are named (mode) ...................... P.43
- Changing scene names ........................................ P.44
- Selecting a scene name from the history list ............ P.45
- Setting how scene numbers advance ..................... P.45

Setting how scenes are named (mode)

3. Use to select Scene Name Mode, and press .

4. Use to select the mode, and press .
### Setting how recorded scenes are named and numbered (continued)

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>The scene name and number are not used. When recording files are created, they are named only with the take number, such as &quot;T001&quot;, &quot;T002&quot;, &quot;T003&quot; and so on. M + M cannot be used to advance the scene number by 1. Example: T001.wav</td>
</tr>
<tr>
<td>Current Folder</td>
<td>The name of the currently selected folder is used as the scene name. M + M can be used to advance the scene number by 1. After advancing the scene number by 1, the corresponding folder will be used as the recording destination. If that folder does not already exist, it will be created. Example: FOLDER001-T001.wav</td>
</tr>
<tr>
<td>Date</td>
<td>The date is used as the scene name. M + M cannot be used to advance the scene number by 1. If recording occurs after the date changes, a scene folder with the date will be created. Example: 20150101-T001.wav</td>
</tr>
<tr>
<td>User Name</td>
<td>A scene name input by the user is used. M + M can be used to advance the scene number by 1. No folder is created in this case. Example: MYSCENE001-T001.wav</td>
</tr>
</tbody>
</table>

### Changing scene names

If Scene Name Mode is set to User Name, set the scene name used like this.

3. Use \( \) to select User Scene Name, and press \( \).

4. Use \( \) to select Edit, and press \( \).

5. Edit the scene name.

See "Character input screen" (→ P.13) for how to input characters.

### NOTE

The scene name is written to the <SCENE> metadata. You cannot put a space or an @ mark at the beginning of the name.
Recording take settings

Setting how recorded scenes are named and numbered

3. Use \( \square \) to select User Scene Name, and press \( \uparrow \).

4. Use \( \square \) to select History, and press \( \uparrow \).

5. Use \( \square \) to select the item to use, and press \( \uparrow \).

NOTE
The history list will be erased if the Factory Reset function is used.

Setting how scene numbers advance

3. Use \( \square \) to select Scene Increment Mode, and press \( \uparrow \).

4. Use \( \square \) to select how scene numbers advance, and press \( \uparrow \).

Setting value | Explanation
---|---
Numeric | Press \( \bullet \) + \( \triangleright \) on the Home Screen to increase the scene number by one. Example: Scene → Scene1 → Scene2 → ... → Scene9999
Character | Press \( \bullet \) + \( \triangleright \) on the Home Screen to advance the capital letter at the end of the scene name by one. If the scene name does not have a capital letter at its end, one will be added. Example: Scene1 → Scene1A → Scene1B → ... → Scene1Z → Scene1AA → Scene1AB → ...
Setting the take name reset condition and format

You can set the take name reset condition and format used when recording.

1. Press \[\text{MENU}\].

2. Use \(\hat{\circ}\) to select META DATA (for Next Take), and press \(\circ\).

   ▶ Continue to one of the following procedures.

   Setting the take name reset condition.................. P.46
   Setting the take name format............................... P.47

3. Use \(\hat{\circ}\) to select Take Reset Mode, and press \(\circ\).

4. Use \(\hat{\circ}\) to select the reset mode, and press \(\circ\).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>The take number will not be reset. However, if the folder is changed and that folder contains a number higher than the current take number, the take number will be set to one higher than the highest existing take number.</td>
</tr>
<tr>
<td>Folder Change</td>
<td>If the destination folder is changed, the take number will be set to one higher than the highest take number in that folder.</td>
</tr>
</tbody>
</table>
Setting the take name format

3. Use \( \circ \) to select Take Name Format, and press \( \uparrow \).

4. Use \( \circ \) to select the format, and press \( \uparrow \).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
</table>
| "Scene"-T***  | "Scene"-T*** Take name  
Scne name  
Example: Scene001-T001 |
| "Scene"-***  | "Scene"-*** Take name  
Scne name  
Example: Scene001_001 |
Changing the track name of the next take recorded (Track Name)

The track name set with the following procedure will be given to the next recorded track.

1. Press MENU.

2. Use ◀ to select META DATA (for Next Take), and press ◀.

3. Use ◀ to select Track Name, and press ◀.

4. Use ◀ to select the track, and press ◀.

▶ Continue to one of the following procedures.

- Editing the track name ........................................ P.49
- Selecting a track name from the History list ............ P.49

HINT
On the Home Screen, ◀ + 2 can be used to open the Track Name screen.
Editing the track name

5. Use ◀ to select Edit, and press ▼.

6. Edit the track name.
   See "Character input screen" (→ P.13) for how to input characters.

NOTE
   The track name is written to the <TRACK> <NAME> metadata.

Selecting a track name from the history list

5. Use ◀ to select History, and press ▼.

6. Use ◀ to select the item to use, and press ▼.

NOTE
   The history list will be erased if the Factory Reset function is used.
Changing the number of the next take recorded

The number given to the next recorded take can be changed when the Home Screen is open.

1. Press and hold ⏯.

2. Use ⬇️ to increase or ⬆️ decrease the take number by one, and press ⌚️.

NOTE

This function cannot be used during recording and playback or when the scene naming method (Scene Name Mode) is set to Date. You can change how scenes are named with the following menu item.

MENU > META DATA (for Next Take) > Scene Name Mode
Playing recordings

1. Press ▶/■.

   - Playback operations
     - Select take or jump to mark: Press ◄ or ►
     - Search backward/forward: Press and hold ◄/◼
     - Pause/resume playback: Press ◄/■

   **NOTE**

   Tracks that have no playback files appear gray.

   **HINT**

   - The longer you press and hold ◄/◼, the faster the backward/forward search speed.
   - During playback, press track keys to switch between playing back (lit green) and muted (unlit).
   - An "Invalid Take!" message will appear if the selected take is not valid.
   - A "No Take!" message will appear if no take exists.
   - During playback, you can press ◄/■ to add a mark that can be used for skipping. (→ P. 170)

2. Press ◄ to return to the Home Screen.
Mixing takes

You can change the volume and panning of each track during playback.

1. Open the mixer on the Home Screen. (→ P.11)

2. Press [ ] to start playback.

3. Adjust the parameter settings.
   - Editing operations
     - Move cursor or change value: Turn
     - Select parameter to change: Press

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Setting range</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fader</td>
<td>Mute, −48.0 – +24.0 dB</td>
<td>Adjusts the level of the input signal.</td>
</tr>
<tr>
<td>Panning</td>
<td>L100 – Center – R100</td>
<td>Adjusts the left-right stereo position of the sound.</td>
</tr>
</tbody>
</table>

**HINT**

- The pan cannot be adjusted when Track Knob Option is set to Fader.
- You can turn [ ] to move the cursor, and also adjust the settings of the MAIN OUT 1/2 and SUB OUT 1/2 tracks (→ P.116).
- When a fader or pan knob is selected, press and hold [ ] to reset it to its default value. If already set to its default value, selecting a fader mutes the track.

**NOTE**

- Settings are saved separately for each take and are used during playback.
- Mix settings are not saved with the take when the format is MP3.
Monitoring the playback signals of specific tracks during playback

You can monitor the playback signals of specific tracks using SOLO mode.

1. Open the Home Screen.

2. Press ✦/II to start playback.

3. Press PFL on the tracks that you want to monitor.

   The background colors for the selected tracks will become green, and their track indicators will light orange.

4. Press PFL of a track being monitored to stop monitoring it.

   **NOTE**
   
   SOLO mode can only be used with tracks that can be played back (indicators lit green).
Changing the playback mode (Play Mode)

You can change the playback mode.

1. Press \[\text{MENU} \].

2. Use \[\text{OK} \] to select \text{PLAY,} and press \[\text{OK} \].

3. Use \[\text{OK} \] to select \text{Play Mode,} and press \[\text{OK} \].

4. Use \[\text{OK} \] to select the play mode, and press \[\text{OK} \].

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play One</td>
<td>Only the selected take will be played.</td>
</tr>
<tr>
<td>Play All</td>
<td>Takes will be played back continuously from the selected one until the last take.</td>
</tr>
<tr>
<td>Repeat One</td>
<td>The selected take will be played repeatedly.</td>
</tr>
<tr>
<td>Repeat All</td>
<td>All takes in the selected folder will be played repeatedly.</td>
</tr>
</tbody>
</table>
Take and folder operations (FINDER)

The FINDER allows you to select and view the contents of SD cards, takes and folders, and to create project/scene folders. It also allows you to, for example, set and delete recording/playback folders and view their information.

1. Press [MENU].

2. Use [ ] to select FINDER, and press [ ].

3. Turn [ ] to select the SD card, folder or take that you want to use.

- Editing operations
  - Move cursor: Turn [ ]
  - Move down a level: Press [ ]
  - Move up a level: Press [ ]

- SD card selected
  - Free space
  - Size
  - Recordable time

- Folder selected
  - Date
  - Time

- Take selected
  - Timecode
  - Frame rate
  - Length
  - Recording format
  - Date created
  - Time created
  - Size
  - MS Side mic level

The FINDER allows you to select and view the contents of SD cards, takes and folders, and to create project/scene folders. It also allows you to, for example, set and delete recording/playback folders and view their information.
Take and folder operations (FINDER) (continued)

NOTE
• When the cursor is on a take, you can press ➤ to play the selected take. You can also use ◄, ► and ◼.
• A check mark appears on the playback take and recording/playback folder.

▶ Continue to one of the following procedures.

Creating folders ................................................................. P.56
Selecting the take recording/playback folder ....................... P.57
Checking take marks and using them for playback ............ P.57
Changing folder and take names ........................................ P.58
Copying takes to other cards and folders ......................... P.58
Deleting folders and takes ................................................ P.59
Emptying the TRASH/FALSE TAKE folder ....................... P.60

Creating folders
Folders can be created inside the currently selected SD card/folder.


5. Edit the folder name.
See "Character input screen" (→ P.13) for how to input characters.

NOTE
• The folder created will be set as the recording folder.
• The name of the folder created is written to the <PROJECT> or <SCENE> metadata.
• You cannot put a space or an @ mark at the beginning of the name.
Selecting the take recording/playback folder

Use this procedure to select the folder that contains the take to be played or the folder to use for recording takes.

4. Press and hold , use to select Select, and press .

NOTE

- The first take inside the selected SD card or folder will be set as the playback take.
- After selecting the take recording/playback folder, the Home Screen will reopen.

Checking take marks and using them for playback

You can view a list of the marks in a recorded take.

4. Press and hold , use to select Mark List, and press .

5. Use to select a mark, and press .

The Home Screen will reopen, and playback will start from the mark.

Added Mark

Indicates that a mark was added during a recording error.
Take and folder operations (FINDER) (continued)

Changing folder and take names

4. Press and hold ,
   use to select Rename,
   and press .

5. Edit the folder/take name.
   See "Character input screen" (→ P.13) for how to input characters.

   NOTE
   • The edited name of the folder/take is written to the <PROJECT> or <SCENE> metadata.
   • You cannot put a space or an @ mark at the beginning of the name.

Copying takes to other cards and folders

4. Press and hold ,
   use to select Copy,
   and press .

5. Use to select the take to copy, and press .

6. Press and hold .
7. Use ‼️ to select the copy destination, and press and hold ‼️.

NOTE
See "Take and folder operations" for how to select a folder. (→ P.55)

8. Use ‼️ to select Yes, and press ‼️.

Deleting folders and takes

4. Press sand hold ‼️, use ‼️ to select Delete, and press ‼️.

5. Use ‼️ to select the folder/take to delete, and press ‼️.

Press ‼️ to cancel deletion.

NOTE
You can press ‼️ to select/deselect all the folders and takes that are currently shown.

6. Press and hold ‼️.
Emptying the TRASH/FALSE TAKE folder

4. Use \( \text{☐} \) to select TRASH or FALSE TAKE.

5. Press and hold \( \text{☐} \).

NOTE
- Deleted folders and takes are not immediately erased from the SD card. They are moved to the TRASH folder.
- Deleting the folders and takes in the TRASH folder will completely erase their data.
6. Use \( \) to select Empty, and press \( \) .

7. Use \( \) to select Yes, and press \( \) .

**NOTE**
- Emptying the TRASH folder will completely erase the data in it.
- Emptying the FALSE TAKE folder will not immediately erase the data in it from the SD card. Instead, this data will be moved to the TRASH folder.
The **F8n** writes a variety of information (metadata) to files during recording. When these files are read by an application that supports metadata, you will be able to check and use the saved information.

**HINT**
- Metadata is data that contains information related to other data. The **F8n** saves scene names and take numbers, for example, as metadata in audio files.
- A chunk is a unit that contains multiple data in a single block.
- To use BEXT and iXML chunk metadata, an application that supports both data formats is necessary.

**WAV file metadata**
The metadata saved in files recorded by the **F8n** in WAV format is collected in BEXT (Broadcast Audio Extension) and iXML chunks. For information about the metadata saved in these chunks, see the “Metadata contained in BEXT chunks in WAV files” (→ P.187) and “Metadata contained in iXML chunks in WAV files” (→ P.188).

**MP3 file metadata**
The metadata saved in files recorded by the **F8n** in MP3 format is written as ID3v1 tags. For information about the ID3 fields and formats for saving metadata, see the “Metadata and ID3 fields contained in MP3 files” (→ P.190).

**HINT**
- **F8n** MP3 files conform to the MPEG-1 Layer III standard.
- MP3 metadata cannot be edited.
1. Press **MENU**.

2. Use **
   ** to select **FINDER**, and press **

3. Use **
   ** to select the take, and press **

   This opens the Option Screen. See “Take and folder operations” for how to use the Finder. (→ P.55)

4. Use **
   ** to select **Meta Data Edit**, and press **

   ▶ Continue to one of the following procedures.

   - Checking and editing notes ...................................... P.64
   - Selecting notes from the history list ........................... P.64
   - Checking and editing scene names ............................... P.65
   - Selecting a scene name from the history list ................. P.65
   - Checking and editing take names ............................... P.66
   - Circling takes .......................................................... P.67
   - Editing folder (tape) names ..................................... P.67
   - Editing project names .............................................. P.68
   - Checking and editing track names ............................... P.68
   - Selecting a track name from the History list ............... P.69
Checking and editing take metadata

Checking and editing notes

5. Use to select Note, and press .

6. Use to select Edit, and press .

7. Edit the note.
   See "Character input screen" (→ P.13) for how to input characters.

NOTE
   The content of this note is written to the <NOTE> metadata.

Selecting notes from the history list

5. Use to select Note, and press .

6. Use to select History, and press .

7. Use to select the item to use, and press .

NOTE
   The history list will be erased if the Factory Reset function is used.
Take and folder operations

Checking and editing scene names

5. Use \( \Rightarrow \) to select Scene, and press \( \Rightarrow \).

6. Use \( \Rightarrow \) to select Edit, and press \( \Rightarrow \).

7. Edit the scene name.
   See "Character input screen" (→ P.13) for how to input characters.

NOTE
The scene name is written to the <SCENE> metadata.

Selecting a scene name from the history list

5. Use \( \Rightarrow \) to select Scene, and press \( \Rightarrow \).

6. Use \( \Rightarrow \) to select History, and press \( \Rightarrow \).

7. Use \( \Rightarrow \) to select the item to use, and press \( \Rightarrow \).

NOTE
The history list will be erased if the Factory Reset function is used.
Checking and editing take metadata (continued)

Checking and editing take names

5. Use [ ] to select Take, and press [ ].

6. Change the take number.

- Editing operations
  Move cursor or change value: Turn [ ]
  Select parameter to change: Press [ ]

HINT
This can be set from 1 to 999.

NOTE
The take number is written to the <TAKE> metadata.

7. When done changing, use [ ] to select Enter, and press [ ].
Circling takes
Use this function to add an @ mark to the beginning of the name of the best take to make it stand out. This is called a "circled take".

5. Use ◀ to select Circle, and press ○.

6. Use ◀ to select Circled, and press ○.

NOTE
• To clear a circle, select Not Circled and press ○.
• This circled status is written to the <CIRCLE> metadata.

Editing folder (tape) names

5. Use ◀ to select Folder (Tape) Name, and press ○.

6. Edit the folder (tape) name.
See "Character input screen" (→ P.13) for how to input characters.

NOTE
• The folder (tape) name is written to the <TAPE> metadata.
• The folder (tape) name used immediately after recording is the name of the folder in which the take was recorded.
Checking and editing take metadata (continued)

Editing project names

5. Use ◀ to select Project Name, and press ◀.

6. Edit the project name.
   See "Character input screen" (→ P.13) for how to input characters.

NOTE

- The project name is written to the <PROJECT> metadata.
- The project name used immediately after recording includes the name of the highest level folder (inside the SD card root directory) that contains the folder in which the take was recorded.

Checking and editing track names

5. Use ◀ to select Track Name, and press ◀.

6. Use ◀ to select the track, and press ◀.

7. Use ◀ to select Edit, and press ◀.
8. Edit the track name.
   See "Character input screen" (→ P.13) for how to input characters.

NOTE
The track name is written to the <TRACK> <NAME> metadata.

Selecting a track name from the history list

5. Use \( \bigcirc \) to select Track Name, and press \( \bigcirc \).

6. Use \( \bigcirc \) to select the track, and press \( \bigcirc \).

7. Use \( \bigcirc \) to select History, and press \( \bigcirc \).
Checking and editing take metadata (continued)

8. Use 
   to select the item to use, and press .

NOTE
The history list will be erased if the Factory Reset function is used.
**Writing sound reports (Create Sound Report)**

A sound report includes information about recording times and takes. Reports can be written as CSV format files (F8n_[folder name].CSV). You can edit the comments written in sound reports.

1. **Press** [MENU].

2. Use [ ] to select **FINDER**, and press [ ].

3. Use [ ] to select the folder or SD card for which you want to create a sound report, and press and hold [ ].

4. Use [ ] to select Create Sound Report, and press [ ].

▶ Continue to one of the following procedures.

- Writing a sound report ........................................... P. 72
- Editing comments ................................................ P. 72
- Selecting comments from the history list .............. P. 73
Writing a sound report

5. Use \( \uparrow \) to select **Create**, and press \( \uparrow \).

6. Use \( \uparrow \) to select **Yes**, and press \( \uparrow \).

This writes the sound report inside the selected SD card or folder.

**NOTE**
- Only information about takes in the folder or SD card is written in the sound report.
- If a sound report file with the same name already exists, it will be overwritten. Please use caution.

Editing comments

5. Use \( \uparrow \) to select **Info Edit**, and press \( \uparrow \).

6. Use \( \uparrow \) to select **Comments**, and press \( \uparrow \).

7. Use \( \uparrow \) to select **Edit**, and press \( \uparrow \).

8. Edit the comment.

See "Character input screen" (→ P.13) for how to input characters.
5. Use to select Info Edit, and press .

6. Use to select Comments, and press .

7. Use to select History, and press .

8. Use to select the item to use, and press .

**HINT**
The history list will be erased if the Factory Reset function is used.
Adjusting the input signal monitoring balance

You can adjust the volume of each input signal when monitoring.

1. Open the mixer on the Home Screen. (→ P.11)

2. Use to adjust the faders.

HINT

- The fader setting range is muted, and −48.0 to +24.0 dB.
- You can turn to move the cursor, and also adjust the settings of the MAIN OUT 1/2 and SUB OUT 1/2 signals. (→ P.116)

NOTE

- The MAIN OUT 1/2 and SUB OUT 1/2 faders do not affect the levels of the slate mic and slate tone.
- These volume settings only affect the monitoring signals. They have no effect on recorded data.
- Settings are saved separately for each take that is already recorded and can be changed during playback. (→ P.52)
- Mix settings are not saved with the take when the recorded file format is MP3.
Setting the track knob function (Track Knob Option)

The Home Screen layout and track knob functions can be changed.

Setting the track knob function

1. Press \( \text{MENU} \).

2. Use \( \uparrow \) to select \textit{SYSTEM}, and press \( \downarrow \).

3. Use \( \uparrow \) to select \textit{Track Knob Option}, and press \( \downarrow \).

ー Continue to one of the following procedures.

Adjusting trim settings with track knobs . . . . . . . . P. 76
Adjusting fader and pan settings with track knobs . . . . P. 77

Adjusting trim settings with track knobs

This track knob function is restricted to changing input levels.

4. Use \( \uparrow \) to select \textit{Trim}, and press \( \downarrow \).

5. Open the mixer on the Home Screen.

6. Use a track’s \( \uparrow \) to adjust its trim.
The panning and fader level can be changed as follows.
Move cursor, change setting value: Turn ( knob)
Select parameter to change: Press ( knob)

HINT

Adjusting trim, fader and pan settings with track knobs

The track knobs can be used to quickly adjust the fader and pan settings of each track.

4. Use ( knob) to select Mixer, and press ( knob).

5. Open the mixer on the Home Screen.

6. Use ( knob) to select the parameter you want to adjust, and press ( knob).

7. Use ( knob) of the track you want to adjust to change its setting value.

HINT

The position of the knob on the display always shows the current setting.

NOTE

After changing the parameter to be adjusted, for example, if the positions of ( knob) and the knob on the display are different, the knob on the display will appear gray, and moving ( knob) will not affect that setting. In this case, if you adjust ( knob) to match the position of the knob on the display, the display knob and ( knob) will be relinked, and you will be able to use ( knob) to adjust its setting value again.

Parameters with setting values and positions that are different
Adjusting the L/R track volume

1. Open the Home Screen.

2. Press \( \text{SEL} + 6 \).

   **NOTE**
   Shortcuts are disabled during playback.

3. Use \( \text{SEL} \) to adjust the volume.

   **NOTE**
   - Volume settings affect the results of recording.
   - If only the L/R track is recorded, the L/R track fader setting for the take will be saved as 0dB.

4. When finished adjusting, press \( \text{MENU} \) or \( \text{SEL} + 6 \).

   **NOTE**
   This is only enabled when Track Knob Option is not set to Fader. When set to Fader, you can adjust by using \( \text{SEL} \) to select.
## Monitoring the input signals of specific tracks (PFL/SOLO)

You can monitor the input signals of specified tracks. Even tracks that have not been set to record can be input to the PFL screen and their input sounds monitored. This is convenient when using tracks as return inputs. You can also make various settings for these tracks.

1. **Press [PFL] on the tracks that you want to monitor.**

   The selected track keys will light orange, and the PFL screen will open. "PFL" or "SOLO" appears at the top of the display, and you will be able to monitor the input signal with headphones.

   **NOTE**
   This does not change the signals output from MAIN OUT and SUB OUT.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Source</td>
<td>This sets the input source.</td>
</tr>
<tr>
<td>Input Level</td>
<td>This sets the input level.</td>
</tr>
<tr>
<td>Phantom</td>
<td>This sets phantom power.</td>
</tr>
<tr>
<td>HPF</td>
<td>This sets the high pass filter.</td>
</tr>
<tr>
<td>Input Limiter</td>
<td>This sets the limiter.</td>
</tr>
<tr>
<td>Fader</td>
<td>This sets the fader level.</td>
</tr>
<tr>
<td>Pan</td>
<td>This sets the panning.</td>
</tr>
<tr>
<td>Phase Invert</td>
<td>This sets the phase.</td>
</tr>
<tr>
<td>Side Mic Level</td>
<td>This sets the side mic level of a mid-side mic capsule.</td>
</tr>
<tr>
<td>Input Delay</td>
<td>This sets the input delay.</td>
</tr>
<tr>
<td>Plugin Power</td>
<td>This sets the plugin power.</td>
</tr>
<tr>
<td>Stereo Link</td>
<td>This sets the stereo link.</td>
</tr>
<tr>
<td>Stereo Link Mode</td>
<td>This sets the stereo link mode.</td>
</tr>
<tr>
<td>PFL Mode</td>
<td>This sets the monitoring volume on the PFL screen.</td>
</tr>
</tbody>
</table>

2. **Press [PFL] or [MENU] for the monitored tracks.**

   Open the Home Screen.

**HINT**

Use [ ] to select parameters and change setting values.
Setting the input source (Input Source)

Follow these procedures to set the input source of each track.

1. Press \[\text{MENU}\].

2. Use \[\text{○} \text{○} \] to select IN\text{PUT}, and press \[\text{○}\].

3. Use \[\text{○} \text{○} \] to select Input Source, and press \[\text{○}\].

4. Use \[\text{○} \text{○} \] to select a track, and press \[\text{○}\].

5. Use \[\text{○} \text{○} \] to select the input source, and press \[\text{○}\].

**HINT**
Select ALL to set all the tracks at the same time.

**Setting value** | **Explanation**
--- | ---
Mic | Select this when connecting a mic or other equipment with a low input level.
Line | Select this when connecting line level equipment. The input level will be reduced 20 dB compared to when "Mic" is selected.
USB 1, USB 2, USB 3, USB 4 | When Audio Out From USB (→ P.147) is set to On, computer output signals are treated as input signals.

**NOTE**
- When a mic capsule is connected, the Input Source cannot be changed for Inputs 1 and 2.
- When dual channel recording is enabled (→ P.33), the Input Source cannot be changed for the dual channel recording tracks.
Setting the monitoring volume on the PFL screen (PFL Mode)

On the PFL screen, you can set the monitored sound to be either prefader listening (PFL) or postfader solo (SOLO).

1. Press \( \text{MENU} \).

2. Use \( \text{ } \) to select INPUT, and press \( \text{ } \).

3. Use \( \text{ } \) to select PFL Mode, and press \( \text{ } \).

4. Use \( \text{ } \) to select the track, and press \( \text{ } \).

5. Use \( \text{ } \) to select the mode, and press \( \text{ } \).

HINT
Select ALL to set all the tracks at the same time.

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFL</td>
<td>Monitor the prefader sound.</td>
</tr>
<tr>
<td>SOLO</td>
<td>Monitor the postfader sound.</td>
</tr>
</tbody>
</table>

NOTE
When the PFL screen is open during playback, the monitoring sound will be post-fader (SOLO) regardless of the setting.
Cutting low-frequency noise (HPF)

The high pass filter can cut low frequencies to reduce the sound of wind, vocal pops and other noise.

1. Press \textbf{MENU}.

2. Use \textbullet{} to select \textbf{INPUT}, and press \textbullet{}.

3. Use \textbullet{} to select \textbf{HPF}, and press \textbullet{}.

4. Use \textbullet{} to select the input, and press \textbullet{}.

5. Use \textbullet{} to set the cutoff frequency, and press \textbullet{}.

\textbf{HINT}
Select ALL to set all inputs at the same time.

\textbf{NOTE}
The HPF also affects dual channel recording data.

\textbf{HINT}
This can be set to Off or between 10 and 240 Hz.
**Input limiter**

The limiter can prevent distortion by controlling input signals that have excessively high levels.

When the limiter is ON, if the input signal level exceeds the set threshold value, the signal level will be suppressed to prevent the sound from distorting.

The attack time is how long after the signal exceeds the threshold before the limiter starts operating. The release time is how long after the signal goes below the threshold before the limiter stops operating. You can change these two parameters to adjust the sound quality.

**HINT**

The F8n has a newly designed limiter that provides 10 dB of headroom, allowing signals to be kept well below the set threshold, therefore more effectively preventing distortion.

1. Press **MENU**.

2. Use ✂ to select **INPUT**,
   and press ✂.

3. Use ✂ to select **Input Limiter**, and press ✂.

4. Use ✂ to select the input,
   and press ✂.

**HINT**

Select **ALL** to set all the inputs at the same time.
Using the limiter

5. Use ( ) to select On/Off, and press ( ).

6. Use ( ) to select the setting, and press ( ).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>This disables the limiter.</td>
</tr>
<tr>
<td>On (Normal)</td>
<td>This applies an ordinary limiter. The ratio is 20:1.</td>
</tr>
<tr>
<td>On (Advanced)</td>
<td>By detecting the maximum level in advance, this optimized limiter prevents distortion even more than ordinary limiter operation. The ratio is ( \infty:1 ), providing increased internal headroom.</td>
</tr>
</tbody>
</table>

**NOTE**

When sent to On (Advanced), the input latency of the F8n increases 1 ms. When monitoring sounds being recorded with a mic in real-time, increased latency can cause interference between sound transmitted through the air from the source and the delayed monitored sound, possibly making accurate monitoring of the sounds difficult.
Setting the type

5. Use \(\textcircled{\text{1}}\) to select Type, and press \(\textcircled{\text{2}}\).

6. Use \(\textcircled{\text{1}}\) to select the type, and press \(\textcircled{\text{2}}\).

### Setting value

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Knee</td>
<td>Only peaks that exceed the threshold are attenuated. There is no effect below the threshold.</td>
</tr>
<tr>
<td>Soft Knee</td>
<td>The limiter gradually affects the signal about 6 dB below the threshold for a gentler effect.</td>
</tr>
</tbody>
</table>

**NOTE**

This setting can be made when On/Off is set to On (Normal).

**NOTE**

- When set to On (Advanced), the Sample Rate cannot be set to 192 kHz. Moreover, when the Sample Rate is set to 192 kHz, the On (Advanced) setting cannot be selected.

---

F8n Multi Track Field Recorder

**Input settings**

**Input limiter**
Input limiter (continued)

Setting the attack time
This sets the amount of time until limiting starts after the input signal exceeds the threshold.

5. Use ☐ to select Attack Time, and press ☐.

6. Use ☐ to adjust the time, and press ☐.

HINT
This can be set from 1 to 4 ms.

NOTE
This setting can be made when On/Off is set to On (Normal).

Setting the threshold
This sets the level at which the limiter begins operating.

5. Use ☐ to select Threshold, and press ☐.

6. Use ☐ to adjust the setting, and press ☐.

HINT
This can be set from −16 to −2 dBFS.

NOTE
This setting can be made when On/Off is set to On (Normal).
Setting the release time
This sets the amount of time until limiting stops after the input signal goes below the threshold.

5. Use \( \text{旋} \) to select Release Time, and press \( \text{旋} \).

6. Use \( \text{旋} \) to adjust the time, and press \( \text{旋} \).

**HINT**
- Limiter operation is linked for tracks that have stereo link or MS stereo link enabled. If the signal for either linked channel reaches the threshold, the limiter will operate on both tracks.
- When the limiter is operating, the right-most segment of the level meter and the mixer limiter indicator on the display light yellow.

**NOTE**
This setting can be made when On/Off is set to On (Normal).
**Input limiter** (continued)

Setting the target level

When the limiter On/Off setting is set to On (Advanced), use this to set the target output level for the signal.

5. Use to select Target Level, and press .

6. Use to adjust the setting, and press MENU.

**HINT**

- This can be set from $-16$ to 0 dBFS.
- After a signal passes through the limiter, it will not exceed the set target level value.

**NOTE**

This setting becomes available when On/Off is set to On (Advanced).
Inverting the input phase (Phase Invert)

The phase of the input signal can be inverted. This is useful when sounds cancel each other out due to mic positioning.

1. Press [MENU].

2. Use [ ] to select INPUT, and press [ ].

3. Use [ ] to select Phase Invert, and press [ ].

4. Use [ ] to select the input, and press [ ].

5. Use [ ] to select On, and press [ ].

HINT
Select ALL to set all inputs at the same time.
The **F8n** can provide phantom power. The voltage can be set to +24V or +48V and it can be turned on/off for each input separately.

**HINT**

Phantom power is a function that supplies power to devices that require an external power supply, including some condenser mics. The standard power is +48V, but some devices can operate with lower voltages.

**NOTE**

Do not use this function with a device that is not compatible with phantom power. Doing so could damage the device.

1. **Press** 
   
   2. **Use** 
      
      3. **Use** 
         
         ▶ Continue to one of the following procedures.

<table>
<thead>
<tr>
<th>Using phantom power</th>
<th>P.91</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting the voltage</td>
<td>P.91</td>
</tr>
<tr>
<td>Disabling phantom power during playback</td>
<td>P.92</td>
</tr>
</tbody>
</table>
**Setting the voltage**

4. Use \( \uparrow \) to select Voltage (For All Inputs), and press \( \circ \).

5. Use \( \uparrow \) to select the voltage, and press \( \circ \).

**HINT**

When using mics and other equipment that can operate with voltages less than +48V, selecting +24V can reduce power consumption by the F8n.

---

**Using phantom power**

4. Use \( \uparrow \) to select On/Off, and press \( \circ \).

5. Use \( \uparrow \) to select the input, and press \( \circ \).

**HINT**

Select ALL to set all inputs at the same time.

6. Use \( \uparrow \) to select On, and press \( \circ \).

**NOTE**

When a mic capsule is connected, phantom power is set to Off for inputs 1/2.
Disabling phantom power during playback

4. Use \( \) to select Power Saving (For All Inputs), and press \( \).

5. Use \( \) to select On (Phantom off during playback), and press \( \).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Phantom power is supplied even during playback.</td>
</tr>
<tr>
<td>On (Phantom off during playback)</td>
<td>Phantom power is not supplied during playback.</td>
</tr>
<tr>
<td></td>
<td>This can reduce the F8(n) power consumption.</td>
</tr>
</tbody>
</table>

**HINT**
If mics do not need phantom power during playback, disabling it can reduce F8\(n\) power consumption.

**NOTE**
This setting affects all inputs.
**Changing the plugin power setting (Plugin Power)**

Make this setting when a mic that is compatible with plug-in power is connected to the mic capsule’s MIC/LINE input jack.

1. Press **MENU**.

2. Use **○** to select **INPUT**, and press **△**.

3. Use **○** to select **Plugin Power**, and press **△**.

4. Use **○** to select **On**, and press **△**.

**NOTE**

This setting can be changed only when a mic capsule that supports plug-in power is connected.
Delaying input signals (Input Delay)

If there are differences in the timing of input signals, use this function to correct them when recording.

1. Press [MENU].

2. Use [ ] to select INPUT, and press [ ].

3. Use [ ] to select Input Delay, and press [ ].

4. Use [ ] to select the input, and press [ ].

   HINT
   Select ALL to set all inputs at the same time.

5. Use [ ] to adjust the delay time, and press [MENU].

   HINT
   This can be set from 0 to 30.0 ms.

NOTE
When Sample Rate is set to 192kHz, Input Delay is disabled.
Converting mid-side input to ordinary stereo (Stereo Link Mode)

Signals from a mid-side stereo mic input connected to stereo-linked inputs can be converted to an ordinary stereo signal. See "Linking inputs as a stereo pair" (→ P.27) for how to use stereo linking.

Mid-side stereo format overview

This technique creates a stereo recording from signals input by a directional mid mic that captures sound in the center and a bidirectional side mic that captures sounds from the left and right. Mid-side recording allows you to change the stereo width by adjusting the level of the side mic.

Since this technique can capture a wide stereo image, it is ideal for recording open spaces with numerous sound sources, such as orchestras, live concerts and soundscapes.

Mid-side recording is also extremely effective when you want to be able to control the amount of room ambience in a signal. For this reason, it is often used for live as well as studio recording. In addition, the stereo signal created by this technique is fully mono-compatible, making it especially useful when recording sound for film, video, or broadcast.

1. Press \( \text{MENU} \).

2. Use \( \text{ } \) to select \( \text{INPUT} \), and press \( \text{ } \).

3. Use \( \text{ } \) to select \( \text{Stereo Link Mode} \), and press \( \text{ } \).
Converting mid-side input to ordinary stereo (Stereo Link Mode) (continued)

4. Use \( \uparrow \) to select the input pair, and press \( \downarrow \).

HINT
Select ALL to set all input pairs at the same time.

5. Use \( \uparrow \) to select MS Stereo Link, and press \( \downarrow \).

HINT
- Use \( \uparrow \) for each input to adjust the mid/side balance.
- The PFL screen allows you to adjust the side mic level for inputs 1/2 when a mid-side mic capsule is connected.

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stereo Link</td>
<td>When stereo-linked, inputs are handled normally.</td>
</tr>
<tr>
<td>MS Stereo Link</td>
<td>When stereo-linked, signals from a mid-side mic are converted to ordinary stereo.</td>
</tr>
</tbody>
</table>
Adjusting the input levels of multiple tracks simultaneously (Trim Link)

The input levels of multiple tracks can be linked and adjusted at the same time.

1. Press [MENU].

2. Use [ ] to select INPUT, and press [ ].

3. Use [ ] to select Trim Link, and press [ ].

4. Use [ ] to select a track to link, and press [ ].

HINT
- You can also open the Trim Link screen from the Home Screen by pressing [ ] while pressing and holding [ ].

HINT
- When Track Knob Option is not set to Fader, you can use [ ] for the first track in a link group to adjust all the input levels within that group at the same time.
- Icons for group names are shown next to linked tracks.

NOTE
- A track cannot be in more than one group at a time.
- The input levels of tracks set to MS Stereo Link will also be linked if those tracks are put into groups.
- The input levels of tracks that have a mic capsule connected will not be linked even if those tracks are put into groups.
Adjusting the side level of a mid-side mic capsule (Side Mic Level)

You can adjust the side mic level (stereo width) before recording when a mid-side mic capsule is connected.

1. Press PFL for track 1 or 2.

2. Use ○ to select Side Mic Level, and press ↘.

3. Use ○ to adjust the side mic level, and press MENU.

**NOTE**
- The more the side mic level is increased, the greater the stereo width.
- When set to RAW, recording will occur without stereo encoding. The stereo width of audio in RAW format can be adjusted after recording by using ZOOM MS Decoder or other plug-in software.
- This can be adjusted only when a mid-side type mic capsule is connected.

**HINT**
When dual channel recording is on, the side mic level can also be set for tracks 5/6, which correspond to tracks 1/2.

**HINT**
This can be set to Off, RAW or in a range from −24 to +6 dB.
Changing the automatic mixing setting (Auto Mix)

When using multiple mics to capture audio during a meeting, for example, automatically attenuating the inputs of mics that are not in active use provides the following benefits.

- The likelihood of feedback is reduced.
- Background noise, including fans and crowds is suppressed to a certain level regardless of the number of people using mics.
- Sound quality degradation due to phase differences caused by variations in the distances of multiple mics is reduced.

1. Press **MENU**.

2. Use **** to select **INPUT**, and press ****.

3. Use **** to select **Auto Mix**, and press ****.

4. Use **** to select a track, and press ****.

5. Use **** to select **On**, and press ****.

**HINT**

Select ALL to set all the tracks at the same time.

**NOTE**

- The following functions and settings cannot be used with this function.
  - The sampling rate cannot be set to 192 kHz.
  - The Ambisonic Mode format cannot be set to any value other than Off.
- When the sampling rate is set to 44.1–48.048 kHz and Auto Mix is set to On, the **F8n** latency will increase 2 ms.
- When monitoring sounds being recorded with a mic in real-time, increased latency can cause interference between sound transmitted through the air from the source and the delayed monitored sound, possibly making accurate monitoring of the sounds difficult.
When Track Knob Option is set to Fader and Auto Mix is enabled, the Home Screen will appear as follows.

Meters that show the amount of attenuation due to Auto Mix

<Track Knob Option: Fader>
Setting the format of Ambisonic Mode

By connecting mics that can output ambisonics A-format signals to Inputs 1–4, audio can be converted to ambisonics B-format and recorded.

1. Press \texttt{MENU}.

2. Use \texttt{ } to select \texttt{INPUT}, and press \texttt{ }.

3. Use \texttt{ } to select \texttt{Ambisonic Mode}, and press \texttt{ }.

4. Use \texttt{ } to select \texttt{Format}, and press \texttt{ }.

5. Use \texttt{ } to select the format, and press \texttt{ }.
**Setting the format of Ambisonic Mode (continued)**

**FuMa**
This converts the signals from Inputs 1-4 to the ambisonics FuMa B-format, and saves them as a 4-channel polyphonic file.

**AmbiX**
This converts the signals from Inputs 1-4 to the ambisonics AmbiX B-format, and saves them as a 4-channel polyphonic file.

**Ambisonics A (Stereo Monitor)**
This saves the signals from Inputs 1-4 as a 4-channel polyphonic file without converting them to an ambisonics B-format. The monitoring signal is converted to ambisonics B-format and then to an ordinary stereo signal.
**FuMa(Dual)**

This converts the signals from Inputs 1-4 to the ambisonics FuMa B-format, and saves them as a 4-channel polyphonic file.

**AmbiX(Dual)**

This converts the signals from Inputs 1-4 to the ambisonics AmbiX B-format, and saves them as a 4-channel polyphonic file.

**FuMa + AmbiX**

This converts the signals from Inputs 1-4 to the ambisonics FuMa B-format, and records them to tracks 1-4. It also converts the signals from Inputs 1-4 to the ambisonics AmbiX B-format, and records them to tracks 5-8. These can be recorded at different input levels.

**FuMa + Ambisonics A**

This converts the signals from Inputs 1-4 to the ambisonics FuMa B-format, and records them to tracks 1-4. It also records the signals from Inputs 1-4 to tracks 5-8 without converting them to an ambisonics B-format. These can be recorded at different input levels.

**AmbiX + Ambisonics A**

This converts the signals from Inputs 1-4 to the ambisonics AmbiX B-format, and records them to tracks 1-4. It also records the signals from Inputs 1-4 to tracks 5-8 without converting them to an ambisonics B-format. These can be recorded at different input levels.
**Setting the format of Ambisonic Mode**

**NOTE**
- The sampling rate can only be set to 192 kHz when the format of Ambisonic Mode is Off.
- Ambisonic files are saved as 4-channel polyphonic files, not as mono or stereo files.
- A ZOOM mic capsule can only be used when the format of Ambisonic Mode is Off.
- The following parameters cannot be set for tracks using Ambisonic Mode input.
  - Pan
  - Phase Invert
  - Side Mic Level
  - Input Delay
  - Stereo Link
  - Stereo Link Mode
  - Dual Channel Rec
  - Trim Link
- Files recorded when the format of Ambisonic Mode is not Off will play back as ambisonic audio sources rather than ordinary 4-channel polyphonic files. For this reason, these tracks cannot be panned or muted during playback.
- When the sampling rate is set to 44.1–48.048 kHz and Ambisonic Mode is not set to Off, the F8n latency will increase 2 ms. When monitoring sounds being recorded with a mic in real-time, increased latency can cause interference between sound transmitted through the air from the source and the delayed monitored sound, possibly making accurate monitoring of the sounds difficult.
- This cannot be used with the Auto Mix function.

**HINT**
- Ambisonic Mode can be set during use as an audio interface (MultiTrack).
- Even when the format of Ambisonic Mode is Off, you can press track \[PFL\] to monitor their input sounds. When PFL mode is set to PFL, you can monitor sounds before they are converted to ambisonics B-format. When PFL mode is set to SOLO, you can monitor sounds after they are converted to ambisonics B-format.
- The input enabled/disabled statuses of the Ambisonic Mode input tracks are linked, so the settings of all assigned tracks can be switched simultaneously by pressing any of their track keys.
- The following parameters that can be set on the PFL screen are linked for input tracks using Ambisonic Mode.
  - HPF
  - Input Limiter
  - Phantom
  - Fader
  - PFL Mode
  - Input Source
  - Input Level
When Ambisonic Mode is enabled, the Home Screen will appear as follows.
Setting the mic position used for ambisonic recording (Mic Position)

By setting the mic orientation used during ambisonic recording as an $F^{8}_N$ parameter, proper positioning can be maintained when converting to ambisonic B format if the mic orientation is changed from upright to upside down or horizontal.

1. Press $\text{MENU}$.

2. Use $\bigcirc$ to select INPUT, and press $\bigcirc$.

3. Use $\bigcirc$ to select Ambisonic Mode, and press $\bigcirc$.

4. Use $\bigcirc$ to select Mic Position, and press $\bigcirc$.

5. Use $\bigcirc$ to select the mic orientation, and press $\bigcirc$.

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upright</td>
<td>Use this setting to record with the mic upright.</td>
</tr>
<tr>
<td>Upside Down</td>
<td>Use this setting to record with the mic upside down.</td>
</tr>
<tr>
<td>Endfire</td>
<td>Use this setting to record with the mic oriented horizontally.</td>
</tr>
</tbody>
</table>
HINT

- Using the mic upright is recommended for ambisonic recording in order to minimize reflections from the floor and the mic itself.
- When it is difficult to use the mic in an upright orientation, you can place it upside down or pointing forward and change the Mic Position setting accordingly.

NOTE

- If this setting and the mic position do not match, sound positioning will not be properly re-created during conversion to ambisonic B format.
**Setting signals sent to headphones (Headphone Routing)**

You can set the type of signal sent to the headphone output to either prefader or postfader for each track. You can also save 10 setting combinations (Setting 1 – Setting 10).

1. Press **MENU**.

2. Use **○** to select **OUTPUT**, and press **○**.

3. Use **○** to select **Headphone**, and press **○**.

4. Use **○** to select **Headphone Routing**, and press **○**.

5. Use **←** and **→** to select the setting you want to change.

**NOTE**
- You can also press **+** to open the Headphone Routing screen.
- You can edit and save up to 10 signal settings.
- Settings are saved automatically.

► Continue to one of the following procedures.

- Setting the routing ........................................ P.109
- Using mono headphone output .......................... P.110
- Monitoring mid-side stereo signals .................. P.110
Setting the routing

6. Use to select the tracks/outputs for headphone routing and press .

Mid-side stereo monitoring
Set tracks 1–8 to prefader (deactivates MS)

Cycles options:
• Change tracks 1–8 to postfader (cancels others)
• Change L/R to postfader (cancels others)
• Change M1/M2 to postfader (cancels others)
• Change S1/S2 to postfader (cancels others) (deactivates MS)
• Change U1–U4 to postfader (cancels others)

HINT
Press to cycle through the options:
Prefader → Postfader → Off.

NOTE
• You cannot set L/R, MAIN OUT 1/2 or SUB OUT 1/2 to prefader.
• When Audio Out From USB is set to On, USB tracks 1–4 can be assigned.
• You cannot select the 1–8, L/R, MAIN OUT 1/2, SUB OUT 1/2 and USB1–4 tracks at the same time. Selecting one will deselect any other.

7. Press .
Setting signals sent to headphones (Headphone Routing) (continued)

Using mono headphone output

6. Use to select MONO Mix, and press .

7. Press .

Monitoring mid-side stereo signals

Signals from a mid-side stereo mic can be converted to an ordinary stereo signal for monitoring.

6. Use to select MS, and press .

7. Press .

NOTE
• This is disabled for stereo-linked tracks that have Stereo Link Mode set to MS Stereo Link.
• This is only enabled for tracks that have a mid-side microphone or mid-side mic capsule connected and the Side Mic Level set to RAW.
• When mid-side stereo monitoring is enabled, the prefader tracks will be routed automatically to the headphone channels, with the odd-numbered to the left and the even-numbered to the right. In this case, the routing cannot be changed manually.
Outputting alerts through headphones (Alert Tone Level)

The volume can be adjusted for alerts output to headphones when, for example, recording starts and stops.

1. Press **MENU**.

2. Use **○** to select **OUTPUT**, and press **○**.

3. Use **○** to select **Headphone**, and press **○**.

4. Use **○** to select **Alert Tone Level**, and press **○**.

5. Use **○** to adjust the volume, and press **MENU**.

**HINT**
- This can be set to Off or between −48 and −12 dBFS.
- When set to Off, no alerts will be output.

<table>
<thead>
<tr>
<th>When alerts sound</th>
<th>Sound type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remaining battery low</td>
<td>880Hz tone 4 times every 30 seconds</td>
</tr>
<tr>
<td>Recording starts</td>
<td>1000Hz tone 1 time</td>
</tr>
<tr>
<td>Recording stops</td>
<td>880Hz tone 2 times</td>
</tr>
<tr>
<td>Recording not possible</td>
<td>880Hz tone 3 times</td>
</tr>
</tbody>
</table>
Setting the headphone output Volume Curve

The volume curve used when adjusting the headphone volume knob can be set.

1. Press \( \text{MENU} \).

2. Use \( \text{○} \) to select OUTPUT, and press \( \text{○} \).

3. Use \( \text{○} \) to select Headphone, and press \( \text{○} \).

4. Use \( \text{○} \) to select Volume Curve, and press \( \text{○} \).

5. Use \( \text{○} \) to select the volume curve, and press \( \text{○} \).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear</td>
<td>The volume will change evenly from the minimum value to the maximum value.</td>
</tr>
<tr>
<td>A Curve</td>
<td>The closer the volume is to its minimum position, the more rapidly it will change.</td>
</tr>
<tr>
<td>S Curve</td>
<td>The closer the volume is to its center position, the more rapidly it will change.</td>
</tr>
</tbody>
</table>
Boosting the headphone output alleviates the interference of sound waves traveling through the air with the headphone monitoring signal, enabling more accurate monitoring of the sound being recorded.

1. Press \textbf{MENU}.

2. Use \textbf{\selectfont \textcircled{ } } to select \textbf{OUTPUT}, and press \textbf{\textcircled{ } }.

3. Use \textbf{\selectfont \textcircled{ } } to select \textbf{Headphone}, and press \textbf{\textcircled{ } }.

4. Use \textbf{\selectfont \textcircled{ } } to select \textbf{Digital Boost}, and press \textbf{\textcircled{ } }.

5. Use \textbf{\textcircled{ } } to adjust the amount of boost, and press \textbf{\textcircled{ } }.

\textbf{HINT}  
The amount of boost can be set from 0 to +24 dB.

\textbf{NOTE}  
In situations where the sound being recorded can be heard at the headphone monitoring position, sound waves traveling through the air can interfere with the sound heard from the headphones, altering the monitored sound. The more the sound heard through the headphones is delayed and the lower its volume, the greater the impact of the sound waves. Digital Boost adds a set boost volume to the adjusted headphone volume level, reducing the impact of the sound waves that travel through the air.
Disabling outputs (Output On/Off)

By disabling outputs that you are not using, you can reduce power consumption and increase the length of operation time when using batteries.

1. Press [MENU].

2. Use [ ] to select OUTPUT, and press [ ].

3. Use [ ] to select Output On/Off, and press [ ].

4. Use [ ] to select the output, and press [ ].

HINT
Select ALL to set all outputs at the same time.

5. Use [ ] to select Off, and press [ ].
Setting the standard output level (Output Level)

The standard output level can be changed.

1. Press \[ \text{MENU} \].

2. Use \( \text{ } \) to select OUTPUT, and press \( \text{ } \).

3. Use \( \text{ } \) to select Output Level, and press \( \text{ } \).

4. Use \( \text{ } \) to set the output type, and press \( \text{ } \).

HINT
Select ALL to set all outputs at the same time.

5. Use \( \text{ } \) to set the standard output level, and press \( \text{ } \).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line (+4 dBu)</td>
<td>This sets the standard level to +4 dBu. Only MAIN OUT1/2 can be selected.</td>
</tr>
<tr>
<td>Normal (−10 dBV)</td>
<td>This sets the standard level to −10 dBV.</td>
</tr>
<tr>
<td>Mic (−40 dBV)</td>
<td>This sets the standard level to −40 dBV. Only SUB OUT1/2 can be selected.</td>
</tr>
</tbody>
</table>
Setting output levels

The MAIN OUT 1/2 and SUB OUT 1/2 levels can be changed.

1. Open the mixer on the Home Screen. (→ P.11)

2. Use \( \text{to select a fader, and press } \) to open the MAIN OUT 1/2 and SUB OUT 1/2 settings screen.

3. Use \( \) to select a fader, and press \( \).

4. Use \( \) to adjust the output level, and press \( \).

HINT
- This can be set to Mute or from \(-48.0\) to \(+12.0\) dB.
- You can also check and adjust various output settings on the MAIN OUT and SUB OUT setting screen.
Delaying output signals (Output Delay)

By delaying audio outputs, you can correct timing differences for signals input to other devices from the F8n.

1. Press MENU.

2. Use to select OUTPUT, and press .

3. Use to select Output Delay, and press .

4. Use to select the output, and press .

HINT
Select ALL to set all outputs at the same time.

5. Use to adjust the delay in frames, and press MENU.

HINT
This can be set from 0.0 to 10.0 frames.

NOTE
• The delay in milliseconds depends on the frame rate of the selected timecode.
• When Sample Rate is set to 192kHz, Output Delay is disabled.
Output Limiter

Using a limiter on the output can protect devices connected to the output jacks.

HINT
For details about the effect of the limiter, see "Input limiter". (→ P.83)

1. Press \[ Menu \].

2. Use \[ \] to select OUTPUT, and press \( \).

3. Use \[ \] to select Output Limiter, and press \( \).

4. Use \[ \] to select the output, and press \( \).

HINT
Select ALL to set all outputs at the same time.

▶ Continue to one of the following procedures.

Using the limiter ................................................................. P.118
Setting the type ................................................................. P.119
Setting the threshold ......................................................... P.119
Setting the attack time ...................................................... P.120
Setting the release time ..................................................... P.120
Setting links ..................................................................... P.121

Using the limiter

5. Use \[ \] to select On/Off, and press \( \).

6. Use \[ \] to select On, and press \( \).

Using a limiter on the output can protect devices connected to the output jacks.
Setting the type

5. Use to select Type, and press .

6. Use to select the type, and press .

Setting the threshold

This sets the level at which the limiter begins operating.

5. Use to select Threshold, and press .

6. Use to adjust the setting, and press .

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Knee</td>
<td>Only peaks that exceed the threshold are attenuated. There is no effect below the threshold.</td>
</tr>
<tr>
<td>Soft Knee</td>
<td>The limiter gradually affects the output signal about 6 dB below the threshold for a gentler effect.</td>
</tr>
</tbody>
</table>

HINT

This can be set from −16 to −2 dBFS.
**Output Limiter** (continued)

### Setting the attack time
This sets the amount of time until limiting starts after the output signal exceeds the threshold.

5. Use **to select** Attack Time, and press **.**

6. Use ** to adjust the time, and press **.**

**HINT**
This can be set from 1 to 4 ms.

### Setting the release time
This sets the amount of time until limiting stops after the output signal goes below the threshold.

5. Use ** to select** Release Time, and press **.**

6. Use ** to adjust the time, and press **.**

**HINT**
This can be set from 1 to 500 ms.
Setting links

The limiter can be linked or applied separately to MAIN OUT 1 and MAIN OUT 2, as well as to SUB OUT 1 and SUB OUT 2.

5. Use to select Link, and press .

6. Use to select Off, and press .

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Separates limiter operation.</td>
</tr>
<tr>
<td>On</td>
<td>Links limiter operation. If the signal for either linked signal reaches the threshold, the limiter will operate on both channels.</td>
</tr>
</tbody>
</table>
### Selecting signals sent to the main outputs (MAIN OUT Routing)

You can send either prefader or postfader signals for each track to the main outputs.

1. Press **MENU**.

2. Use **○** to select **OUTPUT**, and press **●**.

3. Use **○** to select **MAIN OUT Routing**, and press **●**.

4. Use **○** to select the track for MAIN OUT 1 or MAIN OUT 2 routing and press **●**.

5. Press **MENU**.

---

**HINT**

Press **○** to cycle through the options: Prefader → Postfader → Off.

**NOTE**

- When Audio Out From USB is set to On, USB tracks 1–4 can be assigned.
- Tracks 1–8 can be set to Prefader or Postfader.
- The L/R tracks can only be set to Postfader.
- Tracks 1–8, L/R, and USB1–4 cannot be set at the same time. Selecting one type will deselect the other.
- When mid-side stereo monitoring is enabled, the pre-fader tracks will be routed automatically to the main outputs, with odd to the left and even to the right. In this case, the routing cannot be changed manually.
Selecting signals sent to the sub outputs (SUB OUT Routing)

You send either prefader or postfader signals for each track to the sub outputs.

1. Press \textbf{MENU}.

2. Use \textcircled{#} to select OUTPUT, and press \textuparrow{#}.

3. Use \textcircled{#} to select \textbf{SUB OUT Routing, and press \textuparrow{#}}.

4. Use \textcircled{#} to select the track for SUB OUT 1 or SUB OUT 2 routing and press \textuparrow{#}.

5. Press \textbf{MENU}.

### HINT

Press \textcircled{#} to cycle through the options:

- Prefader → Postfader → Off.

### NOTE

- When Audio Out From USB is set to On, USB tracks 1–4 can be assigned.
- Tracks 1–8 can be set to Prefader or Postfader.
- The L/R tracks can only be set to Postfader.
- Tracks 1–8, L/R, and USB1–4 cannot be set at the same time. Selecting one type will deselect the other.
- When mid-side stereo monitoring is enabled, the pre-fader tracks will be routed automatically to the sub outputs, with odd to the left and even to the right. In this case, the routing cannot be changed manually.
Timecode overview

The F8n can input and output SMPTE timecode. Timecode is time information written to data when recording video and audio. It is used for video editing, control of other devices, and synchronization of audio and video.

Using timecode for editing

If video and audio data both have recorded timecode, aligning them to a timeline and synchronizing them together is easy when using nonlinear editing software.

HINT

The F8n uses a precision oscillator that generates timecode with a high degree of accuracy (+/- 0.2 ppm, or approximately 0.5 frames per 24 hours).
**Connection examples**

Connections like the following are possible, depending upon the specific equipment being used with the **F8n**.

**Synchronizing with a video camera**

The **F8n** records with mic input and transmits timecode. The **F8n** saves the timecode that it generates with the audio data. The timecode received by the video camera is recorded with the video data.

**Inputting timecode**

Timecode is transmitted from an external timecode generator. Both the **F8n** and the video camera receive timecode and record it with their audio and video data. The input timecode can also be used to synchronize the **F8n** audio clock.
Setting timecode functions

1. Press \textbf{MENU}.

2. Use \textbf{○} to select \textbf{TIMECODE}, and press \textbf{○}.

3. Use \textbf{○} to select \textbf{Timecode}, and press \textbf{○}.

▶ Continue to one of the following procedures.

- Setting the mode ...............................................................P.127
- Stopping timecode output when recording is stopped .P.128
- Synchronizing audio clock with external timecode .......P.129
- Automatically enabling internal timecode when no external timecode is input .................................................P.129
- Setting the user bits for internal timecode .......................P.130
- Setting the frame rate for internal timecode ...................P.131
- Jamming internal timecode .............................................P.132
- Restarting internal timecode with a specified value ......P.132
Setting the mode

The timecode mode settings allow you to specify:

• Whether the F8n generates timecode or receives external timecode
• Whether or not timecode continues running when not recording

4. Use the knob to select **Mode**, and press the knob.

5. Use the knob to select **Mode**, and press the knob.

6. Use the knob to select the mode, and press the knob.

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>No timecode will be written to the recording file. Timecode will not be output from the TIMECODE OUT jack.</td>
</tr>
<tr>
<td>Int Free Run</td>
<td>Internal timecode will be generated regardless of the recording mode. The internal timecode can be set manually using the following menu items:  &lt;ul&gt;&lt;li&gt; MENU &gt; TIMECODE &gt; Timecode &gt; Jam&lt;/li&gt;&lt;li&gt; MENU &gt; TIMECODE &gt; Timecode &gt; Restart&lt;/li&gt;&lt;/ul&gt; Timecode will always be output from the TIMECODE OUT jack.</td>
</tr>
<tr>
<td>Int Record Run</td>
<td>Internal timecode will be generated only when recording. The internal timecode can be set manually using the following menu items:  &lt;ul&gt;&lt;li&gt; MENU &gt; TIMECODE &gt; Timecode &gt; Jam&lt;/li&gt;&lt;li&gt; MENU &gt; TIMECODE &gt; Timecode &gt; Restart&lt;/li&gt;&lt;/ul&gt; When switching from another mode, or when recording stops, the internal timecode will stop at the last value.</td>
</tr>
<tr>
<td>Int RTC Run</td>
<td>Internal timecode will be generated regardless of the recording mode. In the following situations, the internal timecode will be synchronized (jammed) with the RTC (internal clock):  &lt;ul&gt;&lt;li&gt; At startup&lt;/li&gt;&lt;li&gt; When Date/Time (RTC) has changed (→ P.19)&lt;/li&gt;&lt;li&gt; When switching to this timecode mode&lt;/li&gt;&lt;/ul&gt; Timecode will always be output from the TIMECODE OUT jack.</td>
</tr>
<tr>
<td>Ext</td>
<td>The internal timecode will chase the external timecode. You can also enable the automatic generation of internal timecode when there is no external timecode. (→ P.129)</td>
</tr>
</tbody>
</table>
**Ext Auto Rec**

The internal timecode will chase the external timecode. You can also enable the automatic generation of internal timecode when there is no external timecode. (→ P.129)

Recording starts automatically when external timecode input is detected. Recording stops automatically when external timecode stops.

**Stopping timecode output when recording is stopped**

You can set whether or not timecode is output from the TIMECODE OUT jack when recording is stopped.

4. Use \( \circ \) to select **Mode**, and press \( \circ \).

5. Use \( \circ \) to select **Int Auto Mute**, and press \( \circ \).

6. Use \( \circ \) to select **On**, and press \( \circ \).

**NOTE**

- Timecode will continue to be output when recording/playback is paused.
- This cannot be set when Mode is set to Off, Int Record Run, Ext or Ext Auto Rec.
Synchronizing audio clock with external timecode

4. Use \( \circ \) to select \textit{Mode}, and press \( \uparrow \).

5. Use \( \circ \) to select \textit{Ext Audio Clock Sync}, and press \( \uparrow \).

6. Use \( \circ \) to select \textit{On}, and press \( \uparrow \).

NOTE
- This cannot be set when \textit{Mode} is set to Off, Int Free Run, Int Record Run or Int RTC Run.
- When there is no external timecode, the internal audio clock is enabled to preserve continuity.

Automatically enabling internal timecode when no external timecode is input

You can enable the automatic generation of internal timecode to preserve continuity when there is no external timecode.

4. Use \( \circ \) to select \textit{Mode}, and press \( \uparrow \).

5. Use \( \circ \) to select \textit{Ext Continuous}, and press \( \uparrow \).

6. Use \( \circ \) to select \textit{On}, and press \( \uparrow \).

NOTE
- This cannot be set when \textit{Mode} is set to Off, Int Free Run, Int Record Run or Int RTC Run.
Setting timecode functions (continued)

Setting the user bits for internal timecode

User bits are data that you can set to be included in the timecode. Up to 8 numbers (0–9) and letters (A–F) can be included. Recording date information, for example, can be useful when editing later.

**Setting the user bits (Ubits) mode**

4. Use \( \text{\( \rightarrow \)} \) to select Ubits, and press \( \text{\( \uparrow \)} \).

5. Use \( \text{\( \rightarrow \)} \) to select Mode, and press \( \text{\( \uparrow \)} \).

6. Use \( \text{\( \rightarrow \)} \) to select the mode, and press \( \text{\( \uparrow \)} \).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>uu uu uu uu</td>
<td>You can set these values as you like on the Edit screen.</td>
</tr>
<tr>
<td>mm dd yy uu</td>
<td>The month, day and year are entered automatically in that order using the RTC setting. You can set the &quot;uu&quot; value as you like on the Edit screen.</td>
</tr>
<tr>
<td>dd mm yy uu</td>
<td>The day, month and year are entered automatically in that order using the RTC setting. You can set the &quot;uu&quot; value as you like on the Edit screen.</td>
</tr>
<tr>
<td>yy mm dd uu</td>
<td>The year, month and day are entered automatically in that order using the RTC setting. You can set the &quot;uu&quot; value as you like on the Edit screen.</td>
</tr>
</tbody>
</table>

**HINT**

Only "uu" items can be changed.

Setting user bits (Ubits)

4. Use \( \text{\( \rightarrow \)} \) to select Ubits, and press \( \text{\( \uparrow \)} \).

5. Use \( \text{\( \rightarrow \)} \) to select Edit, and press \( \text{\( \uparrow \)} \).
6. Edit the value.

- Editing operations
  Move cursor or change value: Turn
  Select parameter to change: Press

**HINT**
User bits can only consist of numbers from 0 to 9 and letters from A to F.

7. When done changing the setting, use to select Enter, and press .

**Setting the frame rate for internal timecode**

4. Use to select FPS, and press .

5. Use to select the frame rate, and press .

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>23.976ND</td>
<td>This is the most common frame rate used with HD cameras and other high-definition video recording. The count is 0.1% slower than the actual time.</td>
</tr>
<tr>
<td>24ND</td>
<td>This is the standard frame rate used for recording film. This is also used with HD cameras.</td>
</tr>
<tr>
<td>25ND</td>
<td>This is the frame rate for PAL video. This is used for PAL video, which is used in Europe and other regions.</td>
</tr>
<tr>
<td>29.97ND</td>
<td>This is a frame rate used for NTSC color video and HD cameras. The count is 0.1% slower than the actual time. This is used for NTSC video, which is used in Japan, the United States and other countries.</td>
</tr>
<tr>
<td>29.97D</td>
<td>This is an adjusted frame rate that uses drop frames to make NTSC match the actual time. This is used with video for broadcast that requires the actual time frame to be matched.</td>
</tr>
<tr>
<td>30ND</td>
<td>This is used to synchronize sound with film that is being transferred to NTSC video. This is the standard frame rate used for black-and-white television in Japan, the United States and other countries.</td>
</tr>
<tr>
<td>30D</td>
<td>This rate is used for special applications. This synchronizes with film sound to be transferred to NTSC using 29.97fps drop frame. The count is 0.1% faster than the actual time.</td>
</tr>
</tbody>
</table>

**NOTE**
Matching frame rates must be set in advance on all connected video and audio devices.
Jamming internal timecode

Timecode input through the TIMECODE IN jack is used to set internal timecode.

4. Use \( \circ \) to select \textit{Jam}, and press \( \circ \).

5. Set the restart value.
   - Editing operations
     - Move cursor or change value: Turn \( \circ \)
     - Select parameter to change: Press \( \circ \)

6. Use \( \circ \) to select \textit{Restart}, and press \( \circ \).

Restarting internal timecode with a specified value

4. Use \( \circ \) to select \textit{Restart}, and press \( \circ \).

5. Set the restart value.
   - Editing operations
     - Move cursor or change value: Turn \( \circ \)
     - Select parameter to change: Press \( \circ \)
Setting automatic timecode recording delay (Auto Rec Delay Time)

If set to record automatically when external timecode is received, unnecessary recording could occur when timecode is received for a brief amount time. In order to prevent this, you can set the amount of time until recording starts after timecode is received.

1. Press \( \text{MENU} \).

2. Use \( \text{ } \) to select \( \text{TIMECODE} \), and press \( \text{ } \).

3. Use \( \text{ } \) to select \( \text{Auto Rec Delay Time} \), and press \( \text{ } \).

4. Use \( \text{ } \) to adjust the time, and press \( \text{MENU} \).

HINT
This can be set from 0.0 to 8.0 s.
Setting timecode initialization used at startup (Start Timecode)

Since internal timecode stops when the F8n is turned off, the timecode is automatically initialized (jammed) during startup. You can set the value that is used for jamming at that time.

1. Press MENU.

2. Use to select TIMECODE, and press .

3. Use to select Start Timecode, and press .

▶ Continue to one of the following procedures.

- Setting how timecode is initialized at startup .................P.134
- Correcting timecode errors after the power has been turned off .................................................................P.135

Setting how timecode is initialized at startup

4. Use to select Mode, and press .

5. Use to set how timecode is initialized, and press .

Setting value | Explanation
--- | ---
Restart Time | When the F8n starts, the value set by Restart (→ P.132) is used to jam the internal timecode.
RTC | When the F8n starts, its timecode is restored from the timecode when the power was turned off and advanced by the elapsed time using the Date/Time (RTC) setting (→ P.19). Since RTC is less precise than internal timecode, discrepancies will occur.
Correcting timecode errors after the power has been turned off

When the mode of Start Timecode is set to RTC, turning the power off lowers the timecode precision, but this function can be used to improve precision to within 0.2 ppm when the power has been turned off.

4. Use to select RTC Timecode Calibration, and press .

5. Use to select Recalibrate, and press .

6. Use to select Yes, and press .

7. Calibration completes.

8. To cancel calibration, press , and use to select Yes, and press .

NOTE

- The F8n is calibrated before being shipped new from the factory.
- After calibrating once, the result will be retained.
- If the F8n is moved to and used in an extremely hot or cold location, timecode precision could change slightly when the power is turned off. In such cases, we recommend calibrating it again.
- Calibration is not possible when Audio Out From USB is set to On.
- Calibration is only possible when Start Timecode mode is set to RTC.
- Calibration is not possible when an FRC-8 is connected.
When recording with the F8n, you can add audio comments that describe, for example, the scene being filmed or the anticipated cuts. You can also record slate tone signals that can be used to synchronize with video. The F8n has a built-in slate mic for recording comments and the ability to output a variable frequency tone signal.

HINT
A "slate" is a clapperboard used when recording video.

NOTE
- The slate mic and slate tone cannot be used at the same time.
- The slate mic and slate tone cannot be used during audio file playback.
**Recording with the slate mic (Slate Mic)**

You can use the built-in slate mic to record comments and to keep notes about recorded takes.

1. Press \( \text{MENU} \).

2. Use \( \) to select SLATE, and press \( \) .

3. Use \( \) to select Slate Mic, and press \( \) .

▶ Continue to one of the following procedures.

<table>
<thead>
<tr>
<th>Setting the volume</th>
<th>P.137</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting the routing</td>
<td>P.138</td>
</tr>
<tr>
<td>Recording</td>
<td>P.139</td>
</tr>
<tr>
<td>Disabling the slate mic</td>
<td>P.139</td>
</tr>
</tbody>
</table>

**Setting the volume**

4. Use \( \) to select Level, and press \( \) .

5. Use \( \) to adjust the level, and press \( \text{MENU} \) .

**HINT**

This can be set from 0 to 24 dB.
Setting the routing
Set the destination for the slate mic signal.

4. Use \( \circ \) to select Routing, and press \( \circ \).

5. Use \( \circ \) to select the tracks/outputs for slate mic signal routing and press \( \circ \).

6. Press \( \text{MENU} \).

**NOTE**
Routing to tracks 1–8 is not possible when operating the F8n as an audio interface (Stereo Mix).

**HINT**
Press \( \circ \) to switch between Postfader and Off.
Recording

4. Press \(\text{●} \) to start recording.

5. Push \(\text{←} \) left toward the mic symbol and release.

6. To disable the slate mic, push \(\text{←} \) left toward the mic symbol again and release.

Disabling the slate mic

You can set the slate mic so that it will not be enabled if it is accidentally pushed left toward the mic symbol.

4. Use \(\text{○} \) to select On/Off, and press \(\text{●} \).

5. Use \(\text{←} \) to select Off (Lock), and press \(\text{●} \).

NOTE

- When the slate mic is in use, other signals input to the tracks that it is routed to are muted.
- The slate mic signal is always routed to the headphone L/R channels regardless of other routing settings.
- The MAIN OUT 1/2 and SUB OUT 1/2 faders do not affect the levels of the slate mic and slate tone.

HINT

If you push and hold \(\text{←} \) left toward the mic symbol for two or more seconds, the slate mic will be enabled until you release the switch.
Recording a slate tone (Slate Tone)

By adding a slate tone when the recording starts, aligning audio to video during editing will be easier. You can also use a slate tone to coordinate levels with connected equipment.

1. Press [MENU].

2. Use  to select SLATE, and press  .

3. Use  to select Slate Tone, and press  .

▶ Continue to one of the following procedures.

Setting the volume

4. Use  to select Level, and press  .

5. Use  to adjust the level, and press [MENU].

HINT

This can be set from -20 to 0 dBFS.

Recording a slate tone (Slate Tone)

- Setting the volume .......................................................... P. 140
- Setting the frequency ..................................................... P. 141
- Setting the routing .......................................................... P. 141
- Recording ........................................................................... P. 142
- Disabling the slate tone ..................................................... P. 143

By adding a slate tone when the recording starts, aligning audio to video during editing will be easier. You can also use a slate tone to coordinate levels with connected equipment.
Setting the frequency

4. Use \( \text{Cursor} \) to select Frequency, and press \( \text{Enter} \).

5. Use \( \text{Cursor} \) to adjust the frequency, and press \( \text{Menu} \).

**HINT**

This can be set from 100 to 10,000 Hz.

---

Setting the routing

Set the destination for the slate tone signal.

4. Use \( \text{Cursor} \) to select Routing, and press \( \text{Enter} \).

5. Use \( \text{Cursor} \) to select the tracks/outputs for slate tone signal routing and press \( \text{Enter} \).

**NOTE**

Routing to tracks 1–8 is not possible when operating the F8n as an audio interface (Stereo Mix).
4. Press \( \bullet \) to start recording.

5. Push right toward the tone symbol and release.

**NOTE**
- When the slate tone is in use, other signals input to the tracks that it is routed to are muted.
- The slate tone signal is always routed to the headphone L/R channels regardless of other routing settings.
- The MAIN OUT 1/2 and SUB OUT 1/2 faders do not affect the levels of the slate mic and slate tone.

**HINT**
If you push and hold right toward the tone symbol for one or more seconds, the slate tone will be enabled until you push the switch toward the tone symbol again.
Disabling the slate tone

You can set the slate tone so that it will not be enabled if is accidentally pushed right toward the tone symbol.

4. Use to select On/Off, and press.

5. Use to select Off (Lock), and press.
Exchanging data with a computer (SD Card Reader)

By connecting the **F8n** to a computer, you can check and copy data on SD cards.

**Connecting to a computer**

1. Press \[\text{MENU}\].

2. Use \[\text{to select USB,}\] and press \[\text{.}\]

3. Use \[\text{to select SD Card Reader, and press .}\]

4. Connect the **F8n** and computer with a USB cable.

**NOTE**
- The following operating systems are supported:
  - Windows: Windows 7 or later
  - Mac OS: Mac OS X (10.8 or later)
- The **F8n** cannot operate on USB bus power. Use the internal batteries, the dedicated AC adapter or an external DC power supply to power it.

**HINT**
When the **F8n** is connected to a computer, the SD cards loaded in slots 1 and 2 are recognized as separate SD cards.

**Disconnecting**

1. **Disconnect on the computer.**
   - Windows: Select **F8n** from the “Safely Remove Hardware and Eject Media” icon on the bottom of the computer screen.
   - Mac OS: Drag and drop the **F8n** icon to the Trash.

2. **Disconnect the cable from the computer and the **F8n**, and press \[\text{MENU}\].**

**NOTE**
Always follow correct computer disconnection procedures before removing the USB cable.
Using as an audio interface (Audio Interface)

F8n input signals can be input directly to a computer or an iOS device, and playback signals coming from a computer or an iOS device can be output from the F8n.

Connecting to a computer or an iOS device

1. Press \[\text{MENU}\].

2. Use \[\text{○}\] to select USB, and press \[\uparrow\].

3. Use \[\text{○}\] to select Audio Interface, and press \[\uparrow\].

4. Use \[\text{○}\] to select the mode and connected device, and press \[\uparrow\].

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stereo Mix (PC/Mac)</td>
<td>This is a 2-in/2-out connection mode for Mac/Windows and sends tracks 1–8 as a stereo mix.</td>
</tr>
<tr>
<td>Stereo Mix (iPad)</td>
<td>This is a 2-in/2-out connection mode for iOS devices and sends tracks 1–8 as a stereo mix.</td>
</tr>
<tr>
<td>Multi Track (PC/Mac)</td>
<td>This is an 8-in/4-out connection mode for Mac/Windows and sends tracks 1–8 as separate signals (cannot be used with an iOS device). A driver is necessary for use with Windows. Download the driver from the ZOOM website (<a href="http://www.zoom.co.jp/">www.zoom.co.jp/</a>).</td>
</tr>
</tbody>
</table>

5. Use a USB cable to connect the F8n and the computer or iOS device.
 Disconnecting

1. Press \textit{MENU}.

2. Use \textit{ } to select \textit{Exit}, and press \textit{ }.

3. Use \textit{ } to select \textit{Yes}, and press \textit{ }.

4. Disconnect the cable from the computer or iOS device and the \textbf{F8n}.

\textbf{NOTE}

\begin{itemize}
  \item A Lightning to USB Camera Adapter is necessary to connect an iOS device.
  \item The \textbf{F8n} cannot operate on USB bus power. Use the internal batteries, the dedicated AC adapter or an external DC power supply to power it.
  \item When the \textbf{F8n} is used as an audio interface and the sampling rate is set to 44.1/48 kHz, latency increases 2 ms. When latency increases while monitoring sounds being recorded with a mic in real-time, interference occurs between sound transmitted through the air from the source and the delayed monitored sound, possibly making accurate monitoring of the sounds difficult.
\end{itemize}
Using SD card recording and audio interface functions at the same time (Audio Out from USB)

In addition to the two SD cards, a computer can also be used for recording backup.

Connecting

1. Press \( \text{MENU} \).

2. Use \( \) to select USB, and press \( \).

3. Use \( \) to select Audio Out from USB, and press \( \).

4. Use \( \) to select On, and press \( \).

5. Use a USB cable to connect the F8n and the computer.
NOTE

• The F8n cannot operate on USB bus power. Use the internal batteries, the dedicated AC adapter or an external DC power supply to power it.

• Audio Out from USB cannot be used with the following settings and functions.
  - Sampling rate settings other than 44.1/48 kHz
  - SD Card Reader (→ P.144)
  - Audio Interface (→ P.145)
  - FRC-8 (→ P.152)

• A driver is necessary for use with Windows. Download the driver from the ZOOM website (www.zoom.co.jp/).

• When Audio Out From USB is set to On, the sampling rate cannot be changed.

• When Audio Out From USB is set to On, files with sampling rates that differ from the F8n setting cannot be played.

• Set the input source to USB1–4 (→ P. 80) or set USB1–4 to the output routing (→ P109, 122, 123) to monitor sound played back from the computer. (→ P. 80)

• When Audio Out from USB is set to On, the F8n latency will increase 2 ms. When monitoring sounds being recorded with a mic in real-time, increased latency can cause interference between sound transmitted through the air from the source and the delayed monitored sound, possibly making accurate monitoring of the sounds difficult.

Disconnecting

1. Press \text{MENU}.

2. Use \text{ } to select \text{ Off}, and press \text{ }.

3. Disconnect the cable from the computer and the F8n.
Audio interface block diagrams

Stereo Mix

Input 1
Input 2
...:
Input 7
Input 8

Trim
HPF
Input Limiter
Phase Invert
MS Stereo
Input Delay
Tr1-8 Fader
Pan
Mixer
Tr LR Fader

PC (Input)

Output

Loop Back

Slate Mic/Tone

PC (Output)

Channel 1
Channel 2

MAIN OUT
1/2 jacks

SUB OUT
1/2 jack

HEADPHONE jack

Output On/Off, Level
Alert Tone

Output Limiter

Stereo Mix

Using USB functions

Audio interface block diagrams
Multi Track

Input 1
Input 2
... 
Input 7
Input 8

Trim
HPF
Input Limiter
Phase Invert
MS Stereo
Input Delay

Output On/Off, Level
Input Limiter
Phase Invert
MS Stereo
HPF
Input Limiter
Trim

PC (Input)
PC (Output)
Main Track

Channel 1
Channel 4

Output
Postfader
Prefader

Output
Output On/Off, Level
Output Limiter
Alert Tone
Slate Mic/Tone
Level

Routing

Multi Track

MAIN OUT 1/2 jacks
SUB OUT 1/2 jack
HEADPHONE jack

Audio interface block diagrams (continued)
Audio interface settings

The following settings can be made when using the F8n as an audio interface. See the relevant pages for details about operation.

Setting loop back (Stereo Mix only)

This function allows the playback sound from the computer or iOS device and the F8n inputs to be mixed and sent back to the computer or iOS device (loop back). You can use this function to add narration to music played back from the computer and record the mix or stream it from the computer, for example.

1. Press \textbf{MENU}.

2. Use \textbf{ } to select \textbf{LOOP BACK}, and press \textbf{ }.

3. Use \textbf{ } to select \textbf{On}, and press \textbf{ }.

Mixing inputs

You can adjust the mix balance of input signals sent to the computer or iOS device. When using Multitrack mode, the individual inputs will be sent. When using Stereo Mix mode, the mixed stereo signal will be sent.

1. Open the mixer on the Home Screen. (→ P.11)

2. Adjust the parameter settings.

See “Adjusting the input signal monitoring balance” (→ P.75) for how to change settings.
Using an **FRC-8** as a controller (Connect)

By connecting an **FRC-8** to the **F8n**, you can use it to adjust trim, fader and pan settings, for example.

1. **Press** [MENU].

2. **Use** [ ] to select **USB**, 
   and press [ ].

3. **Use** [ ] to select **FRC-8**, 
   and press [ ].

4. **Use** [ ] to select **Connect**, 
   and press [ ].

5. **Use a USB cable to connect the F8n and** 
   the **FRC-8**.

6. **Turn the FRC-8 power ON.**

**NOTE**
When disconnecting the **FRC-8**, select "Disconnect" before unplugging the USB cable.
**Setting the type of keyboard connected to the FRC-8 (Keyboard Type)**

You can connect a PC keyboard to the FRC-8 and use it to input characters. Set the type of PC keyboard connected to the FRC-8.

1. Press \(\text{MENU}\).

2. Use \(\uparrow\) to select USB, and press \(\text{OK}\).

3. Use \(\uparrow\) to select FRC-8, and press \(\text{OK}\).

4. Use \(\uparrow\) to select Keyboard Type and press \(\text{OK}\).

5. Use \(\uparrow\) to select the type, and press \(\text{OK}\).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>Use for English-language keyboards.</td>
</tr>
</tbody>
</table>
Setting FRC-8 fader and knob operation (Knob/Fader Mode)

How the FRC-8 faders and TRIM/PAN knobs operate when their positions differ from actual parameter values can be set.

1. Press \( \text{MENU} \).

2. Use \( \text{○} \) to select USB, and press \( \text{○} \).

3. Use \( \text{○} \) to select FRC-8, and press \( \text{○} \).

4. Use \( \text{○} \) to select Knob/Fader Mode, and press \( \text{○} \).

5. Use \( \text{○} \) to select the FRC-8 fader and knob operation, and press \( \text{○} \).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute</td>
<td>When a knob or fader is operated, the parameter value will change to the value shown by that knob or fader.</td>
</tr>
<tr>
<td>Safety</td>
<td>When a knob or fader is operated, the parameter value will not change until the knob or fader first matches that value.</td>
</tr>
</tbody>
</table>

**NOTE**
The FRC-8 headphone volume operation cannot be changed.
Setting user keys for the FRC-8 (User Key)

You can assign functions to the FRC-8 user keys.

1. Press \text{MENU}.

2. Use \textcircled{1} to select USB, and press \textcircled{2}.

3. Use \textcircled{1} to select FRC-8, and press \textcircled{2}.

4. Use \textcircled{1} to select User Key, and press \textcircled{2}.

5. Use \textcircled{1} to select the key to which to assign a function, and press \textcircled{2}.

6. Use \textcircled{1} to select the function to assign, and press \textcircled{2}.

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>No function is assigned.</td>
</tr>
<tr>
<td>Slate Mic</td>
<td>Enable and disable the slate mic.</td>
</tr>
<tr>
<td>Slate Tone</td>
<td>Generate and stop slate tones.</td>
</tr>
<tr>
<td>Mark</td>
<td>Add marks to WAV format takes during recording and playback.</td>
</tr>
<tr>
<td>Set Trim Link</td>
<td>Open the MENU &gt; INPUT &gt; Trim Link screen.</td>
</tr>
<tr>
<td>Hold</td>
<td>Use to disable the keys set with &quot;Key Hold Target&quot;.</td>
</tr>
<tr>
<td>Clear Clip Indicator</td>
<td>Clear the level meter clipping indicators.</td>
</tr>
<tr>
<td>Circled</td>
<td>Circle the currently selected take.</td>
</tr>
</tbody>
</table>
Setting the power supply used by the FRC-8 (Power Source)

Set the DC power supply shutdown voltage, nominal voltage and type of batteries so that the remaining power supply charge can be shown accurately. On this menu page, you can check the voltage of each power supply and the remaining battery capacity.

1. Press MENU.

2. Use 
   to select USB, and press .

3. Use 
   to select FRC-8, and press .

4. Use 
   to select Power Source, and press .

Power settings for the FRC-8 are the same as for the F8n. See “Setting the power supply used” (→ P.22).

NOTE

When multiple power supplies are connected, they will be used in the following order of priority.
1. DC power supply (Ext DC)
2. USB bus power (supplied by F8n)
3. AA batteries (Int AA)

The voltages of each power supply are shown on the display.
Powering the FRC-8 with USB bus power (USB Bus Power)

The F8n can supply USB bus power to the FRC-8.

1. Press \( \text{MENU} \).

2. Use \( \text{SEL} \) to select USB, and press \( \text{SEL} \).

3. Use \( \text{SEL} \) to select FRC-8, and press \( \text{SEL} \).

4. Use \( \text{SEL} \) to select USB Bus Power, and press \( \text{SEL} \).

5. Use \( \text{SEL} \) to select Supply to FRC-8, and press \( \text{SEL} \).

HINT

When the F8n is supplying bus power, do not connect any device other than an FRC-8 to the USB port. Doing so could damage the F8n and the connected device.
Setting the FRC-8 LED brightness (LED Brightness)

You can adjust the brightness of the LEDs on the FRC-8.

1. Press \( \text{MENU} \).

2. Use \( \text{ } \) to select USB, and press \( \text{ } \).

3. Use \( \text{ } \) to select FRC-8, and press \( \text{ } \).

4. Use \( \text{ } \) to select LED Brightness, and press \( \text{ } \).

5. Use \( \text{ } \) to adjust the brightness, and press \( \text{MENU} \).

**HINT**
This can be set from 5 to 100.

You can adjust the brightness of the LEDs on the FRC-8.
Updating the FRC-8 firmware

You can check the **FRC-8** firmware version and update it to the latest version. The latest update file can be downloaded from the ZOOM website (www.zoom.co.jp).

1. **See "Using an FRC-8 as a controller" (→P.152), and connect the F8n and the FRC-8.**

   **NOTE**
   Updating is not possible if the remaining battery or DC power supply charge is low. In this case, replace the batteries with new ones or use a charged DC power supply.

2. **Copy the update file to the root directory on an SD card.**

3. **Load the SD card into the SD CARD 1 slot.**

   **NOTE**
   If an SD card is loaded in the SD CARD 2 slot, eject it.

4. **Press **MENU**.**

5. **Use ** to select USB, and press **.**

6. **Use ** to select FRC-8, and press **.**

   ▶ Continue to one of the following procedures.

   - Checking the firmware version .................. P.160
   - Updating the firmware ........................... P.160
Updating the firmware (continued)

### Checking the firmware version

7. Use 
   to select **Firmware Version**, and press 

### Updating the firmware

7. Use 
   to select **Update Firmware**, and press 

8. Use 
   to select **Yes**, and press 

**NOTE**

Do not turn the power off, remove an SD card or disconnect the USB cable during an update. Doing so could cause the FRC-8 to become unstartable.

9. After the update completes, turn the FRC-8 power off.
Setting how timecode is shown (Home Timecode Display Size)

You can change the size of the timecode display on the Home Screen.

1. Press [MENU].

2. Use [ ] to select SYSTEM, and press [ ].

3. Use [ ] to select Home Timecode Display Size, and press [ ].

4. Use [ ] to select the size, and press [ ].

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>The timecode is small and the time counter is large.</td>
</tr>
<tr>
<td>Big</td>
<td>The timecode is large and the time counter is small.</td>
</tr>
</tbody>
</table>
Setting level meter appearance (Level Meter)

You can set how the level meters appear on the display.

1. Press \textbf{MENU}.

2. Use \textbf{ } to select \texttt{SYSTEM}, and press \textbullet{.}

3. Use \textbf{ } to select \texttt{Level Meter}, and press \textbullet{.}

4. Use \textbf{ } to select \texttt{Type}, and press \textbullet{.}

5. Use \textbf{ } to select the type, and press \textbullet{.}

Continue to one of the following procedures.

- Setting the type .................................................. P.162
- Setting the peak hold time ................................. P.163
- Setting the level meter resolution ..................... P.164
- Setting which track level meters are shown on the Home Screen .................. P.164
- Showing track names on level meters ............ P.165
- Setting the level meter reference .................. P.165
### Setting value Explanation

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Only</td>
<td>The actual peak level of the signal (dBFS) is shown.</td>
</tr>
<tr>
<td>Peak + VU</td>
<td>Both VU and peak level are shown simultaneously. In this mode, the bars function as a VU meter except for the right-most bar, which shows the peak level.</td>
</tr>
<tr>
<td>VU Only</td>
<td>This display style is close to human hearing.</td>
</tr>
</tbody>
</table>

### Setting the peak hold time

1. Use  to select Peak Hold Time, and press .
2. Use  to adjust the peak hold time, and press .
Setting the level meter resolution

4. Use \( \circ \) to select \( \text{Resolution} \), and press \( \circ \).

5. Use \( \circ \) to select the resolution, and press \( \circ \).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segment</td>
<td><img src="image" alt="Segment" /> (Shown when set to VU Only)</td>
</tr>
<tr>
<td>Solid</td>
<td><img src="image" alt="Solid" /> (Shown when set to VU Only)</td>
</tr>
</tbody>
</table>

Setting which track level meters are shown on the Home Screen

You can change which tracks are shown on the Home Screen.

4. Use \( \circ \) to select \( \text{Level Meter View} \), then \( \text{View1} \) – \( \text{View4} \), and press \( \circ \).

5. Use \( \circ \) to select tracks to show, and press \( \circ \).

HINT

Multiple tracks can be shown. Not showing any tracks is also possible. If none of the check boxes are checked, no track level meters will appear on the Home Screen.

6. Press \( \text{MENU} \).
Setting the level meter reference

4. Use \( \text{ } \) to select Reference Level, and press \( \text{ } \).

5. Use \( \text{ } \) to select the reference level setting, and press \( \text{ } \).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>The track names are not shown on the level meters.</td>
</tr>
<tr>
<td>On</td>
<td>The track names set with the “Track Name” setting (→ P. 48) are shown on the level meters.</td>
</tr>
</tbody>
</table>
### Setting level meter appearance (Level Meter) (continued)

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
<th>When level meter type is Peak Only</th>
<th>When level meter type is Peak + VU or VU Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Level</td>
<td>The center of the level meter is -12 dBFS. Clear monitoring of levels higher than -12 dBFS is possible.</td>
<td><img src="image" alt="Normal Level Peak Only" /></td>
<td><img src="image" alt="Normal Level Peak + VU or VU Only" /></td>
</tr>
<tr>
<td>Low Level</td>
<td>The center of the level meter is -20 dBFS. Clear monitoring of levels lower than -20 dBFS is possible.</td>
<td><img src="image" alt="Low Level Peak Only" /></td>
<td><img src="image" alt="Low Level Peak + VU or VU Only" /></td>
</tr>
<tr>
<td></td>
<td>The center of the level meter is 0 VU (-20 dBFS). Clear monitoring of levels higher than 0 VU (-20 dBFS) is possible.</td>
<td><img src="image" alt="Low Level Peak + VU or VU Only" /></td>
<td><img src="image" alt="Low Level Peak + VU or VU Only" /></td>
</tr>
<tr>
<td></td>
<td>The center of the level meter is -10 VU (-30 dBFS). Clear monitoring of levels lower than -10 VU (-30 dBFS) is possible.</td>
<td><img src="image" alt="Low Level Peak + VU or VU Only" /></td>
<td><img src="image" alt="Low Level Peak + VU or VU Only" /></td>
</tr>
</tbody>
</table>
Setting the LED brightness (LED Brightness)

You can adjust the brightness of the LED level meters on the front of the F8n.

1. Press \( \text{MENU} \).

2. Use \( \text{ } \) to select \( \text{SYSTEM} \), and press \( \text{ } \).

3. Use \( \text{ } \) to select \( \text{LED Brightness} \), and press \( \text{ } \).

4. Use \( \text{ } \) to adjust the brightness, and press \( \text{MENU} \).

HINT
This can be set from 5 to 100.
Making display settings (LCD)

You can make settings related to the display.

1. Press MENU.

2. Use to select SYSTEM, and press .

3. Use to select LCD, and press .

▶ Continue to one of the following procedures.

Setting the display brightness ........................................ P.168
Changing the display backlight setting ............................ P.169
Making the display easier to read under bright light .... P.169

Setting the display brightness

4. Use to select Brightness, and press .

5. Use to adjust the brightness, and press MENU.

HINT
This can be set from 5 to 100.
Changing the display backlight setting
You can set the display backlight to dim after 30 seconds without use.

4. Use \(\rightarrow\) to select Power Saving, and press \(\uparrow\).

5. Use \(\rightarrow\) to select the setting, and press \(\uparrow\).

Making the display easier to read under bright light
The display can be set to be easier to read in bright environments including in sunlight.

4. Use \(\rightarrow\) to select Outdoor Mode, and press \(\uparrow\).

5. Use \(\rightarrow\) to select On, and press \(\uparrow\).

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>The backlight brightness does not change even after time passes without use.</td>
</tr>
<tr>
<td>On (Low-Backlight)</td>
<td>The backlight dims after time without use.</td>
</tr>
<tr>
<td>On (Backlight-Off)</td>
<td>The backlight turns off after time without use.</td>
</tr>
</tbody>
</table>


**Adding marks when pausing (PLAY Key Option)**

You can set how marks are added when ◄► is pressed while recording or playing back a WAV format file.

1. Press **MENU**.

2. Use ▼ to select **SYSTEM**, and press ▲.

3. Use ▼ to select **PLAY Key Option**, and press ▲.

▶ Continue to one of the following procedures.

- Setting how marks are added when recording.............P.170
- Setting how marks are added when playing.............P.171

4. Use ▼ to select **Recording**, and press ▲.

5. Use ▼ to select how marks are added, and press ▲.

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pause Only</td>
<td>Pressing ◄► will pause without adding a mark.</td>
</tr>
<tr>
<td>Pause &amp; Mark</td>
<td>Pressing ◄► will pause and add a mark.</td>
</tr>
<tr>
<td>Mark Only</td>
<td>Pressing ◄► will add a mark without pausing.</td>
</tr>
</tbody>
</table>
Setting how marks are added when playing

4. Use ◀ to select Playing, and press ▲.

5. Use ◀ to select how marks are added, and press ▲.

<table>
<thead>
<tr>
<th>Setting value</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pause Only</td>
<td>Pressing ◀ will pause without adding a mark.</td>
</tr>
<tr>
<td>Pause &amp; Mark</td>
<td>Pressing ◀ will pause and add a mark.</td>
</tr>
<tr>
<td>Mark Only</td>
<td>Pressing ◀ will add a mark without pausing.</td>
</tr>
</tbody>
</table>
Setting the keys held (Key Hold Target)

Use the hold function to prevent misoperation during recording. Press \(\text{\textcircled{+}} + \text{8}\) to turn it on/off. Follow these instructions to set which keys are disabled by the hold function.

1. Press \(\text{MENU}\).

2. Use \(\text{\textcircled{+}}\) to select \text{SYSTEM}, and press \(\text{\textcircled{○}}\).

3. Use \(\text{\textcircled{+}}\) to select \text{Key Hold Target}, and press \(\text{\textcircled{○}}\).

4. Use \(\text{\textcircled{○}}\) to select the keys held, and press \(\text{\textcircled{○}}\).

5. Press \(\text{MENU}\).

\textbf{HINT}

You can select Track 1-8, PFL 1-8, Trim Knob 1-8, Slate Mic, Slate Tone, Encoder, MENU, HP Volume, REW, STOP, FF, PLAY and REC.

\textbf{HINT}

- Even when hold is on for "STOP" and "Track1-8", you can press \(\text{\textcircled{+}} + \text{8}\) to turn the hold function off.
- Operation using the \textbf{FRC-8} and F8 Control is possible even when the hold function is on.
Checking SD card information (Information)

You can check the size and free space of SD cards.

1. Press \[ MENU \].

2. Use \[ \] to select SD CARD, and press \[ \].

3. Use \[ \] to select Information, and press \[ \].

Free space
Volume label
Size
Remaining recordable time
Testing SD card performance (Performance Test)

You can test whether an SD card can be used with the F8n. The Quick Test is basic, and the Full Test checks the entire SD card.

1. Press \[\text{MENU}\].

2. Use \(\text{\hspace{1pt}}\text{\hspace{1pt}}\) to select SD CARD, and press \(\text{\hspace{1pt}}\).

3. Use \(\text{\hspace{1pt}}\text{\hspace{1pt}}\) to select Performance Test, and press \(\text{\hspace{1pt}}\).

4. Use \(\text{\hspace{1pt}}\text{\hspace{1pt}}\) to select the SD card to test, and press \(\text{\hspace{1pt}}\).

5. Use \(\text{\hspace{1pt}}\text{\hspace{1pt}}\) to select Quick Test, and press \(\text{\hspace{1pt}}\).

6. Use \(\text{\hspace{1pt}}\text{\hspace{1pt}}\) to select Yes, and press \(\text{\hspace{1pt}}\).

The card performance test will start. The test should take about 30 seconds.

▶ Continue to one of the following procedures.

- Conducting a quick test .................................................... P.174
- Conducting a full test ..................................................... P.175
7. The test completes.
The result of the evaluation will be shown.

8. Press MENU to stop the test.

NOTE
Even if a performance test result is “OK”, there is no guarantee that writing errors will not occur. This information is just to provide guidance.

Conducting a full test

5. Use \( \) to select Full Test, and press \( \) .
The amount of time required for the full test will be shown.

6. Use \( \) to select Yes, and press \( \) .

7. The test completes.
The result of the evaluation will be shown.
If the access rate MAX reaches 100%, the card will fail (NG).
8. Press \textbf{MENU} to stop the test.

\textbf{NOTE}

- You can press \textbf{\textless\textgreater} to pause and resume the test.
- Even if a performance test result is "OK", there is no guarantee that writing errors will not occur. This information is just to provide guidance.
Formatting SD cards (Format)

SD cards must be formatted for use with the F8n.

1. Press  to select SD CARD, and press .

2. Use to select SD CARD, and press .

3. Use to select Format, and press .

4. Use to select the card to initialize, and press .

5. Use to select Yes, and press .

NOTE
• Before using SD cards that have just been purchased or that have been formatted by a computer, they must be formatted by the F8n.
• Be aware that all data previously saved on an SD card will be deleted when it is formatted.
Checking the F8n Shortcut List

The F8n has a shortcut feature that allows quick access to various functions. See the “List of shortcuts” (→ P. 191) for information about the shortcut functions.

1. Press MENU.

2. Use ◀ to select SYSTEM, and press ◀.

3. Use ◀ to select Shortcut List, and press ◀.
Backing up and loading F8n settings (Backup/Load Settings)

F8n settings can be backed up to and loaded from SD cards.

1. Press [MENU].

2. Use ◀ to select SYSTEM, and press ◁.

3. Use ◀ to select Backup/Load Settings, and press ◁.

4. Use ◀ to select the SD card to use for backup/loading, and press ◁.

5. Use ◀ to select Backup and press ◁.

6. Edit the name of the file saved.
   See "Character input screen" (→ P.13) for how to input characters.

HINT
The extension of the saved backup file is ".ZSF".

Continue to one of the following procedures.

- Backing up ........................................ P.179
- Loading ............................................. P.180

Backing up
This saves a backup file to the "F8n_SETTINGS" folder in the root directory of the SD card.
**Backing up and loading F8n settings (Backup/Load Settings)** (continued)

### Loading

You can load a backup file that is saved in the "F8n_SETTINGS" folder in the root directory of the SD card.

1. **5. Use** [תמיד] to select **Load/ Delete**, **and press** [ תמיד].

2. **6. Use** [תמיד] to select the file to **load**, **and press** [תמיד].

**HINT**

You can press and hold [תמיד] to delete a file. Deleting a file will completely erase its data.

3. **7. Use** [תמיד] to select **Yes**, **and press** [ תמיד].
Restoring default setting values (Factory Reset)

You can restore the factory default settings.

1. Press \( \text{MENU} \).

2. Use \( \text{ } \) to select SYSTEM, and press \( \text{ } \).

3. Use \( \text{ } \) to select Factory Reset, and press \( \text{ } \).

4. Use \( \text{ } \) to select Yes, and press \( \text{ } \).

The settings will be reset and the power will automatically turn off.

**NOTE**
Input volume knob settings will not be reset.
Checking the firmware version (Firmware Version)

You can check the firmware version.

1. Press \( \text{MENU} \).

2. Use \( \text{ } \) to select \( \text{SYSTEM} \),
   and press \( \text{ } \).

3. Use \( \text{ } \) to select \( \text{Firmware Version} \),
   and press \( \text{ } \).
The F8n firmware can be updated to the latest versions. The latest update file can be downloaded from the ZOOM website (www.zoom.co.jp).

1. Install new batteries in the F8n or connect the dedicated AC adapter to the DC IN connector.

   **NOTE**
   Upgrading is not possible if the remaining battery power is low. In this case, replace the batteries with new ones or use the adapter.

2. Copy the update file to the root directory on an SD card.

3. Load the SD card into the SD CARD 1 slot, and turn the power on while pressing ▶/‖.

   **NOTE**
   If an SD card is loaded in the SD CARD 2 slot, eject it first.

4. Use ● to select Yes, and press ○. 

   **NOTE**
   Do not turn the power off or remove the SD card during the update. Doing so could cause the F8n to become unstartable.

5. After the update completes, turn the power off.
Troubleshooting

If you think that the F8n is operating incorrectly, check the following items first.

Recording/playback trouble
◆ There is no sound or output is very quiet
  · Check the connections to your monitoring system and its volume setting.
  · Confirm that the volume of the F8n is not too low. (→ P.75)
◆ No sound from connected equipment or inputs or it is very quiet
  · If you are using a mic capsule, confirm that it is oriented correctly.
  · Check the input level settings. (→ P.28)
  · If a CD player or other device is connected to an input jack, raise the output level of that device.
  · Check the input signal monitoring settings. (→ P.75)
  · Check the phantom power and plug-in power settings. (→ P.90, P.93)
  · Check the headphone, MAIN OUT 1/2 and SUB OUT 1/2 routing settings. (→ P.108, P.122-123)
◆ Recording is not possible
  · Confirm that track keys are lit red.
  · Confirm that the SD card has free space. (→ P.173)
  · Confirm that an SD card is loaded properly in a card slot.
  · If “Card Protected!” appears on the display, the SD card write-protection is enabled. Slide the lock switch on the SD card to disable write-protection.
◆ The recorded sound cannot be heard or is very quiet
  · Confirm that the volume levels of the tracks are not too low. (→ P.52)
  · Confirm that track keys are lit green during playback.

Other trouble
◆ Computer does not recognize the F8n even though it is connected to the USB port
  · Confirm that the operating system is compatible. (→ P.144)
  · The operation mode must be set on the F8n to allow the computer to recognize the F8n. (→ P.145)
◆ Battery operation time is short
Making the following settings increase the battery operation time.
  · Set the power supply used correctly. (→ P.22)
  · Turn unnecessary tracks off. (→ P.27)
  · Turn unnecessary outputs off. (→ P.114)
  · Set the phantom power voltage to 24V. (→ P.91)
  · Disable phantom power during playback. (→ P.92)
  · Turn timecode off if not using it. (→ P.127)
  · Reduce the LED brightness.(→ P.167)
  · Reduce the display brightness. (→ P.168)
  · Set the display to dim when not used for some time. (→ P.169)
  · Reduce the sampling rate used to record files. (→ P.30)
  · Due to their characteristics, using nickel metal hydride batteries (especially high-capacity ones) or lithium batteries should enable longer use than alkaline batteries.
### Detailed product diagrams

#### F8n Multi Track Field Recorder

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### Appendixes

#### Detailed product diagrams

**Input**

<table>
<thead>
<tr>
<th>Input 1</th>
<th>Input 2</th>
<th>Input 3</th>
<th>Input 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trim</td>
<td>Trim</td>
<td>Trim</td>
<td>Trim</td>
</tr>
<tr>
<td>Limiter</td>
<td>Limiter</td>
<td>Limiter</td>
<td>Limiter</td>
</tr>
<tr>
<td>MS Stereo</td>
<td>MS Stereo</td>
<td>MS Stereo</td>
<td>MS Stereo</td>
</tr>
</tbody>
</table>

**Input 5-8**

<table>
<thead>
<tr>
<th>Input 5</th>
<th>Input 6</th>
<th>Input 7</th>
<th>Input 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limiter</td>
<td>Limiter</td>
<td>Limiter</td>
<td>Limiter</td>
</tr>
<tr>
<td>MS Stereo</td>
<td>MS Stereo</td>
<td>MS Stereo</td>
<td>MS Stereo</td>
</tr>
</tbody>
</table>

**Input Source**

- Input 1
- Input SW

**Player**

- Track 1
- Track 2
- Track 3
- Track 4
- Track 5
- Track 6
- Track 7
- Track 8
- Track L
- Track R

**USB 1-4**

- USB 1
- USB 2
- USB 3
- USB 4

**Slate**

- Mic
- Tone

**PC**

- Level Meter

---

### Appendices

#### Detailed product diagrams

**Rec/Play**

- Input 1-8
- Tr1-8

**Fader**

- Tr1-8 Level
- Tr1-8 Pan

**Output**

- MAIN 1/2 Fader
- SUB 1/2 Fader

**Alert Tone**

- Level Meter

**MS Stereo**

- Delay
- Limiter

**USB1**

- Delay
- Limiter

**USB4**

- Delay
- Limiter

**Mixer**

- MAIN 1/2 Level Meter
- Output On/Off, Level

**Headphone**

- Headphone Level

---

**L, R**

- Level Meter

---

**Appendices**

- Detailed product diagrams
## Metadata list

### Metadata contained in BEXT chunks in WAV files

<table>
<thead>
<tr>
<th>Tag</th>
<th>Explanation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEED=</td>
<td>Frame rate</td>
<td>MENU &gt; TIMECODE &gt; Timecode &gt; FPS</td>
</tr>
<tr>
<td>TAKE=</td>
<td>Take number</td>
<td></td>
</tr>
<tr>
<td>UBITS=</td>
<td>User bits</td>
<td>MENU &gt; TIMECODE &gt; Timecode &gt; Ubits</td>
</tr>
<tr>
<td>SCENE=</td>
<td>Scene name</td>
<td>MENU &gt; META DATA (for Next Take) &gt; Scene Name Mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MENU &gt; META DATA (for Next Take) &gt; User Scene Name</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Scene</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MENU &gt; FINDER &gt; Option &gt; Rename</td>
</tr>
<tr>
<td>TAPE=</td>
<td>Name of recording destination folder</td>
<td>MENU &gt; FINDER (Recording destination folder name)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Folder (Tape) Name</td>
</tr>
<tr>
<td>CIRCLED=</td>
<td>Circled take</td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Circle</td>
</tr>
<tr>
<td>TRL=</td>
<td>Left track name</td>
<td></td>
</tr>
<tr>
<td>TRR=</td>
<td>Right track name</td>
<td></td>
</tr>
<tr>
<td>TR1=</td>
<td>Track 1 name</td>
<td></td>
</tr>
<tr>
<td>TR2=</td>
<td>Track 2 name</td>
<td></td>
</tr>
<tr>
<td>TR3=</td>
<td>Track 3 name</td>
<td></td>
</tr>
<tr>
<td>TR4=</td>
<td>Track 4 name</td>
<td></td>
</tr>
<tr>
<td>TR5=</td>
<td>Track 5 name</td>
<td></td>
</tr>
<tr>
<td>TR6=</td>
<td>Track 6 name</td>
<td></td>
</tr>
<tr>
<td>TR7=</td>
<td>Track 7 name</td>
<td></td>
</tr>
<tr>
<td>TR8=</td>
<td>Track 8 name</td>
<td></td>
</tr>
<tr>
<td>NOTE=</td>
<td>Take note</td>
<td>MENU &gt; META DATA (for Next Take) &gt; Note</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Note</td>
</tr>
</tbody>
</table>

Track names are written as follows:

- TRL = left track, TRR = right track
- TR1 = track 1, TR2 = track 2...TR8 = track 8

During dual channel recording, tracks 1–4 are written to tracks 5–8.
### Metadata list (continued)

**Metadata contained in iXML chunks in WAV files**

<table>
<thead>
<tr>
<th>iXML master tag</th>
<th>iXML sub tag</th>
<th>Written</th>
<th>Read</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;PROJECT&gt;</td>
<td></td>
<td>○</td>
<td>○</td>
<td>MENU &gt; FINDER (SD card root folder)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Project Name</td>
</tr>
<tr>
<td>&lt;SCENE&gt;</td>
<td></td>
<td>○</td>
<td>○</td>
<td>MENU &gt; META DATA (for NextTake) &gt; Scene Name Mode</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MENU &gt; META DATA (for NextTake) &gt; User Scene Name</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Scene</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MENU &gt; FINDER &gt; Option &gt; Rename</td>
</tr>
<tr>
<td>&lt;TAKE&gt;</td>
<td></td>
<td>○</td>
<td>○</td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Take</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MENU &gt; FINDER &gt; Option &gt; Rename</td>
</tr>
<tr>
<td>&lt;TAPE&gt;</td>
<td></td>
<td>○</td>
<td>○</td>
<td>MENU &gt; FINDER (recording destination folder name)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Folder (Tape) Name</td>
</tr>
<tr>
<td>&lt;CIRCLED&gt;</td>
<td></td>
<td>○</td>
<td>○</td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Circle</td>
</tr>
<tr>
<td>&lt;WILDTRACK&gt;</td>
<td></td>
<td>×</td>
<td>×</td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Circle</td>
</tr>
<tr>
<td>&lt;FALSE START&gt;</td>
<td></td>
<td>×</td>
<td>×</td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Circle</td>
</tr>
<tr>
<td>&lt;NO GOOD&gt;</td>
<td></td>
<td>×</td>
<td>×</td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Circle</td>
</tr>
<tr>
<td>&lt;FILE_UID&gt;</td>
<td></td>
<td>○</td>
<td>×</td>
<td>MENU &gt; TIMECODE &gt; Timecode &gt; Ubits</td>
</tr>
<tr>
<td>&lt;UBITS&gt;</td>
<td></td>
<td>○</td>
<td>×</td>
<td>MENU &gt; TIMECODE &gt; Timecode &gt; Ubits</td>
</tr>
<tr>
<td>&lt;NOTE&gt;</td>
<td></td>
<td>○</td>
<td>○</td>
<td>MENU &gt; META DATA (for NextTake) &gt; Note</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>MENU &gt; FINDER &gt; Option &gt; Meta Data Edit &gt; Note</td>
</tr>
<tr>
<td>&lt;BEXT&gt;</td>
<td></td>
<td>×</td>
<td>×</td>
<td>MENU &gt; META DATA (for NextTake) &gt; Note</td>
</tr>
<tr>
<td>&lt;USER&gt;</td>
<td></td>
<td>×</td>
<td>×</td>
<td>MENU &gt; META DATA (for NextTake) &gt; Note</td>
</tr>
</tbody>
</table>
### iXML Master Tag and Sub Tag List

<table>
<thead>
<tr>
<th>iXML Master Tag</th>
<th>iXML Sub Tag</th>
<th>Written</th>
<th>Read</th>
<th>Remarks</th>
</tr>
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<tbody>
<tr>
<td><code>&lt;SPEED&gt;</code></td>
<td></td>
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<td><code>&lt;SPEED&gt;</code></td>
<td><code>&lt;NOTE&gt;</code></td>
<td>○</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td><code>&lt;SPEED&gt;</code></td>
<td><code>&lt;MASTER_SPEED&gt;</code></td>
<td>○</td>
<td>○</td>
<td>MENU &gt; TIMECODE &gt; Timecode &gt; FPS</td>
</tr>
<tr>
<td><code>&lt;SPEED&gt;</code></td>
<td><code>&lt;CURRENT_SPEED&gt;</code></td>
<td>○</td>
<td>×</td>
<td>MENU &gt; TIMECODE &gt; Timecode &gt; FPS</td>
</tr>
<tr>
<td><code>&lt;SPEED&gt;</code></td>
<td><code>&lt;TIMECODE_RATE&gt;</code></td>
<td>○</td>
<td>×</td>
<td>MENU &gt; TIMECODE &gt; Timecode &gt; FPS</td>
</tr>
<tr>
<td><code>&lt;SPEED&gt;</code></td>
<td><code>&lt;TIMECODE_FLAG&gt;</code></td>
<td>○</td>
<td>×</td>
<td>MENU &gt; TIMECODE &gt; Timecode &gt; FPS</td>
</tr>
<tr>
<td><code>&lt;SPEED&gt;</code></td>
<td><code>&lt;FILE_SAMPLE_RATE&gt;</code></td>
<td>○</td>
<td>×</td>
<td>MENU &gt; REC &gt; Sample Rate</td>
</tr>
<tr>
<td><code>&lt;SPEED&gt;</code></td>
<td><code>&lt;AUDIO_BIT_DEPTH&gt;</code></td>
<td>○</td>
<td>×</td>
<td>MENU &gt; REC &gt; WAV Bit Depth</td>
</tr>
<tr>
<td><code>&lt;SPEED&gt;</code></td>
<td><code>&lt;DIGITIZER_SAMPLE_RATE&gt;</code></td>
<td>○</td>
<td>×</td>
<td>MENU &gt; REC &gt; Sample Rate</td>
</tr>
<tr>
<td><code>&lt;SPEED&gt;</code></td>
<td><code>&lt;TIMESTAMP_SAMPLES_SINCE_MIDNIGHT_HI&gt;</code></td>
<td>○</td>
<td>×</td>
<td>MENU &gt; REC &gt; Sample Rate</td>
</tr>
<tr>
<td><code>&lt;SPEED&gt;</code></td>
<td><code>&lt;TIMESTAMP_SAMPLES_SINCE_MIDNIGHT_LO&gt;</code></td>
<td>○</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td><code>&lt;SPEED&gt;</code></td>
<td><code>&lt;TIMESTAMP_SAMPLE_RATE&gt;</code></td>
<td>○</td>
<td>×</td>
<td>MENU &gt; REC &gt; Sample Rate</td>
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</table>

<table>
<thead>
<tr>
<th>iXML Master Tag</th>
<th>iXML Sub Tag</th>
<th>Written</th>
<th>Read</th>
<th>Remarks</th>
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<td><code>&lt;SYNC_POINT_FUNCTION&gt;</code></td>
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<td>×</td>
<td></td>
</tr>
<tr>
<td><code>&lt;SYNC_POINT&gt;</code></td>
<td><code>&lt;SYNC_POINT_COMMENT&gt;</code></td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td><code>&lt;SYNC_POINT&gt;</code></td>
<td><code>&lt;SYNC_POINT_LOW&gt;</code></td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td><code>&lt;SYNC_POINT&gt;</code></td>
<td><code>&lt;SYNC_POINT_HIGH&gt;</code></td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td><code>&lt;SYNC_POINT&gt;</code></td>
<td><code>&lt;SYNC_POINT_EVENT_DURATION&gt;</code></td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>iXML Master Tag</th>
<th>iXML Sub Tag</th>
<th>Written</th>
<th>Read</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;HISTORY&gt;</code></td>
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</tr>
<tr>
<td><code>&lt;HISTORY&gt;</code></td>
<td><code>&lt;ORIGINAL_FILENAME&gt;</code></td>
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<td>×</td>
<td></td>
</tr>
<tr>
<td><code>&lt;HISTORY&gt;</code></td>
<td><code>&lt;PARENT_FILENAME&gt;</code></td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td><code>&lt;HISTORY&gt;</code></td>
<td><code>&lt;PARENT_UID&gt;</code></td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
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</table>
### Metadata list (continued)

<table>
<thead>
<tr>
<th>iXML master tag</th>
<th>iXML sub tag</th>
<th>Written</th>
<th>Read</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;FILE_SET&gt;</td>
<td>&lt;TOTAL_FILES&gt;</td>
<td>○</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>&lt;FILE_SET&gt;</td>
<td>&lt;FAMILY_UID&gt;</td>
<td>○</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>&lt;FILE_SET&gt;</td>
<td>&lt;FAMILY_NAME&gt;</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>&lt;FILE_SET&gt;</td>
<td>&lt;FILE_SET_START_TIME_HI&gt;</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>&lt;FILE_SET&gt;</td>
<td>&lt;FILE_SET_START_TIME_LO&gt;</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>&lt;FILE_SET&gt;</td>
<td>&lt;FILE_SET_INDEX&gt;</td>
<td>○</td>
<td>×</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>iXML master tag</th>
<th>iXML sub tag</th>
<th>Written</th>
<th>Read</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;TRACK_LIST&gt;</td>
<td>&lt;TRACK_COUNT&gt;</td>
<td>○</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>&lt;TRACK&gt;</td>
<td>&lt;CHANNEL_INDEX&gt;</td>
<td>○</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>&lt;TRACK&gt;</td>
<td>&lt;INTERLEAVE_INDEX&gt;</td>
<td>○</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>&lt;TRACK&gt;</td>
<td>&lt;NAME&gt;</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>&lt;TRACK&gt;</td>
<td>&lt;FUNCTION&gt;</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
</tbody>
</table>

○ = YES  × = NO

### Metadata and ID3 fields contained in MP3 files

<table>
<thead>
<tr>
<th>Metadata</th>
<th>ID3 field</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timecode</td>
<td>Artist Name</td>
<td>TC=[HH:MM:SS:FF]</td>
</tr>
<tr>
<td>Scene name, take number</td>
<td>TrackTitle</td>
<td>SC=[scene name] TK=[take number]</td>
</tr>
<tr>
<td>Frame rate, file length (time)</td>
<td>AlbumTitle</td>
<td>FR=[frame rate] D=[file length (time)]</td>
</tr>
</tbody>
</table>
## Home Screen

<table>
<thead>
<tr>
<th>Shortcut</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press and hold</td>
<td>Show the name that will be given to the next take recorded. Example: Scene001-T002</td>
</tr>
<tr>
<td>+</td>
<td>Advance the scene number by 1 (when the Home Screen is open).</td>
</tr>
<tr>
<td>Press and hold</td>
<td>Move the previously recorded take to the FALSE TAKE folder (when the Home Screen is open).</td>
</tr>
<tr>
<td>Press and hold</td>
<td>The number given to the next recorded take can be increased or decreased by one when the Home Screen is open.</td>
</tr>
<tr>
<td>+ 1</td>
<td>Open the MENU &gt; META DATA (for Next Take) &gt; User Scene Name screen.</td>
</tr>
<tr>
<td>+ 2</td>
<td>Open the MENU &gt; META DATA (for Next Take) &gt; Track Name screen. During recording, the key does not need to be used.</td>
</tr>
<tr>
<td>+ 3</td>
<td>Open the MENU &gt; INPUT &gt; Trim Link screen. During recording, the key does not need to be used.</td>
</tr>
<tr>
<td>+ 4</td>
<td>Open the MENU &gt; META DATA (for Next Take) &gt; Note screen. During recording, the key does not need to be used.</td>
</tr>
<tr>
<td>+ 5</td>
<td>Clear the level meter clipping indicators. During recording, the key does not need to be used.</td>
</tr>
<tr>
<td>+ 6</td>
<td>Open the L/R track fader settings screen. During recording, the key does not need to be used.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shortcut</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 7</td>
<td>Open the MENU &gt; OUTPUT &gt; Headphone &gt; Headphone Routing screen. During recording, the key does not need to be used.</td>
</tr>
<tr>
<td>+ 8</td>
<td>Use to disable the keys set with &quot;Key Hold Target&quot;. During recording, the key does not need to be used.</td>
</tr>
<tr>
<td>+ (Track 1)</td>
<td>Circle the currently selected take.</td>
</tr>
<tr>
<td>+ (Track 2)</td>
<td>Open MENU &gt; TIMECODE &gt; Timecode screen.</td>
</tr>
</tbody>
</table>
**List of shortcuts (continued)**

**Mixer Screen**

<table>
<thead>
<tr>
<th>Shortcut</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press and hold</td>
<td>Reset the selected pan/fader to the default value (when the Home Screen mixer is open). If already set to its default value, selecting a fader mutes the track.</td>
</tr>
</tbody>
</table>

**Character input screen**

<table>
<thead>
<tr>
<th>Shortcut</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press and turn</td>
<td>Move the cursor vertically on a character input screen keyboard.</td>
</tr>
<tr>
<td>+</td>
<td>Delete a character on the character input screen.</td>
</tr>
<tr>
<td>+</td>
<td>Move the cursor to &quot;Enter&quot; on the character input screen keyboard.</td>
</tr>
</tbody>
</table>

**Routing screen**

<table>
<thead>
<tr>
<th>Shortcut</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press and turn</td>
<td>Move the cursor vertically</td>
</tr>
</tbody>
</table>
## Specifications

<table>
<thead>
<tr>
<th>Recording media</th>
<th>Dual SD card slots support 16MB–2GB SD cards, 4GB–32GB SDHC cards and 64GB–512GB SDXC cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT 1–8</td>
<td>Connectors XLR/TRS combo jacks (XLR: 2 hot, TRS: TIP hot)</td>
</tr>
<tr>
<td>Input source set to Mic (→ P80)</td>
<td>Input gain +10 – +75 dB</td>
</tr>
<tr>
<td></td>
<td>Input impedance 2 kΩ</td>
</tr>
<tr>
<td></td>
<td>Maximum input level +14 dBu (at 0 dBFS, limiter ON)</td>
</tr>
<tr>
<td></td>
<td>Phantom power +24/48V 10mA maximum for each channel</td>
</tr>
<tr>
<td>Input source set to Line</td>
<td>Input gain -10 – +55 dB</td>
</tr>
<tr>
<td></td>
<td>Input impedance 2.6 kΩ</td>
</tr>
<tr>
<td></td>
<td>Maximum input level +24 dBu (at 0 dBFS, limiter ON)</td>
</tr>
<tr>
<td>Equivalent input noise</td>
<td>−127 dBu or less (A-weighted, +75dB input gain, 150Ω input)</td>
</tr>
<tr>
<td>Frequency characteristics</td>
<td>10 Hz – 80 kHz +0.5dB/-1dB (192kHz sampling rate)</td>
</tr>
<tr>
<td>A/D dynamic range</td>
<td>120 dB typ (−60dBFS input, A-weighted)</td>
</tr>
<tr>
<td>Crosstalk</td>
<td>−90 dB or less (between adjacent channels, 1kHz)</td>
</tr>
<tr>
<td>MIC IN</td>
<td>ZOOM mic capsule input (use disables Inputs 1/2)</td>
</tr>
<tr>
<td>SLATE MIC</td>
<td>Built-in mic for voice memos can be assigned to tracks freely</td>
</tr>
<tr>
<td>Outputs</td>
<td></td>
</tr>
<tr>
<td>MAIN OUT 1/2</td>
<td>Connectors TA-3 connectors, balanced output (2: hot)</td>
</tr>
<tr>
<td></td>
<td>Output impedance 150 Ω or less</td>
</tr>
<tr>
<td></td>
<td>Reference output level −10 dBV (normal output level), +4 dBu (Output Level: Line), 1 kHz, 600Ω load</td>
</tr>
<tr>
<td></td>
<td>Maximum output level +10 dBV (normal output level), +24 dBu (Output Level: Line), 1 kHz, 600Ω load</td>
</tr>
<tr>
<td>SUB OUT 1/2</td>
<td>Connector 3.5mm stereo mini unbalanced output jack</td>
</tr>
<tr>
<td></td>
<td>Output impedance 100 Ω or less</td>
</tr>
<tr>
<td></td>
<td>Reference output level −10 dBV (normal output level), −40 dBV (mic output level), 1 kHz, 10kΩ load</td>
</tr>
<tr>
<td></td>
<td>Maximum output level +10 dBV (normal output level), −20 dBV (mic output level), 1 kHz, 10kΩ load</td>
</tr>
<tr>
<td>HEADPHONE</td>
<td>Connector 1/4” unbalanced stereo output jack</td>
</tr>
<tr>
<td></td>
<td>Output impedance 15 Ω or less</td>
</tr>
<tr>
<td></td>
<td>Maximum output level 100mW + 100mW (32Ω load)</td>
</tr>
<tr>
<td>D/A dynamic range</td>
<td>106 dB typ (−60dBFS input, A-weighted)</td>
</tr>
</tbody>
</table>
## Specifications (continued)

<table>
<thead>
<tr>
<th>Recording formats</th>
<th>When WAV selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported formats</td>
<td>44.1/47.952/48/48.048/88.2/96/192kHz, 16/24-bit, mono/stereo/2-10ch poly, BWF and iXML</td>
</tr>
<tr>
<td>Maximum simultaneous recording tracks</td>
<td>10 (8 inputs + stereo mix)</td>
</tr>
<tr>
<td></td>
<td>8 (at 192kHz sampling rate)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recording formats</th>
<th>When MP3 selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported formats</td>
<td>128/192/320kbps, 44.1/48kHz, ID3v1 tags</td>
</tr>
<tr>
<td>Maximum simultaneous recording tracks</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recording time</th>
<th>Using a 32GB card</th>
</tr>
</thead>
<tbody>
<tr>
<td>30:51:00</td>
<td>(48kHz/24-bit stereo WAV)</td>
</tr>
<tr>
<td>7:42:00</td>
<td>(192kHz/24-bit stereo WAV)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Timecode</th>
<th>Connector</th>
<th>BNC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modes</td>
<td>Off, Int Free Run, Int Record Run, Int RTC Run, Ext, Ext Auto Rec (audio clock can be synchronized to timecode)</td>
<td></td>
</tr>
<tr>
<td>Frame rates</td>
<td>23.976ND, 24ND, 25ND, 29.97ND, 29.97D, 30ND, 30D</td>
<td></td>
</tr>
<tr>
<td>Precision</td>
<td>±0.2 ppm</td>
<td></td>
</tr>
<tr>
<td>Supported input levels</td>
<td>0.2 – 5.0 Vpp</td>
<td></td>
</tr>
<tr>
<td>Input impedance</td>
<td>4.6 kΩ</td>
<td></td>
</tr>
<tr>
<td>Output level</td>
<td>3.3 Vpp</td>
<td></td>
</tr>
<tr>
<td>Output impedance</td>
<td>50 Ω or less</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power supplies</th>
<th>Batteries: 8 AA</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC adapter:</td>
<td>AD-19 DC12V 2A (center plus)</td>
</tr>
<tr>
<td>External DC power supply: HIROSE HR10A-7R-4S 4-pin connector (1 pin: -, 4 pin: +), 9–18V</td>
<td></td>
</tr>
<tr>
<td>Continuous recording time</td>
<td>When recording 2 channels at 48kHz/16-bit to SD1 with MAIN/SUB OUT OFF, TIME CODE OFF, LED/LCD Brightness 5, 32Ω head-phones, PHANTOM OFF</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Alkaline batteries</td>
</tr>
<tr>
<td></td>
<td>NiMH (2450mAh)</td>
</tr>
<tr>
<td></td>
<td>Lithium batteries</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When recording 8 channels at 48kHz/24-bit to SD1 with MAIN/SUB OUT OFF, TIME CODE OFF, LED/LCD Brightness 5, 32Ω head-phones, PHANTOM OFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkaline batteries</td>
</tr>
<tr>
<td>NiMH (2450mAh)</td>
</tr>
<tr>
<td>Lithium batteries</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>When recording 8 channels at 192kHz/24-bit to SD1 with MAIN/SUB OUT ON, TIME CODE Int Free Run, LED/LCD Brightness 60, 32Ω headphones, PHANTOM 48V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkaline batteries</td>
</tr>
<tr>
<td>NiMH (2450mAh)</td>
</tr>
<tr>
<td>Lithium batteries</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Display</th>
<th>2.4” full-color LCD (320x240)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>USB</th>
<th>Mass storage operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>USB 2.0 High Speed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Multi Track audio interface operation (driver required for Windows, not required for Mac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
</tr>
<tr>
<td>Specifications</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stereo Mix audio interface operation (no driver required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
</tr>
<tr>
<td>Specifications</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audio Out From USB: multitrack operation (driver required for Windows, not required for Mac)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
</tr>
<tr>
<td>Specifications</td>
</tr>
</tbody>
</table>

| Power consumption | 15 W |
| External dimensions | Main unit: 7.0 in. (W) x 5.5 in. (D) x 2.1 in. (H) 178.2 mm (W) x 140.3 mm (D) x 54.3 mm (H) |
| Weight (main unit only) | 2.2 pounds (1000 g) |
**For U.S.A.**

**FCC regulation warning**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC CAUTION**

Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

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**For U.S.A. and CANADA**

This device complies with part 15 of the FCC Rules and Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC/IC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines and RSS-102 of the IC radio frequency (RF) Exposure rules. This equipment has very low levels of RF energy that are deemed to comply without testing of specific absorption ratio (SAR).

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**For CANADA**

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l’appareil ne doit pas produire de brouillage, et (2) l’utilisateur de l’appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d’en compromettre le fonctionnement.

Cet équipement est conforme aux limites d’exposition aux rayonnements énoncées pour un environnement non contrôlé et respecte les règles d’exposition aux fréquences radioélectriques (RF) CNR-102 de l’IC. Cet équipement émet une énergie RF très faible qui est considérée conforme sans évaluation du débit d’absorption spécifique (DAS).

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**For EU Countries**

![CE Declaration of Conformity]

Label is located at the bottom of the unit.