SONY

HD PORTABLE MEMORY RECORDER

SR-R1

HQ RECORDER OPTION

SRK-R311

OPERATION MANUAL English

1st Edition

Before operating the unit, please read this manual thoroughly and retain it for future reference.

WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

Do not install the appliance in a confined space, such as book case or built-in cabinet.

IMPORTANT
The nameplate is located on the bottom.

WARNING
Excessive sound pressure from earphones and headphones can cause hearing loss. In order to use this product safely, avoid prolonged listening at excessive sound pressure levels.

For the customers in the U.S.A.
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 into 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.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

This device complies with Part 15 of the FCC Rules. 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.

For the customers in Canada
This Class B digital apparatus complies with Canadian ICES-003.

For the customers in Europe
This product with the CE marking complies with the EMC Directive issued by the Commission of the European Community. Compliance with this directive implies conformity to the following European standards:

- EN55103-1 : Electromagnetic Interference(Emission)
- EN55103-2 : Electromagnetic Susceptibility(Immunity)

This product is intended for use in the following Electromagnetic Environments: E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors), E4 (controlled EMC environment, ex. TV studio).

For the customers in Europe
The manufacturer of this product is Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japan.

The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany. For any service or guarantee matters please refer to the addresses given in separate service or guarantee documents.

注意
用户不得自行更换电池，应交由合格维修人员进行。如果电池更换不当会有爆炸危险。只能用同样类型或等效类型的电池来更换。

【电池使用安全须知】
・不得将电池充电。
・不得将电池投入火中，加热、分解或改造。
・应使用指定种类的电池。
・应使用推荐期限内的电池。
・应按极性正确安装电池。
・应及时取出耗尽电池。
・不得将电池新旧混用。
・不得将电池弃于水、海水，或弄湿。
・不得将电池放在小孩容易触及的地方。
・严禁直接焊接电池。
・应正确安装电池以防止电池短路。

For the State of California, USA only
Perchlorate Material - special handling may apply, See www.dtsc.ca.gov/hazardouswaste/perchlorate
Perchlorate Material : Lithium battery contains perchlorate.

For the customers in Taiwan only

廢電池請回收

Avant d'utiliser l'appareil, veuillez lire attentivement ce manuel et le conserver pour future référence.

AVERTISSEMENT

Afin de réduire les risques d'incendie ou d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.

Afin d'écarter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

Ne pas installer l'appareil dans un endroit confiné, par exemple une bibliothèque ou un placard encastré.

IMPORTANT
La plaque signalétique se situe sous l'appareil.

AVERTISSEMENT
Une pression acoustique excessive en provenance des écouteurs ou du casque peut provoquer une baisse de l'acuité auditive.
Pour utiliser ce produit en toute sécurité, évitez l'écoute prolongée à des pressions sonores excessives.

Pour les clients au Canada
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Pour les clients en Europe
Ce produit portant la marque CE est conforme à la Directive sur la compatibilité électromagnétique (EMC) émise par la Commission de la Communauté européenne.
La conformité à cette directive implique la conformité aux normes européennes suivantes :

- EN55103-1 : Interférences électromagnétiques (émission)
- EN55103-2 : Sensibilité électromagnétique (immunité)

Ce produit est prévu pour être utilisé dans les environnements électromagnétiques suivants : E1 (résidentiel), E2 (commercial et industrie légère), E3 (urbain extérieur) et E4 (environnement EMC contrôlé, ex. studio de télévision).

Pour les clients en Europe

Le fabricant de ce produit est Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japon.
Le représentant autorisé pour EMC et la sécurité des produits est Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Allemagne. Pour toute question concernant le service ou la garantie, veuillez consulter les adresses indiquées dans les documents de service ou de garantie séparés.

Bitte lesen Sie dieses Handbuch vor der Benutzung des Geräts sorgfältig durch und bewahren Sie es zum späteren Nachschlagen auf.

WARNUNG

Um die Gefahr von Bränden oder elektrischen Schlägen zu verringern, darf dieses Gerät nicht Regen oder Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur qualifiziertem Fachpersonal.

Das Gerät nicht an Orten aufstellen, z.B. in Bücherregalen oder Einbauschränken, wo keine ausreichende Belüftung gewährleistet ist.

WICHTIG

Das Namensschild befindet sich auf der Unterseite des Gerätes.

WARNUNG

Zu hoher Schalldruck von Ohrhörern und Kopfhörern kann Gehörschäden verursachen.
Um dieses Produkt sicher zu verwenden, vermeiden Sie längeres Hören bei sehr hohen Schalldruckpegeln.

Für Kunden in Europa

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie der EG-Kommission.
Angewandte Normen:

- EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)

- EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit)

Für die folgenden elektromagnetischen Umgebungen: E1 (Wohnbereich), E2 (kommerzieller und in beschränktem Maße industrieller Bereich), E3 (Stadtbereich im Freien) und E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

Für Kunden in Europa

Der Hersteller dieses Produkts ist Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, Japan.
Der autorisierte Repräsentant für EMV und Produktsicherheit ist Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Deutschland. Bei jeglichen Angelegenheiten in Bezug auf Kundendienst oder Garantie wenden Sie sich bitte an die in den separaten Kundendienst- oder Garantiedokumenten aufgeführten Anschriften.

Table of Contents

Chapter 5 : Menu Details

Chapter 1 Overview

Features

The SR-R1 is a portable memory recorder of the SRMASTER series that has 1.5G/3G SDI Dual Link input/output and uses the newly developed SRMemory card for recording media.

SRMASTER and SRMemory are trademarks of Sony Corporation.

High Quality Recording

Support for SR-SQ (440 Mbps) and SR-Lite (220 Mbps) is provided as standard.
The optional SRK-R311 is also available (sold separately) to enable support for SR-HQ (10-bit/12-bit, 880 Mbps) and uncompressed DPX recording.
There is 16-channel (uncompressed, 24-bit, 48 kHz) support for audio.

RGB 4:4:4/60p/3D Creation

The SR-R1 is equipped with 1.5G/3G SDI Dual Link and includes recording capabilities such as 60p of RGB 4:4:4 and 3D (L/R) to enable support for various scenes.

SR Motion

The SR Motion function and Timer/Cache Rec functions are incorporated as standard, enabling recordings with slow and quick motion effects while maintaining high image quality.

RS-422A Interface

Connect the supplied cable to the REMOTE connector to enable external RS-422A control.

HD SDI Remote

Support is provided for the HD SDI Remote function that is incorporated in many Sony camcorders, so recording can be linked to Rec/Stop on the camera side.

HDW-F900R/650 dockable operation

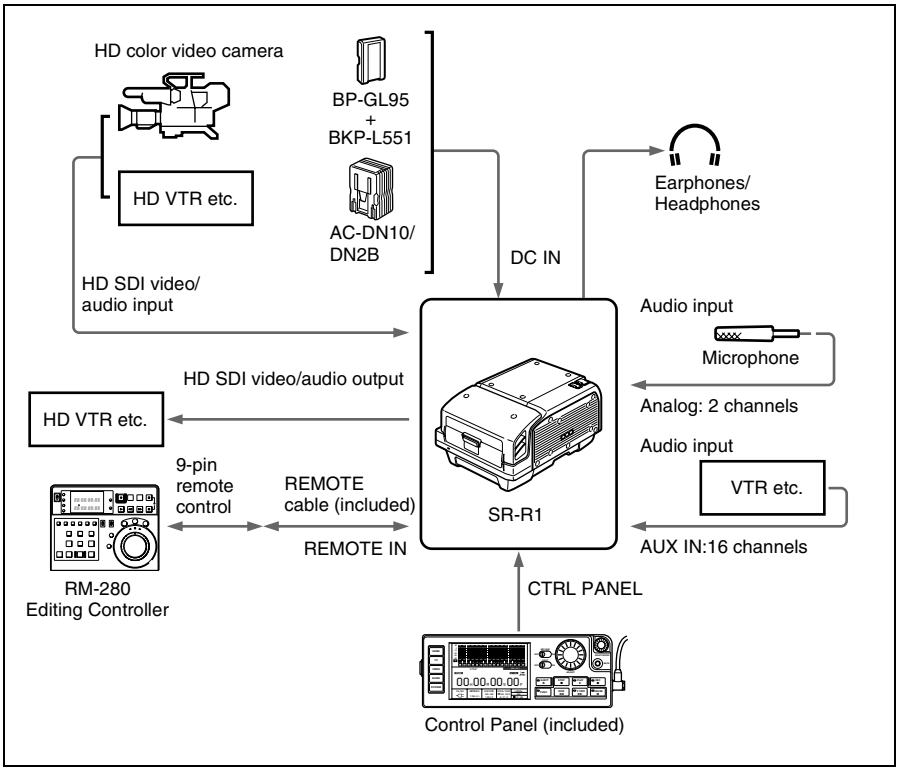
The SR-R1 supports dockable operation with the HD CAM camcorder HDW-F900R/650 equipped with HD SDI output, using the Docking Plate SRK-R302 (sold separately).

Use as PMW-F3 storage

The SR-R1 can be used as high-quality online storage for the Digital Cinema Recorder PMW-F3. Simultaneous recording on the SxS memory card in the PMW-F3 and the SRMemory card is possible. By synching delay and time code information on both media, an efficient workflow can be assured.

System Configuration Example

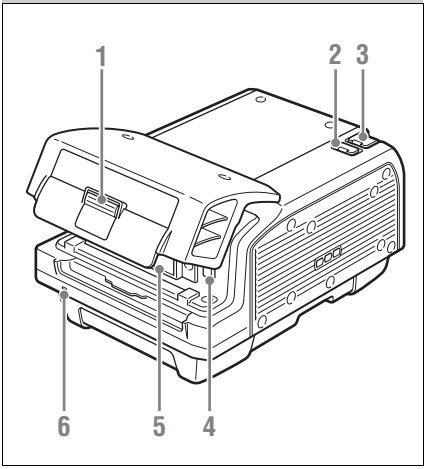
The following figure shows a system configured around the SR-R1.



Names of Parts

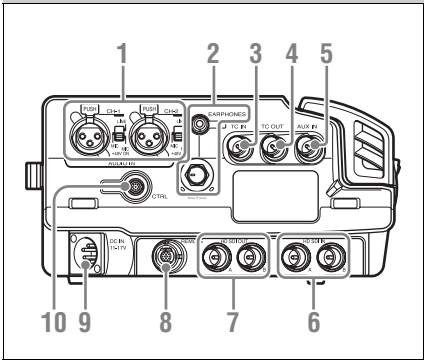
For detailed information on functions and usage, see the pages indicated in brackets.

Overall View



1. **Lid open/close button** ***(page 23)***
2. **Tally indicator** ***(page 22, 45, 91)***
   Lights up during recording.
   Flashes as a warning indication when an error or problem has occurred.
3. **POWER (power supply) indicator** ***(page 22)***
   Lights up in green when power to the unit is on.
4. **EJECT button** ***(page 24)***
5. **SRMemory card slot** ***(page 23)***
6. **LID LOCK indicator** ***(page 23)***
   Lights up in orange when an SRMemory card is mounted.

Left Side View



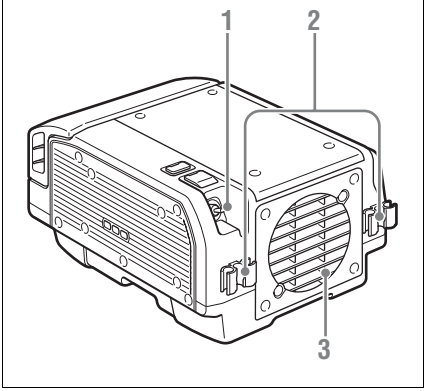
1. **AUDIO INPUT CH-1, CH-2 (analog audio input channel 1, 2) connectors (3-pin XLR, female) and input selection switches**
   Set the input selection switches as follows, depending on the type and level of the input audio.
   LINE: For line input
   MIC: For microphone input
   MIC +48V ON: For input from microphones with external power supply
2. **EARPHONES jack (stereo mini jack) and LEVEL knob**
   Adjusts the audio level.
   A warning/alarm tone is also output via this jack when an error is detected. *(see page 91)*
3. **TC IN (time code input) connector (BNC)**
   Connect to the time code output connector of an external device such as a time code generator or VTR. Use this connector when locking the internal time code generator to external time code.
4. **TC OUT (time code output) connector (BNC)**
   Connect to the time code input connector of an external device such as a time code reader or VTR. Signal is supplied according to setting made from TC Setup menu, OTHERS >TC OUT. *(see page 70)*
5. **AUX IN (SDI embedded audio input) connector (BNC)** ***(page 74)***
   Accepts audio input in up to 16 channels.
6. **HD SDI IN (HD SDI signal input) A/B (BNC)** ***(page 19)***
7. **HD SDI OUT (MON) (HD SDI signal output) connectors 1/2 (BNC)** ***(page 19)***

8. **REMOTE (remote control input) connector (14-pin, female)**
   Using the supplied REMOTE cable, a 9-pin remote cable (sold separately) can be used to control the SR-R1 from other equipment.

   Note

   To enable remote control from other equipment via this connector, access the SYSTEM Setup menu and set REMOTE/LOCAL to "RMT" *(see page 80)*.
9. **DC IN (DC power input) connector (4-pin XLR, male)** ***(page 16)***
10. **CTRL PANEL (Control Panel) connector** ***(page 16)***

Rear and Right Side View



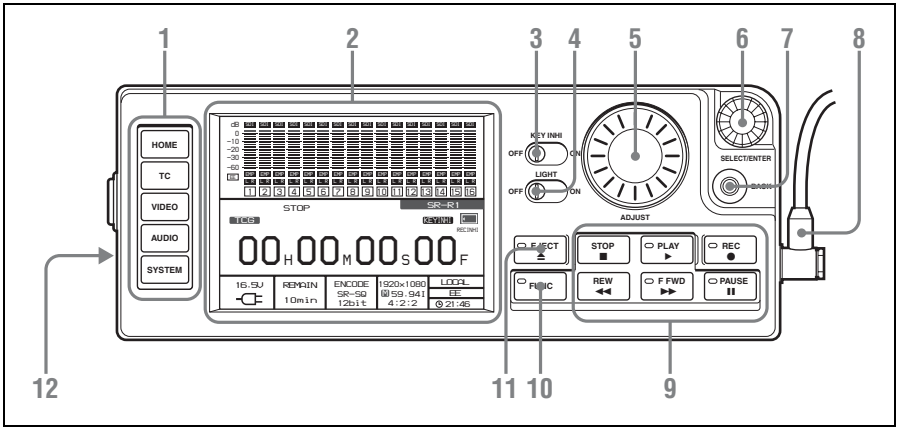
1. **Power switch** ***(page 22)***
   Setting the switch to the **I** side turns power on, and setting the switch to the ⏻ side turns power off.
2. **Cable clamp** ***(page 16)***
3. **Fan**

   Note

   Do not block the ventilation openings.
   Otherwise internal heat buildup can lead to a risk of fire and damage to the unit.

Control Panel

For information on how to use the control panel, see "Basic Menu Operations" (page 25).



1. **Menu selection buttons** ***(page 25)***

   For information on menu items, see "Menu Details" (page 69).

2. **Display** ***(page 13)***
3. **KEY INHI (key inhibit) switch** ***(page 26)***
4. **LIGHT switch** ***(page 28)***

   Setting this switch to ON turns the backlight on.

5. **ADJUST knob**

   Serves to adjust audio levels etc.

6. **SELECT/ENTER dial** ***(page 25)***

   Serves to make menu selections etc. Rotate the dial to move the cursor and press the dial to change and confirm settings.

7. **BACK button** ***(page 25)***

   When a menu is displayed, you can press this button to back up one level in the menu structure.

8. **Control panel connection cable** ***(page 16)***
9. **Record/Play buttons** ***(page 38, 39, 40)***

   Use these buttons to play recordings and files.

   The functions of the buttons change when they are pressed together with the FUNC button.

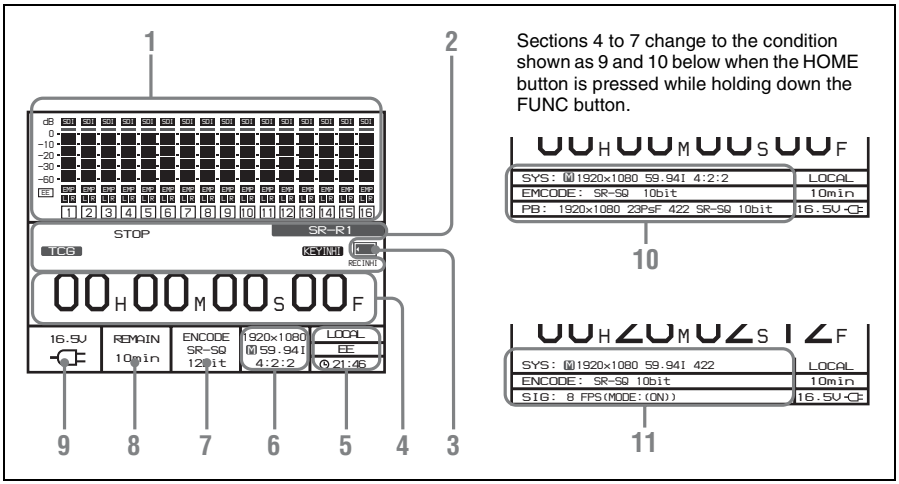
10. **FUNC (Function) button** ***(page 40)***

    Holding down this button changes the operation of the Record/Play buttons.

11. **EJECT button and indicator** ***(page 24)***
12. **"Memory Stick" slot** ***(page 99)***

Display

The condition shown below is called the HOME screen in this manual.



1. Audio level meters

Show the recording level in recording and E-E mode. During playback, the meters show the playback level.

The top row indicates the audio input signal that is being recorded.

The numbers 1 to 16 in the bottom row indicate the track number of the file.

2. Operation status and warning indicator

Shows the operation status of the unit as well as various warning indications.

TCR/TCG/ UBR/UBG/ TM1/TM2	Time data type.
LTC/VITC	Time code is being shown.
DF/NDF	System is in DF (drop-frame) or NDF (non-drop frame) mode. *(see page 70)*
EXT-LK	Time code is locked to external time code.
KEY INHI	KEY INHI switch is ON. *(see page 26)*
REC INHI	SRMemory card is write-protected. *(see page 24)*
SR-R1	The model name is displayed as follows, depending on the operating status of the unit. *(see page 28)*
	*SR-R1 Power Save Mode 1.
	**SR-R1 Power Save Mode 2.

3. SRMemory card icon indications

	Mounting/mounted An SRMemory card is inserted and the lid is locked.
	Unmounting (cursor section in the bottom right flashes) The EJECT button has been pressed and the unit is transitioning to the state in which you can remove the SRMemory card.
	UNMOUNT state The lid lock has been released and the SRMemory card can be removed.
	MEMORY OUT state (off) There is no SRMemory card in the unit.

4. Time data indication

Shows the time data for the current position in the file.

5. Status indication

Shows the control mode of the unit (REMOTE/LOCAL), power mode (PB/EE), and current time.

Top row	Shows the REMOTE/LOCAL setting of the SYSTEM Setup menu *(see page 80)*.
Center row	Shows the POWER >MODE setting of the SYSTEM Setup menu (PB or EV) *(see page 82)*. When POWER >SAVE MODE is selected, "SAVE" is shown after the MODE indication.
Bottom row	Shows the current time.

6. Signal format indication

Shows the format of the signal being recorded.

T	Auto Timer Rec *(see page 45)*
M	Manual Timer Rec *(see page 44)*
C	Cache Rec *(see page 46)*

When SR Motion is being used, "S" is shown before the system frequency.

7. Encoding format indication *(page 97)*

Shows the encoding and bit rate settings used for recording.

8. SRMemory card remaining capacity indication *(page 23)*

Shows the remaining space on the SRMemory card calculated as remaining time, using the current recording settings. When the remaining time is less than 3 minutes, the indication flashes.

9. Battery/External power supply voltage indication *(page 22)*

Shows the battery or external power supply voltage.

10. Signal format indication *(page 27)*

When the FUNC button and HOME button are pressed together, the system, playback, and monitor output signal formats are shown in that order from the top row.
When the unit is in one of the following modes, an alphabetic character indicating the mode appears before the number of lines.

T	Auto Timer Rec *(see page 45)*
M	Manual Timer Rec *(see page 44)*
C	Cache Rec *(see page 46)*

When SR Motion is being used, "S" is shown before the system frequency. *(see page 47)*
During LUT conversion for monitor output, "(LUT)" appears after the monitor output display. *(see page 66)*

11. SR Motion indication *(page 47)*

When the SYSTEM >FORMAT >SELECT FPS menu option is set to "ON" or "RECORDER", pressing both the FUNC and HOME buttons together switches the bottom row of the display to FPS or FRM indication.

Chapter 2 Preparation

Work Flow

The steps that are required before starting to use the SR-R1 are listed below.

Mount control panel *(page 15)*
↓
Connect power *(page 16)*
↓
Connect HD SDI compliant equipment *(page 19)*
↓
Turn power on *(page 22)*
↓
Insert SRMemory card *(page 23)*

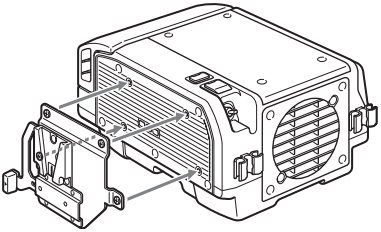
Tip

A Phillips (cross head) screwdriver is required for mounting the control panel.

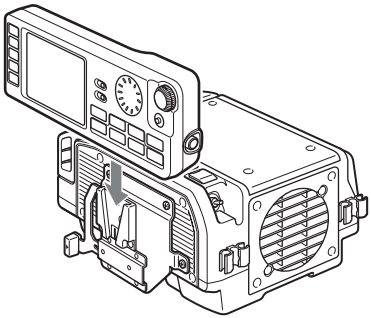
Mount Control Panel

Attach the supplied CP bracket to the unit, and connect the unit and the control panel with the control panel cable.

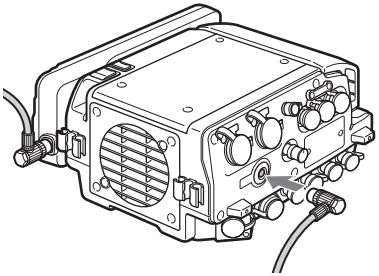
1 Attach the supplied CP bracket to the right side of the unit.



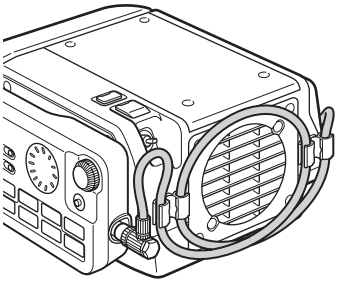
2 Slide the control panel into the CP bracket.



3 Use the supplied control panel cable to connect the unit and the control panel.

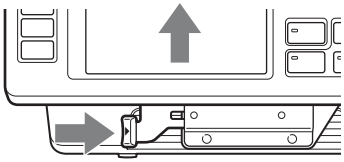


4 Use the cable clamp as shown, to fix the cable.



To remove the control panel

Grasp the underside of the CP bracket and push it in the ▶ direction to release the lock. Then slide the control panel out.



Connect Power

The SR-R1 can be powered either from a battery pack or AC power.
For safety, do not use any AC adapter or battery pack other than the Sony products specified below.

- AC adapter: AC-DN10, AC-DN2B
- Lithium ion battery pack: BP-GL95

Tip

To use the battery pack, the Battery Adapter BKP-L551 (sold separately) is required.

Using AC Power

Use the DC power cable (sold separately) to connect the AC adapter AC-DN10/DN2B to the DC IN connector on the SR-R1.

Note

When connecting the output of a battery to the DC IN connector, access the SYSTEM Setup menu and set the BATTERY >DC IN TYPE option to other than “AC Adapter.” *(see page 83)*

Using the Battery Pack

Before using the battery pack, charge it fully with the dedicated battery charger.

For detailed information on charging, refer to the documentation of the battery charger.

WARNING

Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
When you dispose of the battery, you must obey the law in the relative area or country.

AVERTISSEMENT

N’exposez pas les batteries à une chaleur excessive, au soleil ou près d’un feu par exemple.

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur. Lorsque vous mettez la batterie au rebut, vous devez respecter la législation en vigueur dans le pays ou la région où vous vous trouvez.

WARNUNG

Akkus dürfen keinesfalls übermäßiger Wärmeeinwirkung ausgesetzt werden, wie z.B. Sonneneinstrahlung, Feuer o. ä.

VORSICHT

Explosionsgefahr bei Verwendung falscher Batterien. Batterien nur durch den vom Hersteller empfohlenen oder einen gleichwertigen Typ ersetzen.

Wenn Sie die Batterie entsorgen, müssen Sie die Gesetze der jeweiligen Region und des jeweiligen Landes befolgen.

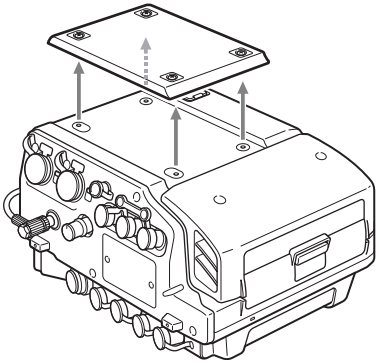
Battery pack usage precautions

- If the battery pack is charged immediately after use while still warm, a full charge may not be achieved.
- If not using the unit for an extended period, detach the battery pack.

Attaching the battery pack

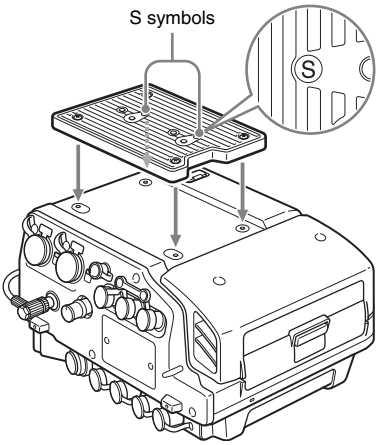
Use the BKP spacer supplied with the unit and the separately available BKP-L551 to attach the battery pack to the top of the unit.

1 Remove the top cover of the unit.

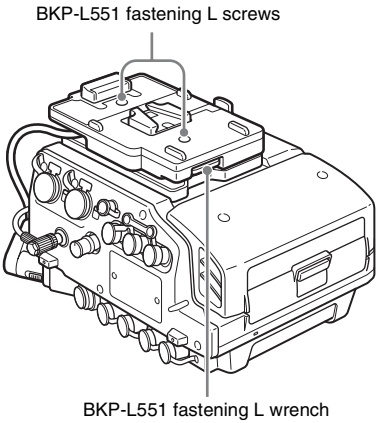


2 Attach the supplied BKP spacer.

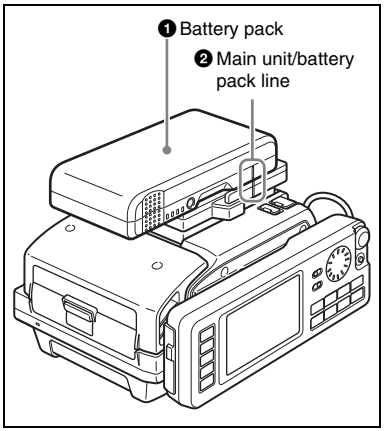
The S symbol must face up.



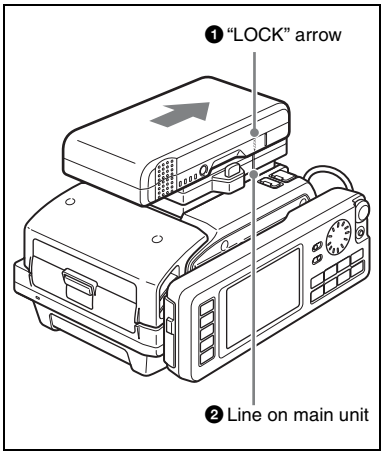
3 Attach the BKP-L551 to the screw threads marked with the S symbol and connect the power cable to the DC IN connector.



4 Align the line on the side of the battery pack with the line on the unit and place the battery pack on the rear section of the unit.



5 Push the battery pack down and slide it in the arrow direction marked "LOCK."

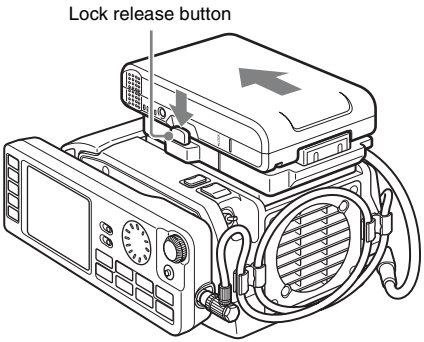


Note

If the battery pack is attached incorrectly, the connectors may be damaged.

Removing the battery pack

While power to the unit is switched off, hold down the lock release button and push the battery pack off.



Notes

- Never remove the battery pack while a recording is in progress (tally indicator is lit in red).
- Always turn power to the unit off before removing the battery pack.

Connect HD SDI Compliant Equipment

Connect equipment with an HD SDI interface to the HD SDI IN (MON) (HD SDI signal input) connector A/B and HD SDI OUT (HD SDI output) connector A/B of the SR-R1.

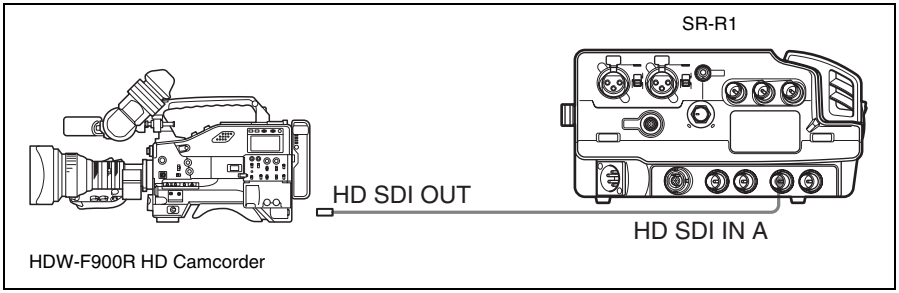
Tip

HD SDI input/output settings can be made from the SYSTEM Setup menu, under FORMAT > 3G/DUAL. *(see page 79)*

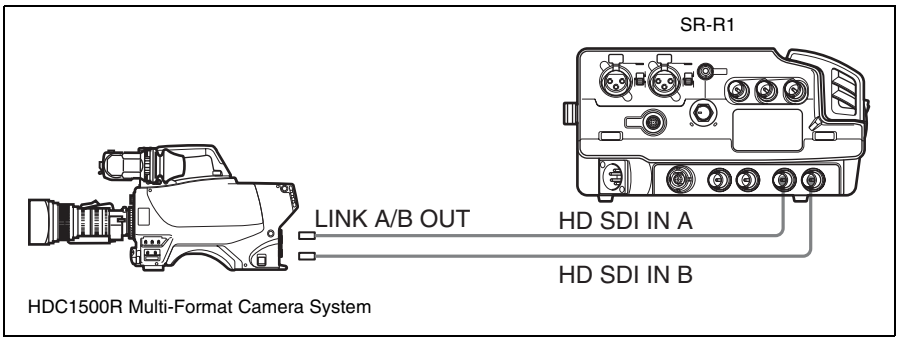
Representative connection examples are shown below.

Connecting a Camera/Camcorder

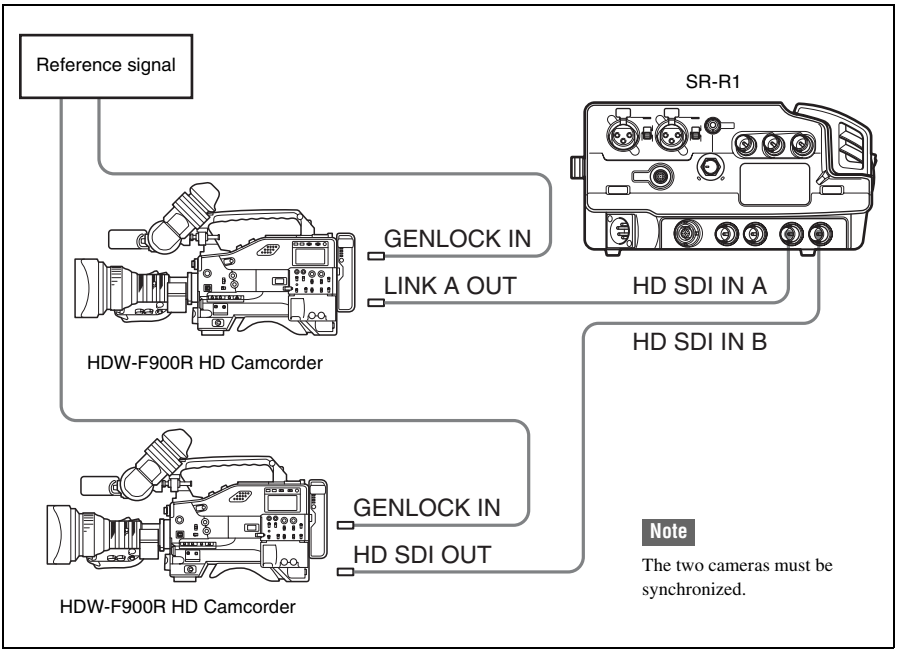
Using the HDW-F900R or similar to record a 4:2:2 signal



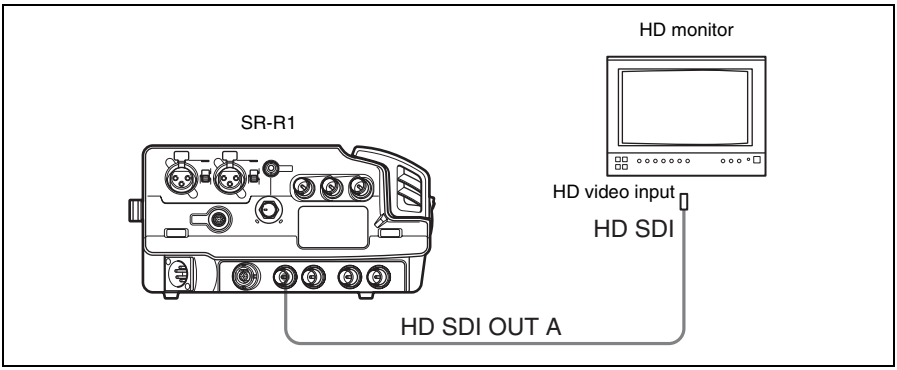
Using the HDC1500R to record an RGB 4:4:4 or 4:2:2 50p/59p signal



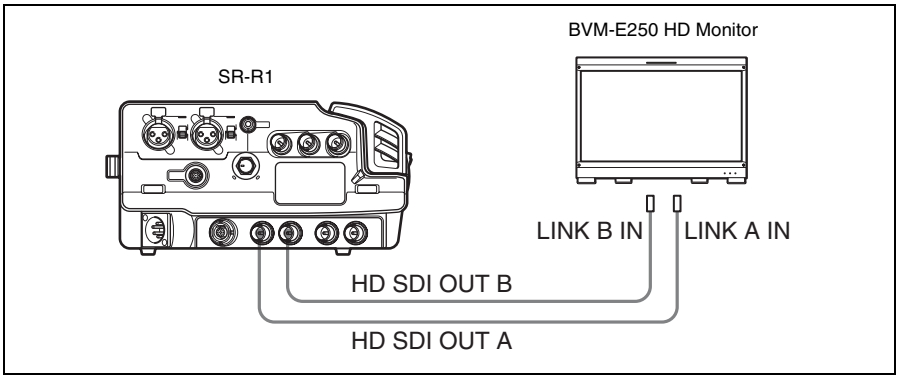
Recording the output from two cameras as a 4:2:2 DUAL STREAM (3D)



Connecting an HD Monitor



Connecting a RGB4:4:4 and 1080 50p/60p (Dual Link) compatible HD monitor

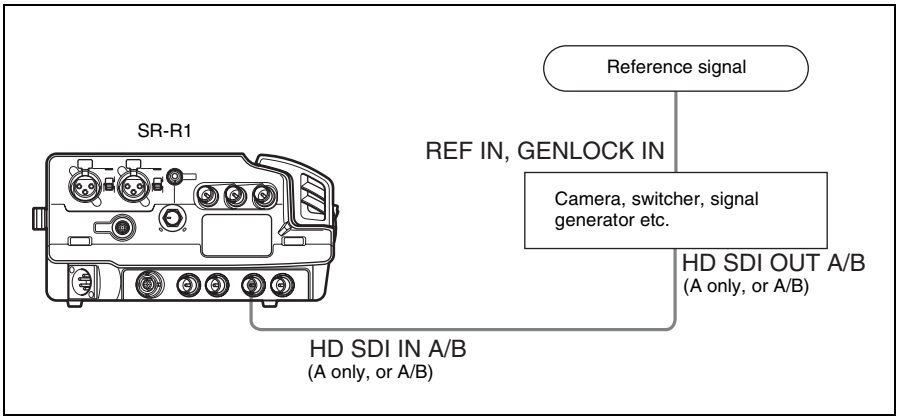


About the Reference Sync Signal

External synchronization required

If external synchronization is required, connect an HD SDI signal synchronized to the reference signal.

Recording/playback with synchronized camera, switcher, signal generator etc.



Tip

If no external synchronization source is available, internal sync will be used.

Turn Power On

To power up the unit

1 **When using the AC adapter, turn power to the AC adapter on.**

2 **Press the power switch on the SR-R1 on the I side.**
Power comes on and the POWER indicator lights up in green.

To power down the unit

1 **Press the power switch on the SR-R1 on the ⏻ side.**
Power is turned off and the POWER indicator goes out.

2 **When using the AC adapter, turn power to the AC adapter off.**

Note

To prevent the risk of data corruption, do not interrupt the DC IN power supply while the SR-R1 is turned on.

Tip

If power is turned off while an SRMemory card is mounted, the unit will not power down immediately, to protect the data on the card. The SRMemory card will be unmounted first, and then the unit powers down.

Checking the power/voltage

The indication at the bottom left of the control panel display serves to verify the battery status or the voltage of the external power supply.

However, this indication is not based on the actual connection condition but on the setting made under SYSTEM Setup > BATTERY > DCIN TYPE. *(see page 83)*
Set DCIN TYPE to match the power supply being used.

Tips

- When signal format and SR Motion are shown, the indication appears at bottom right. *(see page 14)*
- The voltage shown is the actual voltage used by the unit (this may be lower than the input voltage and the DC IN connector).

When a battery pack is selected

The battery symbol is shown.

- When fully charged, all seven segments are lit. As the battery pack discharges, the segments go out from left to right.
- When the battery pack is almost exhausted (NEAR END), the voltage indication and the tally indicator start to flash, and an intermittent warning tone sounds in the earphones.
- When the battery pack is completely exhausted (END), the corresponding warning indication lights, the tally indicator starts to flash at a higher rate, and the earphones warning tone sounds continuously.

Tip

The DCIN TYPE option in the SYSTEM Setup menu allows you to set the battery voltages which trigger the NEAR END and END warnings. *(see page 83)*

When AC power is selected

The connector symbol is shown.

Insert SRMemory Card

Supported SRMemory cards

The SR-R1 can use the following types of SRMemory cards.

For 59.94i

SRMemory card	SR-Lite	SR-SQ	SR-HQ
SR-256S15/256S55	114	60	32
SR-512S25/512S55	229	120	64
SR-1TS25	458	241	128

Unit: minutes (approx.)

For 50i

SRMemory card	SR-Lite	SR-SQ	SR-HQ
SR-256S15/256S55	137	72	38
SR-512S25/512S55	274	145	76
SR-1TS25	550	290	153

Unit: minutes (approx.)

For 23.98P

SRMemory card	SR-Lite	SR-SQ	SR-HQ
SR-256S15/256S55	143	75	40
SR-512S25/512S55	286	151	80
SR-1TS25	573	302	160

Unit: minutes (approx.)

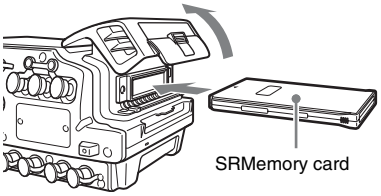
1) Recording times will differ depending on equipment and shooting conditions.

Inserting and Removing the SRMemory Card

To insert the SRMemory card

1 Press the lid open/close button to open the lid of the SRMemory card slot and insert the SRMemory card.

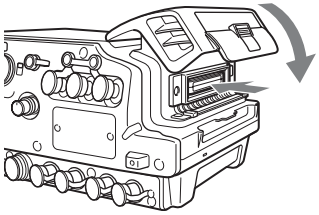
Take care to insert the SRMemory card with the correct orientation.



Tips

- If the LID LOCK indicator is lit in orange, showing that the lid is locked, press the EJECT button on the control panel to unmount the card first, and then open the lid.
- If power was turned off with the lid in the locked state, turn power on again and then press the EJECT button on the control panel to unmount the card.

2 Push the SRMemory card all the way in and close the lid.



The SRMemory card is mounted, and the LID LOCK indicator lights up in orange. Verify that no error message is shown on the control panel display.

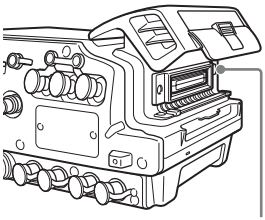
If "XXX: SALVAGE DETECT" is shown on the display

This indicates that the previous recording did not complete normally.

For information on what to do in this case, see "Salvaging SRMemory cards for which recording did not complete properly" (page 92) in the "Troubleshooting" section.

To remove the SRMemory card

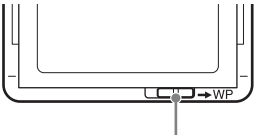
1. **Press the EJECT button on the control panel while power to the unit is on.**
   The files in the SRMemory card are closed automatically, the SRMemory card is unmounted, and the lock of the lid is released.
   During the unmount procedure, the indicator of the EJECT button on the control panel is lit.
2. **Press the lid open/close button to open the lid.**
3. **Press the EJECT button on the right side of the slot to remove the SRMemory card.**



Pressing this button causes the SRMemory card to pop out.

Write-protecting the card

In order to prevent inadvertent erasure of recorded content, you can slide the write protect switch to “WP.”



Write protect switch Slide fully to the right.

When the card is inserted in the SR-R1 in this condition, the indication “REC INHI” appears, and recording is not possible.
To re-enable recording on this card, return the write protect switch to the original condition.

Formatting an SRMemory Card (File System Format)

SRMemory cards are sold already formatted, so you can use a newly purchased SRMemory card right away.
To format an SRMemory card on which data were recorded, proceed as follows.

Note

Formatting will erase all files and data on the SRMemory card.

For details on menu operation, see “Basic Menu Operations” (page 25).

1. **Press the SYSTEM button.**
   The SYSTEM Setup menu appears.
2. **Select and confirm “SRMEMORY” → select and confirm “FS FORMAT” → move the cursor to [OK] and confirm.**
   The file system formatting process starts. When the process is finished, the indication “Completed” is shown.
3. **Return to the HOME screen.** ***(see page 26)***

Chapter 3 Basic Menu Operations

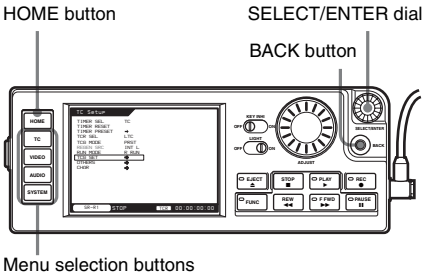
The menu system of the SR-R1 consists of the following four menus.

Menu	Overview
TC Setup	Serves for making time code settings.
VIDEO Setup	Serves for making video signal related settings.
AUDIO Setup	Serves for making audio signal related settings.
SYSTEM Setup	Serves for making system settings.

For details on menu items, see "Menu Details" (page 69).

The menu is operated with the control panel.

Buttons Used for Menu Operations



Serve for Selecting a Menu

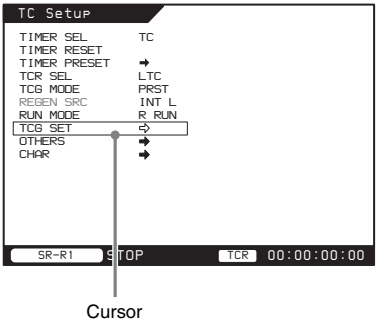
Selecting a menu

Press the respective menu selection button.
TC: Brings up the TC Setup menu.
VIDEO: Brings up the VIDEO Setup menu.
AUDIO: Brings up the AUDIO Setup menu.
SYSTEM: Brings up the SYSTEM Setup menu.

Selecting and making settings within a menu

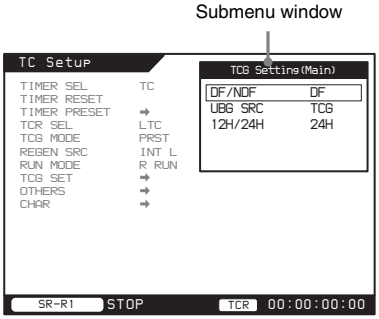
Example: TC Setup menu

1 Rotate the SELECT/ENTER dial to move the cursor to the target item, and press the SELECT/ENTER dial.



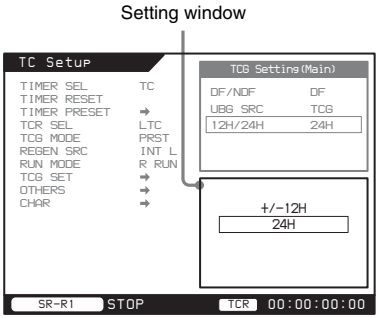
A submenu for the selected item appears, and the cursor moves to the submenu.
If the selected item is a command, the command is executed.

2 Rotate the SELECT/ENTER dial to move the cursor to the target item, and press the SELECT/ENTER dial.



A setting window appears, and the cursor moves to the setting window.

3 Rotate the SELECT/ENTER dial to select the desired setting, and press the SELECT/ENTER dial to accept the setting.



To return to an upper level

Press the BACK button.

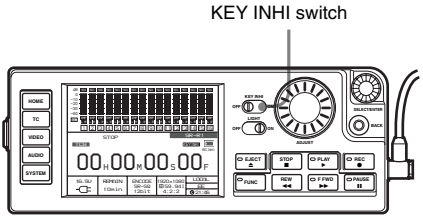
To return to the HOME screen

Press the HOME button or press the BACK button repeatedly.

Locking the Controls

To prevent operation errors or an inadvertent change in settings, the controls of the unit can be locked.

Access the SYSTEM Setup menu and set KEY INHI to “ALL” *(see page 80)*, and then slide the KEY INHI switch to ON.



ON: All controls of the unit are inactive.

SYSTEM: During recording, the STOP and PAUSE keys are active, and all other controls are inactive. (When not recording, all controls of the unit are inactive.)

Tip

When KEY INHI in the SYSTEM Setup menu is set to “Map”, the “KEYMAP” settings apply. *(see page 80)*

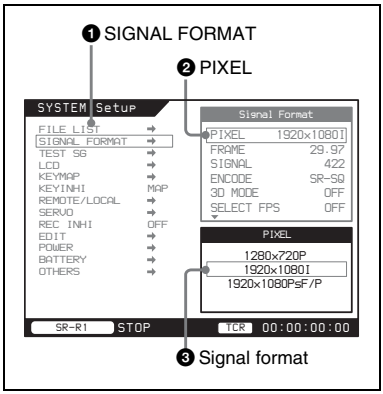
Signal Format Settings

Selecting the Signal Format

Making “SIGNAL FORMAT” settings

1 **Press the SYSTEM button.**
The SYSTEM Setup menu appears.

2 **❶ Select "SIGNAL FORMAT", and confirm →❷ select "PIXEL" , and confirm →❸ select the format to use, and confirm.**

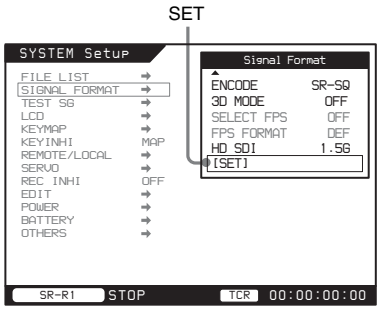


Return to submenu window.

3 **Make settings for FRAME, SIGNAL, ENCODE, and 3DMODE in the same way.**

4 **Set SELECT FPS, FPS FORMAT, and HD SDI as necessary.**

5 **After settings are complete, select SET.**



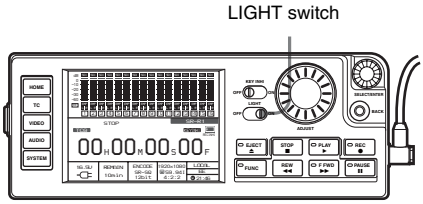
The settings complete message is shown, and the HOME screen appears again.

Display Settings

You can make settings for backlight use in dark locations, screen saver, etc.

Using the Backlight

Setting the LIGHT switch to ON turns the backlight on.



Adjusting the backlight brightness

Access the SYSTEM Setup menu and select LCD > BRIGHT *(see page 80)*. The Backlight Brightness window appears, letting you adjust the setting.

Turning the backlight off after a period of inactivity

Access the SYSTEM Setup and select LCD > LIGHT OFF *(see page 80)*. The Backlight Off Timer window appears, letting you adjust the backlight activation duration. The setting range is 5 seconds to 5 minutes. To disable automatic backlight deactivation, select “Disable.”
Default setting: Disable

Using the Screen Saver

Access the SYSTEM Setup menu and select LCD >SAVER *(see page 80)*. The Screen Saver window appears, letting you adjust the wait interval until the screen saver is activated. The setting range is 1 minute to 1 hour. To disable the screen saver, select “Disable.”
Default setting: Disable

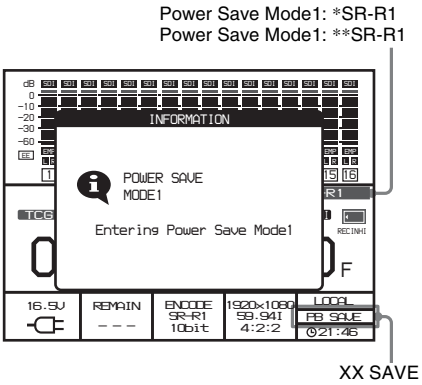
Power Save Settings

The SR-R1 can be set to reduce power consumption and thereby extend battery life. Available settings are described below. Access the SYSTEM Setup menu and select POWER *(see page 82)* to make a setting.

Item	Setting
MODE:	Conserves power by limiting the output signal.
SAVE MODE	Selects whether power save mode is used or not.
SDI OUT	Conserves power by disabling signal output from HD SDI OUT connectors A/B.
LED	Conserves power by reducing the indicator brightness.
TALLY	

Operation in power save mode

When SAVE MODE is set to SAVE, thereby activating power save mode, the following popup appears on the display.



Setting options are Power Save Mode 1 and Power Save Mode 2 which operate as follows.

Power Save Mode 1: Only E-E image of SDI IN connector is output.

Power Save Mode 2: No output.

When SRMemory card is inserted

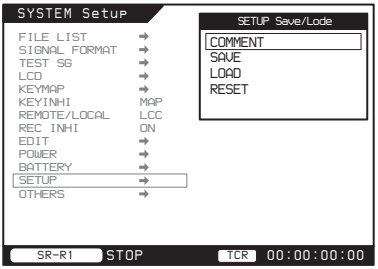
Standby off
↓ after 30 seconds
Power Save Mode 1
↓ after 30 seconds
Power Save Mode 2
↓ When Rec/Play button is pressed...
Power save mode is canceled.

When no SRMemory card is inserted

SAVE selected
↓ after 30 seconds
Power Save Mode 1
↓ after 30 seconds
Power Save Mode 2
↓ When REC button is pressed...
Power save mode is canceled.

Storing and Recalling Setup Data

In the SETUP menu of the System menu, you can save the setup data to a “Memory Stick” and read the setup data from a “Memory Stick.” You can also add a comment to the setup information and restore the setup information to the factory default state.



To add a comment to the Setup data (COMMENT menu)

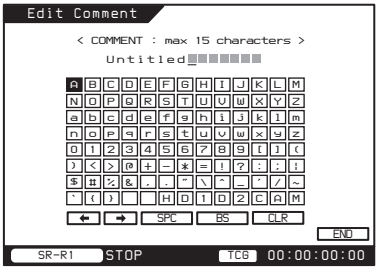
You can edit the comment to be added when the Setup data of the selected device is saved to a “Memory Stick.”

1 In the Setup Save/Load window, select and confirm “COMMENT.”

The Edit Comment screen appears.

2 Select characters and symbols on the displayed screen to enter a comment in the COMMENT field.

Up to 15 characters (including symbols) can be entered in the COMMENT field.



3 Once you have finished editing the comment, save the setup data to the "Memory Stick."

See "To save the setup data (SAVE menu)" (page 30).

To save the setup data (SAVE menu)

You can save the setup data to a "Memory Stick."

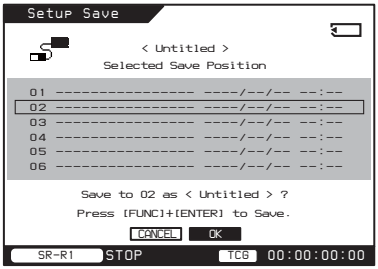
1 In the Setup Save/Load window, select and confirm "SAVE."

The Setup Save screen appears.

2 Select and confirm the number (01 to 06) of the bank to which to save the setup data.

A message for confirming the bank number of the save destination appears.

3 Confirm the bank number, select [OK], and then press the SELECT/ENTER dial while holding down the FUNC button.



The setup data is saved to the "Memory Stick" under the comment name added in the COMMENT menu.

Tip

If you want to cancel the operation, select and confirm [CANCEL] to return to the Setup Save screen.

When saving of the setup data is finished, "Completed" appears at the bottom of the Setup Save screen.

Tip

The setup data is saved to the "/MSSONY/PRO/SRMASTER/R1/" directory.

To read the setup data from a "Memory Stick" and load it into the unit (LOAD menu)

You can read the setup data from a "Memory Stick" and load it into the SR-R1.

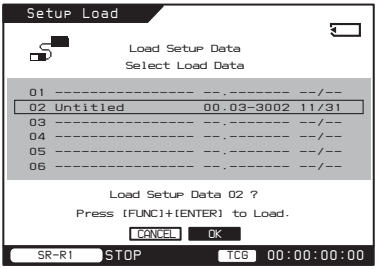
1 In the Setup Save/Load window, select and confirm "LOAD."

The Setup Save screen appears.

2 Select and confirm the number (01 to 06) of the bank from which to read the setup data.

A message for confirming the bank number of the read destination appears.

3 Confirm the bank number, select [OK], and then press the SELECT/ENTER dial while holding down the FUNC button.



Reading starts, and the setup data is loaded into the SR-R1.

Tip

If you want to cancel the operation, select and confirm [CANCEL] to return to the Setup Save screen.

The window of the format recorded in the setup data appears, and then the SR-R1 restarts after several seconds.

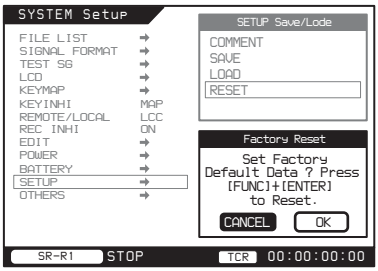
To restore the setup data to the factory default state (RESET menu)

You can restore the setup data to the factory default state.

1 In the Setup Save/Load window, select and confirm "RESET."

The Factory Reset screen appears, and then a message for confirming the reset appears.

2 Select [OK], and then press the SELECT/ENTER dial while holding down the FUNC button.



The setup data is restored to the factory default state.

Tip

If you want to cancel the operation, select and confirm [CANCEL] to return to the Setup Save screen.

The window of the format recorded in the setup data appears, and then the SR-R1 restarts after several seconds.

Date Settings

Display the System menu and select OTHERS >SET DATE menu to set the date and time of the unit.

To set the date and time (OTHERS >SET DATE menu)

1 Display the System menu, and then select and confirm "OTHERS" → select and confirm "SET DATE."

2 Set the year, month, day, local time, and UTC (Coordinated Universal Time) offset (e.g., +9:00 for Japan), and then select and confirm [SET].

Note

Time information is recorded to SRMemory cards in UTC format and is displayed using the offset value as its base.

Recording Line Settings for Input Metadata

Display the System menu and select OTHERS >META DATA menu to set the lines on which metadata layered on the input signal will be recorded.

To set the three metadata recording lines (OTHERS >META DATA menu)

1 **Display the System menu, and then select and confirm "OTHERS" → select and confirm "META DATA."**

2 **Set the three lines for recording, and then select and confirm [OK].**
The three selected lines are set.

Chapter 4 Recording and Playback

Recording Preparations and Operations

Before recording, make the following preparations.

Recording preparations

Preparation	Operation	Reference
Set the date and time for the unit.	OTHERS >SET DATE in the SYSTEM Setup menu	*page 31*
Select the format signals to record.	FORMAT in the SYSTEM Setup menu	*page 27*
Select the audio signals to record.	INPUT SEL in the AUDIO Setup menu	*page 33*
Set the audio signals to monitor.	PHONE SEL in the AUDIO Setup menu	*page 34*
Set the display range of the audio level meters.	METER TYPE in the AUDIO Setup menu	*page 34*
Set the recording levels.	REC LEVEL in the AUDIO Setup menu	*page 35*
Adjust the levels of audio signals output via the EARPHONES jack.	Rotate the LEVEL knob of the EARPHONES jack.	*page 10*
Cancel record inhibit if the system is set to record inhibit mode.	REC INHI in the SYSTEM Setup menu	*page 38*
Select the time data to display.	TIMER SEL in the TC Setup menu	*page 35*
Set time code generator operation in accordance with the time code and user bits to record.	RUN MODE, TCG MODE, and REGENE SOURCE in the TC Setup menu	*page 36*

Configure the other related menu settings as necessary.

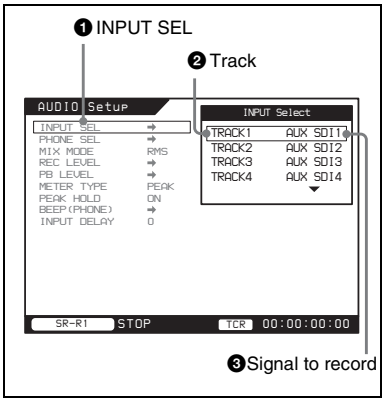
Setting the Audio Signals

Use the AUDIO Setup menu to make settings related to audio signals.
Press the AUDIO button to display the AUDIO Setup menu.

To select the audio signals to record

Select the audio signal to record for each track.

1 Display the AUDIO Setup menu and then ❶ select and confirm "INPUT SEL" →❷ select and confirm the track (TRACK1 to TRACK16) →❸ select and confirm the signal to record.



AUX SDI1 to AUX SDI16: Digital audio signals of the SDI signal input via the AUX SDI connector

SDI1 to SDI16: SDI signals input via the HD SDI IN connector A

ANA1 to ANA2: Analog signals input via the AUDIO INPUT CH-1 and CH-2 connectors

2 Set the signal to record for each of the other tracks in the same way.

To set the audio signals to monitor

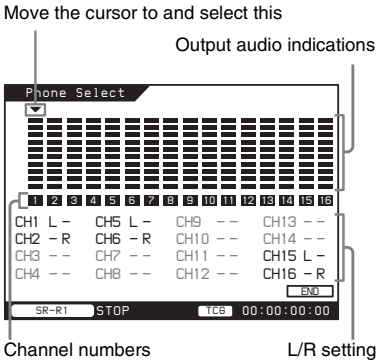
Set the audio monitor signal to output from the EARPHONES jack for each channel.

1 Display the AUDIO Setup menu and then select and confirm "PHONE SEL."

The Phone Select screen appears.

2 ❶ Select and confirm the channel number (1 to 16) →❷ press the SELECT/ENTER dial to select the channel L/R setting.

Each press of the SELECT/ENTER button changes the channel L/R setting in the order of "–L" →"–R "→"LR "→"– – ."



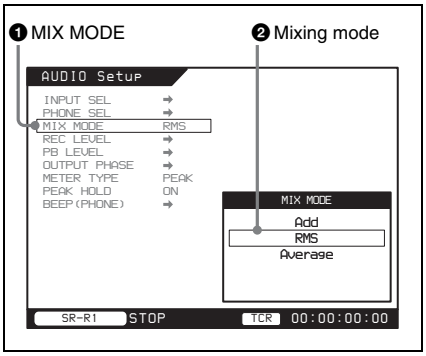
Set "– –" if you do not want to output the audio signal of the selected channel from the EARPHONES jack, and "LR" if you want to output the audio signal via both the left and right.

3 Set each of the other channels in the same way.

4 When you have finished making the settings, move the cursor to and confirm "END."

To set the mixing mode for audio signals

Display the AUDIO Setup menu and then ❶ select and confirm "MIX MODE" →❷ select and confirm the mixing mode.



ADD: Simple addition
RMS: Geometric mean
Average: Simple average

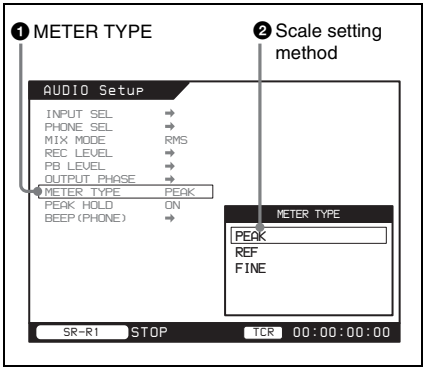
Setting the Recording Levels

Use the AUDIO Setup menu to make settings related to the recording levels.
Press the AUDIO button to display the AUDIO Setup menu.

The recording levels can be checked with the audio level meters displayed in the display on the control panel. The audio level meter indications automatically switch between the recording levels for during recording and the playback levels for during playback.

To set the display range of the audio level meters

Display the AUDIO Setup menu and then ❶ select and confirm "METER TYPE" →❷ select and confirm the scale setting method.



Full Peak: Displays 0 dBFS as the peak value.

Full Ref: Displays the reference level (+4 dBu) as 0 dB.

Fine: Displays a scale with 0.25 dB steps and the reference level at the center.

To set the recording levels

The recording level can be set for each channel.

Note

The recording levels cannot be set during playback.

1 Display the AUDIO Setup menu and then select and confirm "REC LEVEL."

The Rec Level screen appears.

2 Select and confirm the channel number (1 to 16).

When a channel is selected, the current recording level is indicated by a hexadecimal number. "UNI" is indicated for a channel whose recording level has not been changed.

3 Move the cursor to and confirm "VAR" → use the ADJUST knob to set and confirm the recording level.

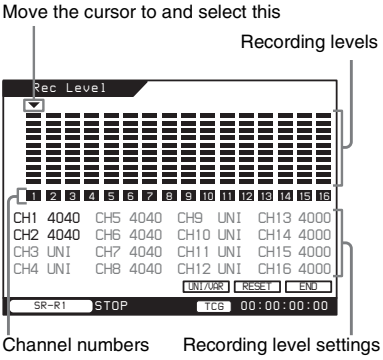
Rotate the knob clockwise to increase the level, and counterclockwise to decrease the level.

To reset the setting

Rotate the SELECT/ENTER dial to move the cursor to RESET, and then press the dial.

When you want to change the setting

Move the cursor to and confirm "UNI."



4 Set the recording level of each of the other channels in the same way.

5 When you have finished making the settings, move the cursor to and confirm "END."

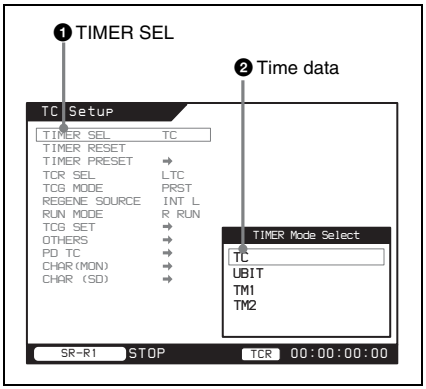
Setting the Time Code and User Bits

Use the TC Setup menu to make settings related to audio signals.

Press the TC button to display the TC Setup menu.

To select the time data to display

Display the TC Setup menu and then ❶ select and confirm "TIMER SEL" →❷ select and confirm the time data you want to display.



TC: Displays the time code.

UBIT: Displays the user bits.

TM1/TM2: Displays the timer value of Timer 1 or Timer 2.

To select the time code to record

The time code can be selected in the following menu.

Menu item		Time code
TCG MODE	**REGENE SOURCE**	
PRST	—	An arbitrary time code can be set. (R RUN/F RUN and DF/NDF can be set to an arbitrary value in the menu.)
RGN	EXT L	In accordance with the time code input via the TC IN connector.
	SDI L	In accordance with the LTC time code of the video signal input via the HD SDI IN A/B connector.
	SDI V	In accordance with the VITC time code of the video signal input via the HD SDI IN A/B connector.

To select the user bits to record

The user bits can be selected in the following menu.

Menu item			User bits
OTHERS > RT REC	**TCG SET > UBG SOURCE**	**TCG MODE**	
OFF	TCG	PRST	Arbitrary user bits can be set. (TIMER PRESET > TCG UBIT)
		RGN	In accordance with the user bit value of the time code selected for REGEN SOURCE.
	INT	—	Arbitrary user bits can be set regardless of the setting of TCG MODE. (TIMER PRESET > TCG UBIT)
VITC	—	—	Records the real time only in the user bits of VITC. (The user bits of LTC are in accordance with the setting of UBG SOURCE.)
V+L	—	—	Records the real time in the user bits of both VITC and LTC.
LTC	—	—	Records the real time only in the user bits of LTC. (The user bits of VITC are in accordance with the setting of UBG SOURCE.)

To record the time code

The following methods are available for recording the time code.

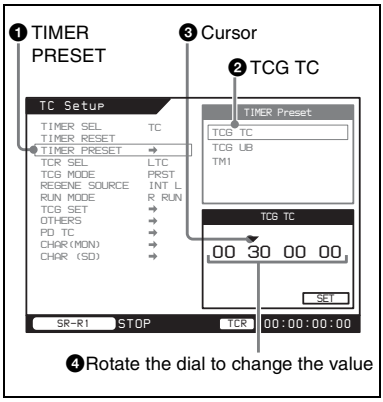
- Set the initial value and record the time code.
- Externally synchronize the internal time code generator.

To set the initial value and record the time code

Set an arbitrary initial value and then record the output of the internal time code generator.

1 Display the TC Setup menu and then ❶ select and confirm "TIMER PRESET" →❷ select and confirm "TCG TC" →❸ move the cursor to and confirm the digit of the value you want to change →❹ rotate the SELECT/ENTER dial to change the value and then confirm the value.

Set the other digits as necessary.



2 When you have finished making the settings, move the cursor to and confirm "SET."

If "RUN MODE" is set to "F RUN," the time code starts advancing immediately.

To set all digits to 0

Select and confirm TC Setup > TIMER RESET to return all values to 0.

To externally synchronize the internal time code generator

Record the output of the internal time code generator synchronized to the time code of an external input.

Use the following method to synchronize the time code generators of multiple VTRs.

Display the TC Setup menu and then set "TCG MODE" to "RGN" and select the signal for the time code generator to regenerate in "REGENE SOURCE."

For details, see "To select the time code to record" (page 36).

To record the user bits

By setting user bits, you can record up to eight hexadecimal digits of information (date, time, etc.) in time code tracks.

To set an arbitrary value and then record user bits

1 Display the TC Setup menu and then set OTHERS > RT REC to "OFF."

To set arbitrary user bits regardless of the setting of "TCG MODE," set TCG SET > UBG SOURCE to "INT." If "TCG MODE" is set to "PRST," TCG SET(MAIN) > UBG SOURCE can be set to any value.

For details, see "To select the time code to record" (page 36).

2 Set the user bits using the same procedure as *"To set the initial value and record the time code" (page 37)*.

Tip

As with the time code, all digits can be returned to 0 with "TIMER RESET."

To record the real time in user bits

1 Display the TC Setup menu and then select and confirm the recording method (VITC only, both VITC and LTC, or LTC only) in OTHERS > RT REC.

Tip

The setting of OTHERS > RT REC is given priority regardless of the setting of TCG SET > UBG SOURCE.

2 Return to the level above and then select and confirm "RT SET."

The real time setting window appears.

3 **Select and confirm the digit to change → change and confirm the value.**

4 **When you have finished making the settings, move the cursor to and confirm "SET."**

Recording

1 **Check that the REC INHI indicator is off and then insert an SRMemory card.**
Before you insert the SRMemory card, check that its write-protect switch is not set to "WP."

For details, see "To insert the SRMemory card" (page 23) and "Write-protecting the card" (page 24).br

When the REC INHI indicator is lit
Record inhibit is set. Set SYSTEM Setup > REC INHI to "OFF." *(see page 80)*

2 **Press the PLAY button while holding down the REC button.**
Recording starts, and "REC LOCK" appears.

3 **Press the STOP button to stop recording.**

To pause recording and record sequentially

1 **Press the PLAY button while holding down the REC button.**
Recording starts.

2 **Press the PAUSE button when you want to pause recording.**

3 **Press the PAUSE button when you want to resume recording.**

4 **Repeat steps 2 and 3.**
The recording is saved as one file.

Note

Sequential recording is not possible for a file for which recording is finished.

Playback Preparations and Operations

Making Settings Related to Audio Monitor Signals

The AUDIO Setup menu allows you to make various settings related to audio monitor signals for playback. The setting procedures are the same as for recording.

For details, see "Setting the Audio Signals" (page 33) and "AUDIO Setup Menu" (page 74).

To adjust the level of audio output via the EARPHONES jack
Rotate the LEVEL knob.

Adjusting Playback Audio Levels

The playback audio level can be set for each channel in "PB LEVEL" of the AUDIO Setup menu.
The setting procedure is the same as in steps 2 and 3 of *"To set the recording levels" (page 35)*.

Note

The playback audio level cannot be adjusted during recording.

To set the display range of the audio level meters

See "To set the display range of the audio level meters" (page 34) for during recording.

Selecting the Time Data to Display During Playback

Display the TC Setup menu and then select the time data you want to display in "TIMER SEL."
TC: Displays the LTC or VITC read by the internal time code reader.
Select which one is read in "TCR SEL" in the TC Setup menu.
UBIT: Displays user bits inserted in the playback time code.
TM1/TM2: The values counted in accordance with the playback frames.

(With TM2, the beginning of the file is 0 and the value cannot be reset.)

Playback

1 Insert the SRMemory card to play back.

For details, see "To insert the SRMemory card" (page 23).

2 Press the PLAY button.
Playback starts and the PLAY LOCK indication lights up.

3 Press the STOP button when you want to stop playback.

How to Use the Recording and Playback Operation Buttons

Button	Function when pressed alone	Function when pressed with FUNC button
STOP button	Stops the recording and playback operation.	—
PLAY button and indicator	Starts playback. (The indicator is lit during playback.) To start recording, press this button while holding down the REC button.	You can play the last recorded file to review whether or not the file was recorded correctly. • Pressing once plays the last 3 seconds. • Pressing and holding the FUNC+PLAY buttons rewinds for the duration the buttons are pressed, and then plays (can rewind up to 10 seconds).
REC button and indicator	To start recording, press the PLAY button while holding down this button. (The indicator is lit during recording.) If you press this button during playback or during a search, the system enters E-E mode 1) and you can monitor the E-E signal 2) output from the HD SDI OUT connectors A/B.	—
REW button and indicator	Moves to the beginning of the current file. If this button is pressed when at the beginning of the file, moves to the beginning of the previous file.	Executes a reverse direction search. With each press, the search speed changes in the order of x2 → x5 → x8 → x16 → x50 → x100 → x2 ... If a search is interrupted by another operation, the next search is performed at the speed in effect at the time of the interruption.
F FWD button and indicator	Moves to the beginning of the next file.	Executes a forward direction search. With each press, the search speed changes in the order of x2 → x5 → x8 → x16 → x50 → x100 → x2 ... If a search is interrupted by another operation, the next search is performed at the speed in effect at the time of the interruption.
PAUSE button and indicator	Pauses recording or playback. (The indicator flashes during pause.) Pressing this button again resumes recording or playback.	—

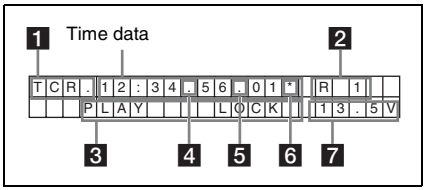
1) E-E mode
The state in which E-E signals can be monitored. This mode is used to, for example, check the input signal before recording.

2) E-E (electric to electric) signal:
A signal which passes solely through internal circuitry, and not through pathways in which SRMemory card takes place.

Making Superimpose Settings

Time codes, operating modes, warning/error messages, and other text information can be superimposed on (added to) the video signals output from the HD SDI OUT connectors.

Superimposed information displayed



1 Time data types

Symbol	Meaning
TM1	Data of TM1 counter
TM2	Data of TM2 counter
TCR	Time code data of LTC reader
UBR	User bit data of LTC reader
TCR.	Time code data of VITC reader
UBR.	User bit data of VITC reader
TCG	Time code data of time code generator
UBG	User bit data of time code generator

2 Remaining amount of recording time on SRMemory card

The remaining amount of recording time is indicated as shown below.

When remaining amount of recording time is 23 minutes

TCR. 23:59:40:18 R23

When remaining amount of recording time is 5 minutes

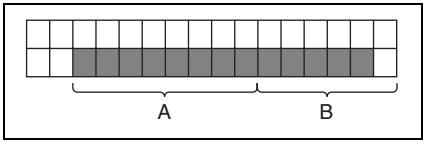
TCR. 23:59:40:18 R 5

3 Operation mode

The information is divided into blocks A and B and displayed as shown below.

Block A: Operating mode

Block B: Mode lock state or playback speed



There are the following operating mode indications.

“SYSTEM READY”
“SRMEMORY OUT”
“REC”
“REC LOCK”
“REC PAUSE”
“PLAY”
“PLAY LOCK”
“PLAY PAUSE”
“F.FWD”
“REW”
“UNMOUNT”
“STOP”

4 Drop frame mark of the time code reader

“ . ”: When drop frame mode
“ : ”: When non-drop frame mode

5 Drop frame mark of the time code generator

“ . ”: When drop frame mode
“ : ”: When non-drop frame mode

6 VITC field mark

“ ” (blank): When odd field displayed
“*”: When even field displayed

7 Battery voltage

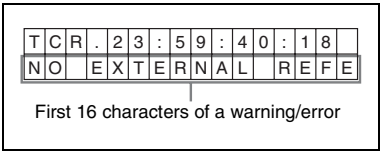
Indicates the voltage of the battery or AC power supply.

To display warning/error messages

1 Set CHAR >MODE in the TC Setup menu to other than “TIME.”

2 Set “WARN” to “W+E” to display both warning messages and error messages, and set it to “ERR” to display only error messages.

The first 16 characters of a message flash on the second line.



For details, see "Error Messages and Warning Messages" (page 88).

When there are multiple warning/error messages at the same time, a message flashes twice in succession and then is replaced by the next message.
When a warning/error message is not being displayed, the information selected in CHAR > MODE in the TC Setup menu flashes on the second line.

To change the superimpose position

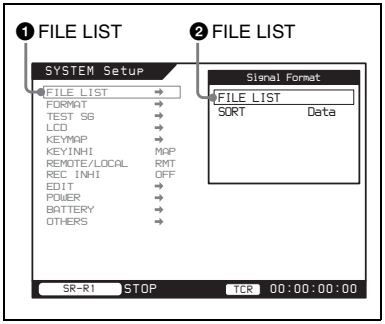
The superimpose position can be moved to 16 different positions in the horizontal direction (0 to 15) and 24 different positions in the vertical direction (0 to 23).
Set the position in CHAR > HPOS/VPOS in the TC Setup menu.

FILE LIST Operations

"FILE LIST" in the SYSTEM Setup menu allows you to perform operations such as displaying a list of the files recorded to the SRMemory card, displaying detailed information, performing file operations (deleting and renaming), and playing back files.

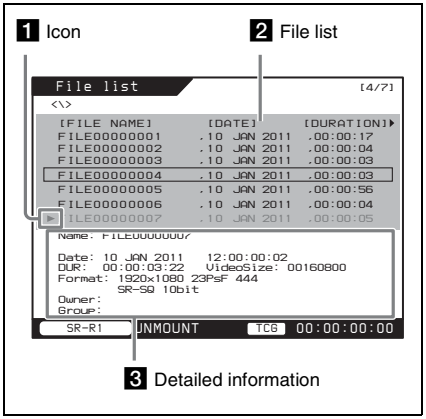
Displaying a File List

1 Display the SYSTEM Setup menu and then ❶ select and confirm "FILE LIST" →❷ select and confirm "FILE LIST."



The File list window appears.

Displayed information



1 Icons

An icon indicates the current file state.

White: Stopped

Green: Playing

Red: Recording

2 File list

A list of files recorded to the SRMemory card is displayed.

The files that cannot currently be played by the system are displayed in gray.

The icon of a file that is recording is displayed in red, and the icon of a file that is playing is displayed in green (current file).

3 Detailed information

The detailed information of the selected file is displayed.

Thumbnail: Thumbnail image time code

Format: Recording data format type

Data: Recording date and time

DUR (Duration): Number of frames in file

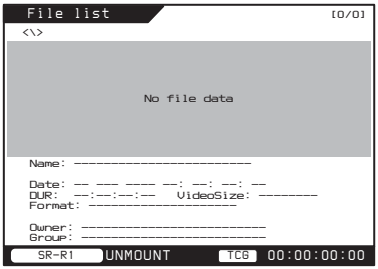
VideoSize: File size (512-byte units)

Name: File name

Owner: File owner

Group: Group to which the file belongs

Display when the SRMemory card contains no files



Display during recording

When recording starts, a new file with a red icon to indicate recording is in progress is added to the list. When recording stops, the icon turns white (current file).

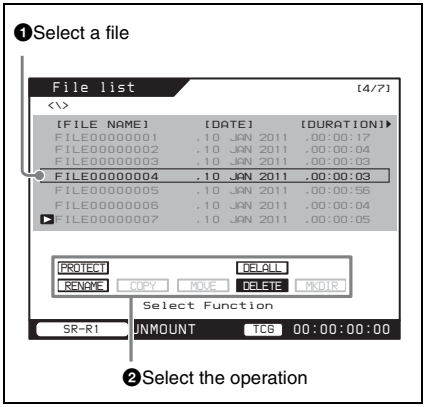
To select a file to play back

If you use the SELECT/ENTER dial to select and confirm the file you want to play back, the icon moves, the file opens, and playback starts.

Performing File Operations

Files can be renamed and deleted.

❶ Select a file and then press the SELECT/ENTER dial while holding down the FUNC button to confirm the selection →❷ select and confirm the desired operation.



RENAME: Renames the file.

COPY: This is currently not supported.

MOVE: This is currently not supported.

DELETE: Deletes the file.
MKDIR: This is currently not supported.
PROTECT: Changes the file protection setting.
DEL ALL: Deletes all files.

To rename a file

Select and confirm RENAME to display the file rename screen.
Rename the file and then move the cursor to and confirm [END] to apply the file name.

To cancel the change

Press the BACK button to return to the File list screen.

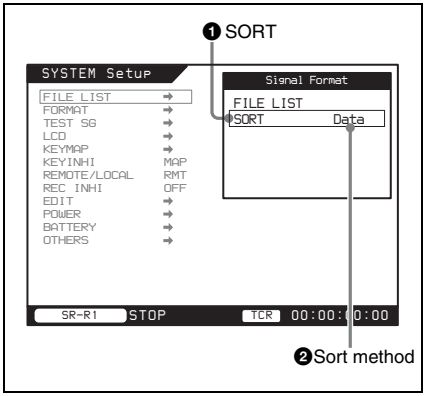
To delete a file

Select and confirm DELETE to display the confirmation screen.
Select [OK] and then press the SELECT/ENTER dial while holding down the FUNC button to confirm the selection and delete the file.
To cancel the deletion, select and confirm [CANCEL] or press the BACK button to return to the file list.

Changing the File Display Order

The display order of files in the file list can be changed.

❶ Select and confirm [SORT] → ❷ select and confirm the sort method.



DATA: Displays the files in date order.
NAME: Displays the files in file name order.
SIZE: Displays the files in file size order.

Timer Rec

Timer Rec is a function that allows you to capture and record images at specified intervals. It is similar to the Interval Rec function of previous models but enables time-lapse recording and recording over longer periods.
Timer Rec has the following methods.

- **Manual Timer Rec**
  Set the number of frames to record in a single take. Each time that recording starts, only the set number of frames is captured continuously.
- **Auto Timer Rec**
  Set the number of frames to record in a single take and the number of seconds (interval) at which to start recording. Each time that recording starts after the set interval, only the set number of frames is captured continuously.

Notes

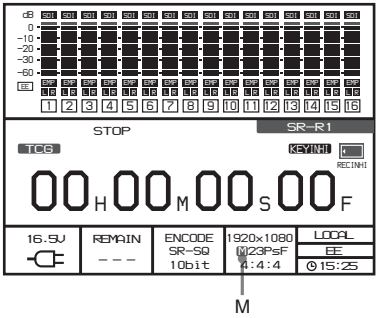
- Before recording with Timer Rec, set "SELECT FPS" in the SYSTEM Setup menu to "OFF."
- Timer Rec and Cache Rec cannot be used at the same time.

Manual Timer Rec

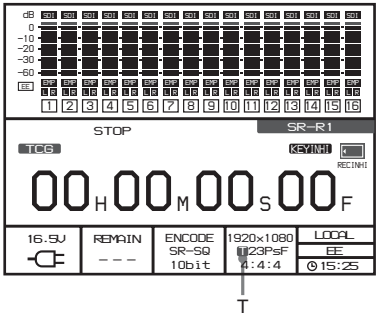
1 Display the SYSTEM Setup menu and then set EDIT > TIMER REC to "MANU" → select and confirm "Manu Frm."
The settings window appears.

2 Set and confirm the number of frames to record in a single take.

3 Start recording.
During the Manual Timer Rec operation, "M" is displayed before the number of lines of the signal format indication on the HOME screen.



When Manual Timer Rec is running, the set number of frames of video is recorded each time the PAUSE button is pressed, and the system enters the recording standby state each time recording finishes.



Recording starts at the set interval, and the set number of frames of video is recorded. The tally lamp on the unit is lit during recording

To cancel Manual Timer Rec mode

Press the STOP button.

Auto Timer Rec

1. **Display the SYSTEM Setup menu, set EDIT > TIMER REC to "AUTO," and confirm the setting.**
2. **Select "Interval" → set and confirm the interval (hours/minutes/seconds) for recording in the settings window that appears.**
3. **Select "Auto Frm" → set and confirm the number of frames to record in a single take in the settings window that appears.**
4. **Set the system to the recording pause state.**

   During the Auto Timer Rec operation, "T" is displayed before the number of lines of the signal format indication on the HOME screen.

Cache Rec

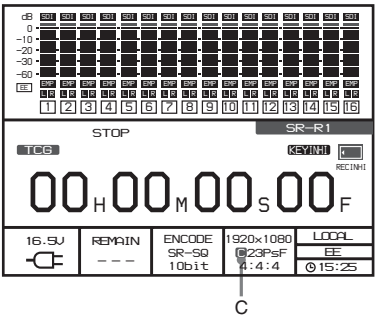
Cache Rec is a function that stores the video and audio that the camera is currently capturing in memory to enable you to record video and audio from several seconds before recording is started (when the unit is in standby on mode and SR Motion is not being used).

Note

Cache Rec and Timer Rec cannot be used at the same time.

1 Display the SYSTEM Setup menu, set EDIT > CACHE REC to "100%," and confirm the setting.

During the Cache Rec operation, "C" is displayed before the number of lines of the signal format indication on the HOME screen.



2 Set the unit to standby on mode.

To switch from standby off mode to standby on mode

When the unit is in stop mode, press the STOP button.

When recording is paused, press the REC button.

Tip

The time after which the unit switches from standby on mode to standby off mode can be set with the POWER > STBY OFF item in the SYSTEM Setup menu.

3 Press the PLAY button while holding down the REC button to start recording.

Note

If the PLAY button is pressed first, playback will start and the video and audio stored in memory will be cleared.

To perform sequential recording

Perform the procedure described in *"To pause recording and record sequentially" (page 38)* (you will need to record for at least ★ seconds continuously).

To pause recording and then resume recording

Record for at least ★ seconds and then press the PAUSE button to switch the unit to the recording paused state (the unit starts storing the video and audio in memory). Press the PAUSE button again to resume recording (the unit starts transferring the data from memory).

Memory effect of Cache Rec

The Cache Rec function has the effect of making recording start up to ★ seconds in advance. When recording is started, the number of seconds video and audio can be recorded in advance of pressing the REC button is determined depending on whether SR Motion is being used when ★ recording is started. The approximate number of seconds (when frame frequency is 1080/59p) is shown below.

Unit status	Timing for starting recording	
	Standby on mode	Standby off mode
When not using SR Motion	From about ★ seconds before	From about ★ to ★ seconds after
When using SR Motion	From about ★ seconds before	From about ★ seconds after

Note

The values shown above vary depending on factors such as the frame frequency and the operating conditions immediately before. Perform a recording test beforehand.

SR Motion

SR Motion is a function that allows you to obtain slow and quick motion effects by setting different values for the number of frames at shooting time and the number of frames in the recoded material (number of frames at playback time and target frame frequency). You can check (review) the motion effects immediately after shooting. Since only the required number of frames is recorded, no format conversion is needed.

SR Motion has the following functions.

Function	Features	Reference
Select FPS[1)]	Provides smooth slow and quick motion effects without skipped frames. Changing the number of frames shot during recording provides motion effects with variable speeds (Ramp function).	*page 53*
Interval Frame	Provides slow and quick motion effects without afterimage. Changing the number of frames extracted during recording provides motion effects with variable speeds (Ramp function).	*page 59*

1) This is only supported when PMW-F3 is connected.

See page 98 for information on the supported camera combinations, operations, connections, and available functions.

Notes

- Audio is not recorded correctly with SR Motion.
- SR Motion cannot synchronize two or more recorders, even if REGEN SOURCE is set to "EXT L(External LTC)."

What is the target frame frequency?

Normally, the frame frequency of recorded material is determined before shooting (for example, it is usually set to 24 Hz for movies, and 29.97 Hz or 25 Hz for TV programming) and then the recorded material is played back at that frame frequency after shooting. In SR Motion, the pre-determined number of frames of recorded material per second is called the "target frame frequency."
SR Motion enables motion effects to be achieved by appropriately setting three variables: the "target frame frequency," the "system frequency" at shooting time, and the "number of frames shot" at shooting time.

Slow or quick motion effects can be obtained by recording with a system frequency or number of frames set to a value that is different from the target frame frequency. On the other hand, normal speed video can be obtained by recording with the system frequency and the number of frames set to the same value as the target frame frequency.

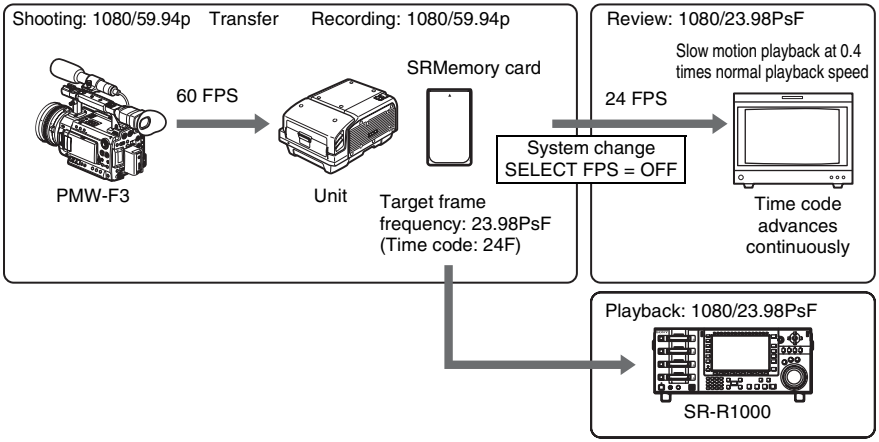
Typical examples of using SR Motion

Slow motion

The following example illustrates shooting and recording with the Select FPS function at the system frequency of 59.94p, and playback at the system frequency of 23.98PsF.

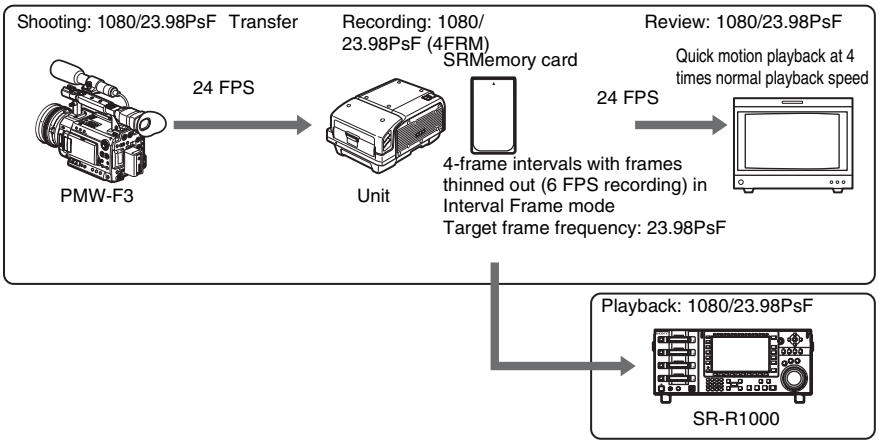
When video shot and recorded at 60 frames per second (FPS) is played back at 24 FPS, it is played back in slow motion at 24/60 = 0.4 times normal playback speed.

If you set the format for recording in accordance with the target frame frequency (system frequency at playback), the time code can continuously advance during playback. Editing or other post-processing of the recorded file in 1080/23.98PsF format is possible.



Quick motion

The following example illustrates shooting at the system frequency of 23.98PsF, recording at 4FRM (4-frame intervals) with frames thinned out in Interval Frame mode, and playback at the system frequency of 23.98PsF.
When video shot at 24 frames per second (FPS) is recorded at 4-frame intervals with frames thinned out (24/4 = 6 FPS recording) and played back at 24 FPS on this unit, it is played back in quick motion at 24/6 = 4 times normal playback speed. Editing or other post-processing of the recorded file in 1080/23.98PsF format is possible.

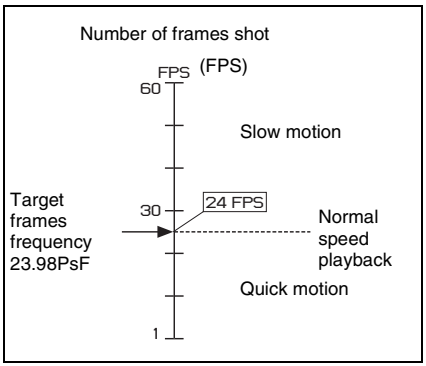


Relation between the target frame frequency and number of frames

To obtain the desired slow and quick motion effects, it is necessary to set the appropriate number of frames in accordance with the target frame frequency. To obtain quick motion effects, shoot with undercranking. To obtain slow motion effects, shoot with overcranking.

Example: When the target frame frequency is 23.98PsF

To obtain quick motion effects: Set 1 to 23 FPS.
To obtain slow motion effects: Set 25 to 60 FPS.
Shooting at 60 FPS results in playback in slow motion at 0.4 times normal playback speed.

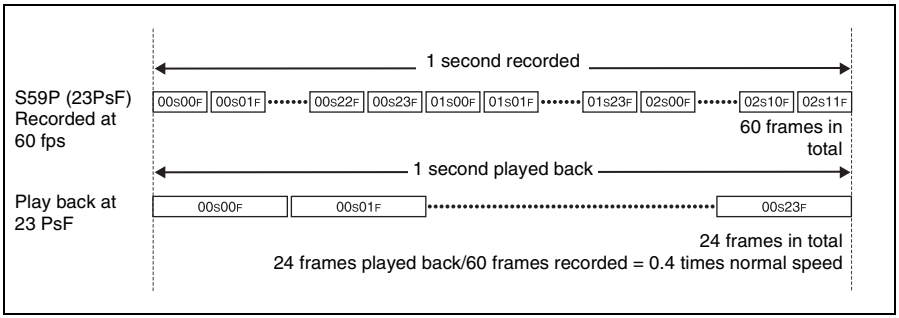


Relation between the target frame frequency and time code

When the system frequency is 23.98 Hz, the time code normally advances from 0 to 23 frames, and this becomes the time code of the recorded material (target frame frequency). If the rate at which the time code advances is not constant within the recorded material, a time code discontinuity occurs at playback time. For this reason, set the target frame frequency at recording time to the same value as the time code at playback time.

In SR Motion shooting, it is possible to set the target frame frequency and the system frequency at recording time to different values.
For example, if 60 frames are recorded with the target frame frequency set to 23.98 Hz and the system frequency set to 59.94 Hz, then 60 frames per second of video are recorded, but the time code does not advance from 0 to 59 frames and instead advances from 0 to 23 frames to match the target frame frequency. If 1 second is recorded with these settings beginning from the 00 second 00 frame, the time code advances quickly from the second 00 frames 00 to 23 and then continues to advance as second 01 frames 00 to 23, and finally as second 02 frames 00 to 11, at which point a total of 60 frames have been recorded (see the following figure).

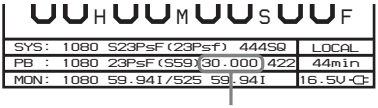
If a file recorded in this way is played back when the system frequency is set to 23.98 Hz (played at a target frame frequency of 23.98PsF), the video is played back in slow motion at 24/60 = 0.4 times normal speed. However, the time code advances by 1 second in the space of 1 second. Even if sections have different numbers of frames, the playback time code is continuous and no discontinuity occurs.



Operation of unit during slow and quick motion playback

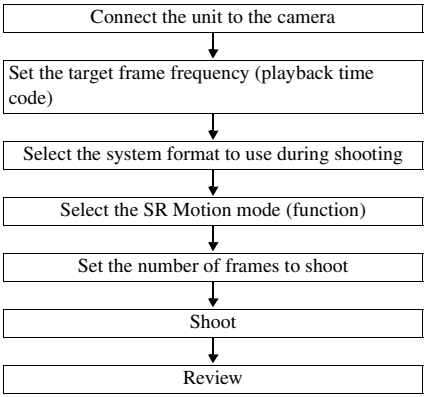
Playback of file recorded with SR Motion

When you play a file that was shot with SR Motion, the FPS value during shooting is shown in the playback frequency display position of the PB line.



FPS value

SR Motion Operation Flow



Target Frame Frequencies and Signal Formats

The following table shows the combinations of target frame frequencies and signals formats that are required for SR Motion shooting.

Menu settings				Unit state	
Format		FPS FORMAT	SELECT FPS	System frame frequency (Hz)	Format indication
SIGNAL	FRAME (target frame frequency)				
1280 × 720 4:2:2	50	50		50	1280 × 720 S50P (50PsF) 4:2:2
	59.94	59/60		59.94	1280 × 720 S59P (59PsF) 4:2:2
1920 × 1080 4:2:2	23.98	23/24		23.98	1920 × 1080 S23PsF (23PsF) 4:2:2
		29/30		29.97	1920 × 1080 S29PsF (29PsF) 4:2:2
		DEF or 59/60		59.94	1920 × 1080 S59PsF (23PsF) 4:2:2
	24	23/24		24	1920 × 1080 S24PsF (24PsF) 4:2:2
		25		25	1920 × 1080 S25PsF (24PsF) 4:2:2
		DEF or 50		50	1920 × 1080 S50PsF (24PsF) 4:2:2
	25	25		25	1920 × 1080 S25PsF (25PsF) 4:2:2
		DEF or 50	When set to ON or RECORDER ⇨	50	1920 × 1080 S50PsF (29PsF) 4:2:2
	29.97	29/30		29.97	1920 × 1080 S29PsF (29PsF) 4:2:2
		DEF or 59/60		59.94	1920 × 1080 S59PsF (29PsF) 4:2:2
	50	50		50	1920 × 1080 S50P (50P) 4:2:2
	59.94	59/60		59.94	1920 × 1080 S59P (59P) 4:2:2
1920 × 1080 4:4:4	23.98	23/24		23.98	1920 × 1080 S23PsF (23PsF) 4:4:4
		29/30		29.97	1920 × 1080 S29PsF (23PsF) 4:4:4
		DEF or 59/60		59.94	1920 × 1080 S59P (23PsF) 4:4:4
	24	23/24		24	1920 × 1080 S24PsF (24PsF) 4:4:4
		25		25	1920 × 1080 S25PsF (24PsF) 4:4:4
		DEF or 50		50	1920 × 1080 S50P (24PsF) 4:4:4

Menu settings				Unit state	
Format		FPS FORMAT	SELECT FPS	System frame frequency (Hz)	Format indication
SIGNAL	FRAME (target frame frequency)				
1920 × 1080 4:4:4	25	25	When set to ON or RECORDER ⇨	25	1920 × 1080 S25PsF (25PsF) 4:4:4
		DEF or 50		50	1920 × 1080 S50P (25PsF) 4:4:4
	29.97	29/30		29.97	1920 × 1080 S29PsF (29PsF) 4:4:4
		DEF or 59/60		59.94	1920 × 1080 S59P (29PsF) 4:4:4
	50	50		50	1920 × 1080 S50P (50P) 4:4:4
	59.94	59/60		59.94	1920 × 1080 S59P (59P) 4:4:4

Setting example

Number of lines (LINE): 1920 × 1080
Signal format (SIGNAL): 4:4:4
Target frame frequency (FRAME): When 24 Hz 23/24, 25, or 50 can be selected for "FPS FORMAT."
These selections differ in their system frequencies, slow motion effects, etc.

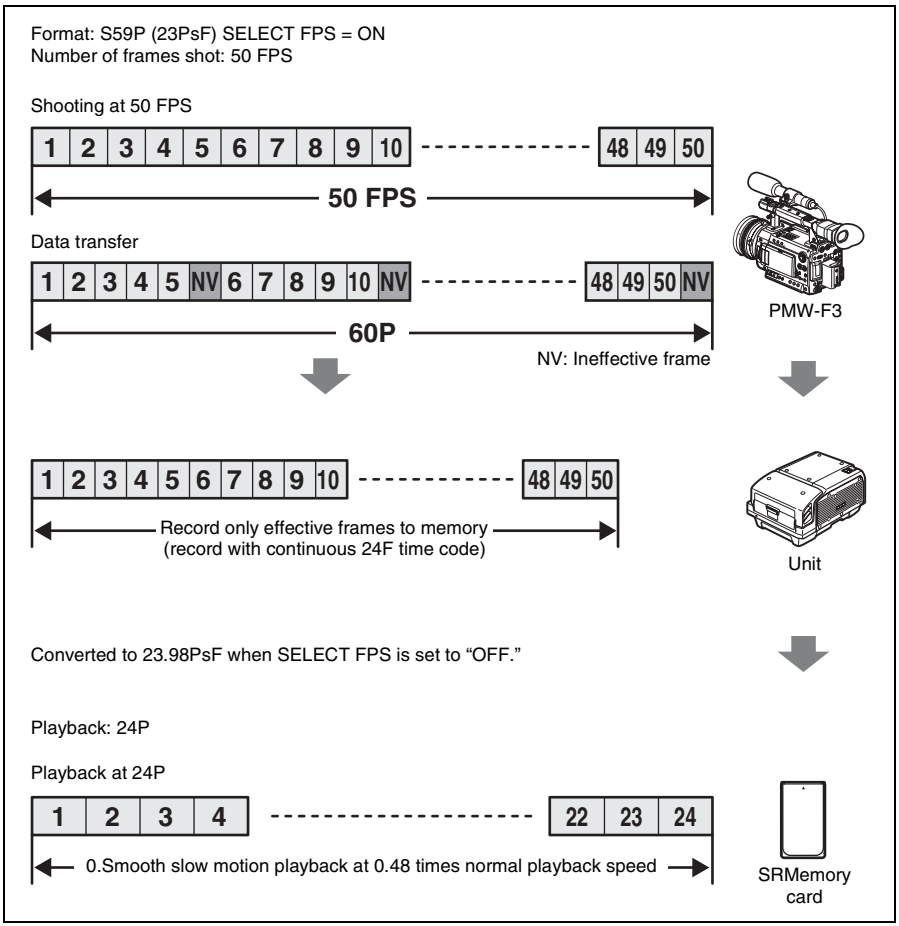
- When 23/24 is selected
  The system frame frequency is set to 24 Hz.
  Input a 24PsF signal. The maximum number of frames is 24 FPS. If 1FRM is selected for the Interval Frame function, this becomes 24 FPS (one times normal playback speed).
- When 25 is selected
  The system frame frequency is set to 25 Hz.
  Input a 25PsF signal.
  The maximum number of frames is 25 FPS.
- When 50 is selected
  The system frame frequency is set to 50 Hz.
  Input a 50P signal. Since the number of frames can be set to up to 50 FPS, this selection is effective for further enhancing slow motion effects.
  The output can be displayed on a monitor that supports 50P.
  The output can also be displayed on a monitor that supports 50i using a single link, but the display is simplified and the image vertical resolution will appear different to the actual image.

Select FPS Function

Select FPS is a function that allows you to obtain smooth motion effects without skipped frames by connecting the unit to PMW-F3, adjusting the number of frames, and then shooting. Changing the number of frames shot during recording provides motion effects with variable speeds *(Ramp function, see page 63)*.
The number of frames recorded in 1 second is indicated as FPS (frames per second).
The number of frames can be set in 1-FPS increments within the range of 1 to 60 FPS.

Relation between the number of frames shot and number of playback frames (Basic concept of Select FPS)

To obtain the desired slow or quick motion effects using the Select FPS function, it is necessary to set the appropriate number of frames to shoot. If you shoot using a camera with the number of frames shot set to 50 FPS, transfer from the camera to the unit is at 60P for the signal of 50 frames (50 FPS) from the camera, so the transferred data is padded with frames (ineffective frames) in which no signal is recorded. This unit extracts and stores only effective frames and records them to an SRMemory card. When the recorded file is played back at 24P, a slow motion effect of 0.48 times normal playback speed is obtained.



Using the Select FPS function

1 Connect the unit to the PMW-F3.

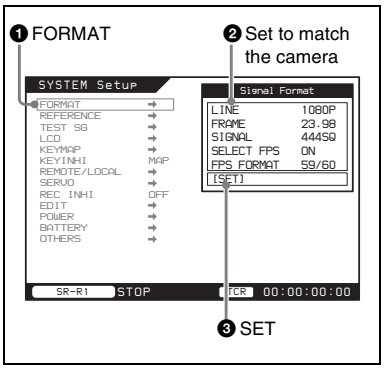
For details on the connection settings, refer to the operation manual supplied with the PMW-F3.

2 Make the system settings.

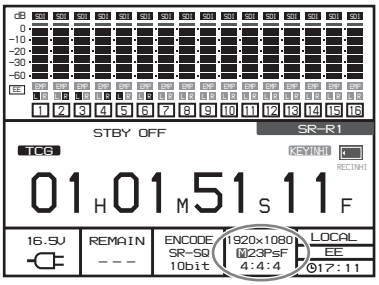
Select the target frame frequency (24, 25, or 30PsF) and recording format (4:2:2, 4:4:4 SQ, or 4:4:4 HQ).

For details, see "Formats available for Select FPS shooting" (page 57).

Setting example: When setting the target frame frequency to 24PsF (23.98PsF) and recording format to 4:4:4 SQ
Display the SYSTEM Setup menu and then ❶ select and confirm FORMAT →❷ set the format to match the system format of the camera as shown below →❸ move the cursor to and confirm [SET].



The formats of the unit and camera are switched, and "S59P(23PsF)" is displayed on the display (for about 30 seconds).



The "S" in S59P indicates that SR Motion is enabled (SELECT FPS is set to "ON"), and the "59P" indicates that FPS FORMAT is set to 59.94P. The "(23PsF)" indicates that the target frame frequency is set to 23.98PsF.

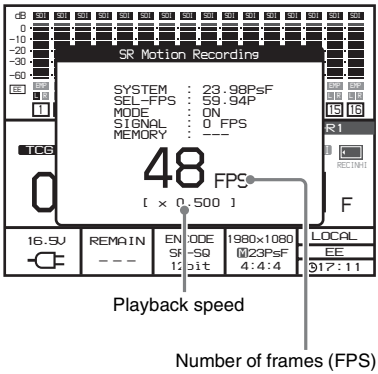
To make the time code continuous
Make the following settings in the TC Setup menu. *(see page 37)*
RUN MODE: R RUN (Rec Run)
TCG MODE: PRST (Preset)

3 Set the number of frames to shoot.

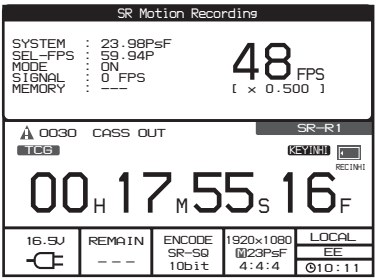
You can also set the number of frames to shoot from the camera. For details, refer to the operation manual supplied with the PMW-F3.

You can also change the number of frames to shoot during recording. For details, see "Using the Ramp function" (page 63).

If you press the SELECT/ENTER dial while holding down the FUNC button, the following screen appears, allowing you to check the number of frames to shoot.



If you press the SELECT/ENTER dial or do not touch it for 3 seconds, the display screen returns to the state before you made the setting.
If you display the screen above and then press the SELECT/ENTER dial while holding down the FUNC button again, the following screen appears. If you press the HOME button while holding down the FUNC button in this state, the signal format display at the bottom of the screen changes to the SR Motion display, allowing you to check the setting for the number of frames to shoot.



4 Start shooting.

① Set the number of frames to be shot by the camera (FPS value).
② Start recording.
If necessary, you can change the FPS value.
③ Stop recording.

5 Review.

① To play back with the target frame frequency at 23.98PsF, set Select FPS to "OFF" in the SYSTEM > FORMAT menu.
② Press the SET button to switch the format of the unit.
③ Load the recording file from the file list and press the PLAY button to start playback.

You can check the slow or quick motion shooting effect at the target frame frequency of 23.98PsF. The time code advances from 0 to 23 frames per second. You can also perform simple playback without checking the motion effects.

To perform simple playback without checking the motion effects

Press the PLAY button after shooting to play the last recorded file.
Simple playback allows you to check recorded video in fewer steps than normal playback. However, it does not allow you to check the slow or quick motion effects.

Formats available for Select FPS shooting

When Select FPS is on

Select FPS setting	Signal	FPS Format (system frame frequency)	FRAME (target frame frequency)	ENCODE			
				DPX[1]	SR-HQ[1]	SR-SQ	SR-Lite
ON	1280 × 720 4:2:2	50	50	●[2]	—	●[2]	●[2]
		59.94	59	●[2]	—	●[2]	●[2]
	1920 × 1080 4:2:2	23.98	23	●[3]	—	●[3]	●[3]
		24	24	●[3]	—	●[3]	●[3]
		25	24/25	●[3]	—	●[3]	●[3]
		29.98	23/29	●[3]	—	●[3]	●[3]
		50	24/25/50	●[4]	—	○[4]	○[4]
		59.94	23/29/59	○[4]	—	○[4]	○[4]
	1920 × 1080 4:4:4[5]	23.98	23	●[3]	●[3]	●[3]	—
		24	24	●[3]	●[3]	●[3]	—
		25	24/25	●[3]	●[3]	●[3]	—
		29.98	23/29	●[3]	●[3]	●[3]	—
		50	24/25/50	○[4]	○[4]	○[4]	—
		59.94	23/29/59	○[4]	○[4]	○[4]	—

● : Also supported for 3D
○ : Supported
— : Not supported

1) SRK-R311 is required for recording with DPX or SR-HQ.
2) Connect by SDI Dual or 3G SDI when 3D.
3) Connect by SDI Dual or 3G SDI. Connect by 3G SDI when 3D.
4) Connect by 3G SDI.
5) SRK-R311 is required for 3D recording at 4:4:4.

When Select FPS is off

Select FPS setting	Signal	FRAME (frame frequency)	ENCODE			
			DPX[1)]	SR-HQ[1)]	SR-SQ	SR-Lite
OFF	1280 × 720 4:2:2	50	●[2)]	—	●[2)]	●[2)]
		59.94	●[2)]	—	●[2)]	●[2)]
	1920 × 1080 4:2:2	23.98	●[3)]	—	●[3)]	●[3)]
		24	●[3)]	—	●[3)]	●[3)]
		25	●[3)]	—	●[3)]	●[3)]
		29.97	●[3)]	—	●[3)]	●[3)]
		50	○[4)]	—	○[4)]	○[4)]
		59.94	○[4)]	—	○[4)]	○[4)]
	1920 × 1080 4:4:4[5)]	23.98	●[3)]	●[3)]	●[3)]	—
		24	●[3)]	●[3)]	●[3)]	—
		25	●[3)]	●[3)]	●[3)]	—
		29.97	●[3)]	●[3)]	●[3)]	—
		50	○[4)]	○[4)]	○[4)]	—
		59.94	○[4)]	○[4)]	○[4)]	—

● : Also supported for 3D
○ : Supported
— : Not supported

1) SRK-R311 is required for recording with DPX or SR-HQ.
2) Connect by SDI Dual or 3G SDI when 3D.
3) Connect by SDI Dual or 3G SDI. Connect by 3G SDI when 3D.
4) Connect by 3G SDI.
5) SRK-R311 is required for 3D recording at 4:4:4.

Interval Frame Function

Interval Frame is a function that allows you to obtain motion effects without afterimage by setting the interval for extracting frames from the video that was shot, even when it was shot with a camera that does not support the Select FPS function. Furthermore, you can obtain variable-speed motion effects by changing the interval for extracting frames during recording *(Ramp function, see page 66)*.

With the Interval Frame function, frames are extracted at the set interval from the video that was shot and then recorded to memory.

Set the frame interval to use for extraction within the following range.

For a 4:2:2 system: 1 to 64 FRM (frames)

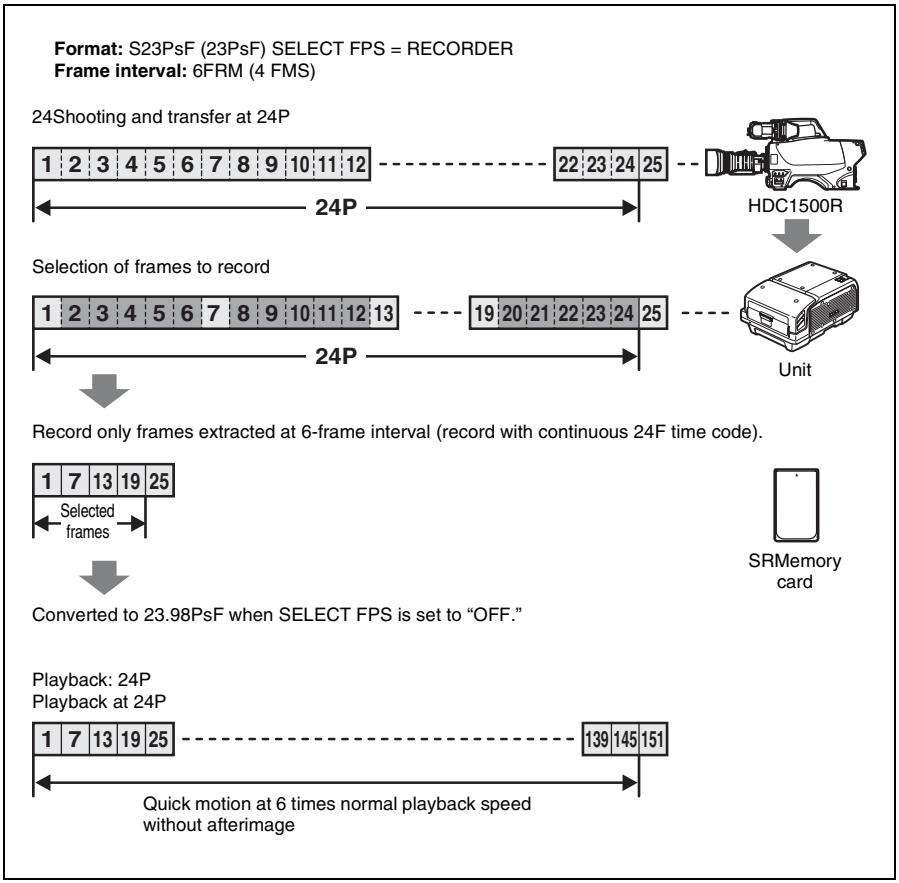
For a 4:4:4 system: 1 to 32 FRM (frames)

Tip

This function can be used for an HDC1500R or other camera with a BNC connection.

Relation between the number of frames shot and frame interval (Basic concept of Interval Frame)

To obtain the desired slow or quick motion effects using the Interval Frame function, you need to set the appropriate frame interval in accordance with the number of frames shot.
For example, when you shoot using a camera of 24P format (24 FPS [system frequency of 24 frames]) and you set the frame interval to 6FRM, a signal is extracted and recorded every 6 frames (4 frames in 1 second) of a signal of 24 frames from the camera. When the signals are played back at 24PsF, a quick motion effect of 6 times normal playback speed is obtained.



Using the Interval Frame function

Note

There may be limitations on the formats that are available depending on the number of coaxial cables used.

For details, see "Formats available for Interval Frame shooting" (page 62).

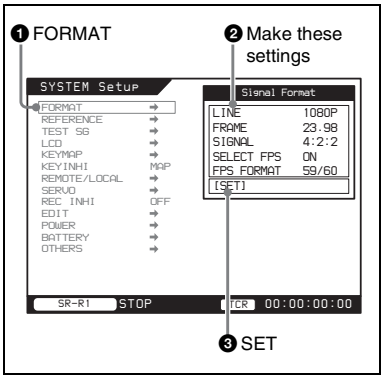
1 **Connect the unit and camera.** ***(page 19)***

2 **Make the system settings.**

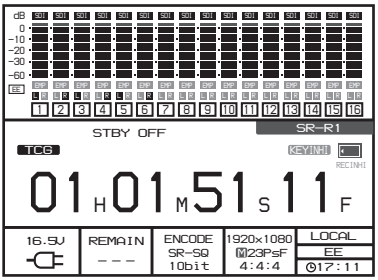
Select the target frame frequency (24, 25, or 30PsF) and then select the recording format (4:2:2 or 4:4:4) and picture quality/encoding format.

Setting example: When setting the target frame frequency to 24PsF (23.98PsF) and the recording format and picture quality to 4:2:4.

Display the SYSTEM Setup menu and then ❶ select and confirm "FORMAT" →❷ set the format to match the system format of the camera as shown below →❸ move the cursor to and confirm [SET].



The format of the unit is switched, and "S59P(23PsF)" is displayed on the display (for about 30 seconds).



The "S" in S59P indicates that SR Motion is enabled (SELECT FPS is set to "VTR," and the Interval Frame function is used), and the "59P" indicates that FPS FORMAT is set to 59.94P. The "(23PsF)" indicates that the target frame frequency is set to 23.98PsF.

To make the time code continuous between recording files

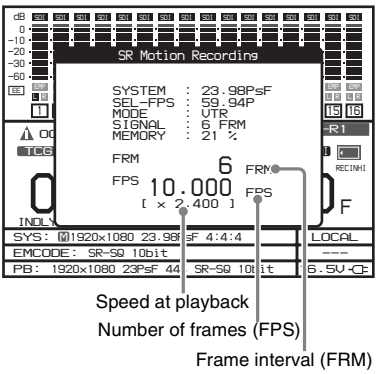
Make the following settings in the TC Setup menu. *(see page 37)*

RUN MODE: R RUN (Rec Run)

TCG MODE: PRST (Preset)

3 **Set the frame interval (FRM).**

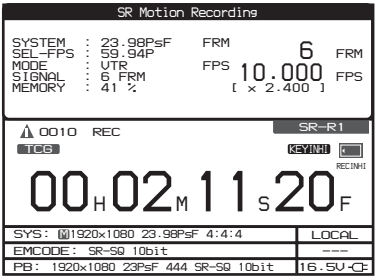
① Return to the Home screen and then press the SELECT/ENTER dial while holding down the FUNC button.
A popup window displays the current frame interval (FRM), number of frames (FPS), and playback speed.



Tip

If the state in which no operation is performed continues for 3 seconds, the previous screen is redisplayed. If the SELECT/ENTER dial is pressed while holding down the FUNC button and then the

SELECT/ENTER dial is pressed again while holding down the FUNC button, the next screen will be displayed and will remained displayed even if the state in which no operation is performed continues for at least 3 seconds.



② Rotate the SELECT/ENTER dial or ADJUST dial to select the value of FRM and then confirm the selection. The values of FPS and playback speed are displayed in accordance with the value of FRM.

Note

With the Interval Frame function, the number of frames cannot be set in 1-FPS increments. For example, when you shoot using a camera of 60P format at 1FRM intervals, the number of frames is 60 FPS. However, since the next interval that can be set is 2 FRM, the number of frames becomes 30 FPS.

4 Start shooting.

① Set the number of frames to be shot by the camera (FPS value).
② Start recording.
If necessary, you can change the FPS value by rotating the SELECT/ENTER dial.
③ Stop recording.

5 Review.

① To play back with the target frame frequency at 23.98PsF, set Select FPS to “OFF” in the SYSTEM > FORMAT menu.
② Press the SET button to switch the formats of the unit and F23/F35.
③ Load the recording file from the file list and press the PLAY button to start playback.

You can check the slow or quick motion shooting effect at the target frame frequency of 23.98PsF. The time code advances from 0 to 23 frames per second. You can also perform simple playback without checking the motion effects. *(see page 56)*

Formats available for Interval Frame shooting

When Select FPS is RECORDER

When the Select FPS setting is other than “RECORDER,” the formats available are the same as *“When Select FPS is on” (page 57)* of *“Formats available for Select FPS shooting.”*

When Select FPS is off

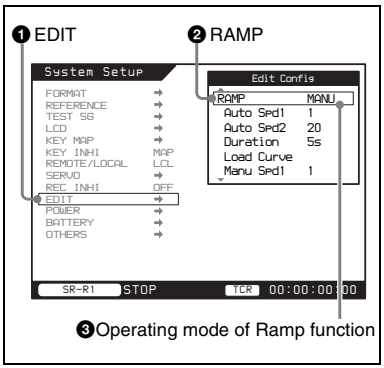
For other than the Select FPS setting, the formats available are the same as *“When Select FPS is off” (page 58)* of *“Formats available for Select FPS shooting.”*

Using the Ramp function

The Ramp function allows you to achieve speed variations by changing the frame interval during Interval Frame recording.

There are two Ramp modes: manual mode, in which you specify upper and lower limits and manually vary the speed within that range, and auto mode, in which you specify start and end frames and a duration, and allow the unit to vary the speed automatically according to preset rules.

1 Display the SYSTEM Setup menu and then ❶ select and confirm "EDIT" → ❷ select and confirm "RAMP" →❸ select and confirm the operating mode of the Ramp function.



Auto (Linear): Varies the frame interval (FRM) linearly.

Auto (Inverse): Varies the inverse of the frame interval (fps) linearly.

Auto (Even): Varies the frame interval so that the number of frames recorded for each interval is equal.

Auto (User): Varies the frame interval along an arbitrary curve.

Manual: Varies the frame interval manually within the range of preset upper and lower limits.

Off: Varies the frame interval manually within an arbitrary range.

2 Set the values required for the selected operating mode.

If you selected "Auto (Linear)," "Auto (Inverse)," or "Auto (Even)," see the next section, "To vary the frame interval automatically."

If you selected "Auto (User)," see "To vary the frame interval along an arbitrary curve" (page 64).

If you selected "Manual" or "Off," see "To vary the frame interval manually" (page 65).

To vary the frame interval automatically

Operating mode: Auto (Linear), Auto (Inverse), Auto (Even)

1 Rotate the ADJUST knob or SELECT/ENTER dial to set the following items.

Auto Spd1: The frame interval at the ramp start point, or the frame interval at the ramp end point (FRM)

Auto Spd2: The frame interval at the ramp start point, or the frame interval at the ramp end point (FRM)
(This is the frame interval at the end point when the frame interval at the start point was set with "Auto Spd1," and the frame interval at the start point when the frame interval at the end point was set with "Auto Spd1.")

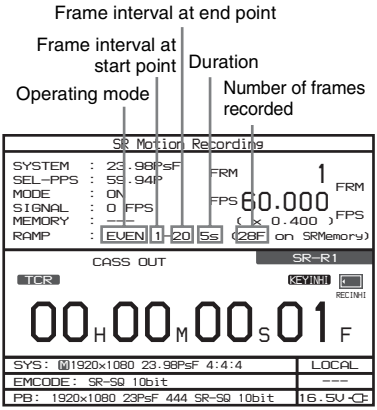
Duration: The time (seconds) from the start to end of the ramp.

2 Press the HOME button to return to the HOME screen.

3 Press the SELECT/ENTER dial twice while holding down the FUNC button.

A screen like the following appears to allow you to check the settings.

Example: When "Auto (Even)" is selected



4 Press the SELECT/ENTER dial while holding down the FUNC button.
Varying of the frame interval starts.
When the frame interval changes to that of the end point, the values of the ramp start point and the ramp end point are exchanged.

To stop varying of the frame interval
Press the SELECT/ENTER dial again while holding down the FUNC button.
This also causes the values of the ramp start point and the ramp end point to be exchanged.

To vary the frame interval along an arbitrary curve

Note

A file in which an arbitrary curve has been input needs to be prepared in advance.

For details, see "To create a curve file" (page 64).

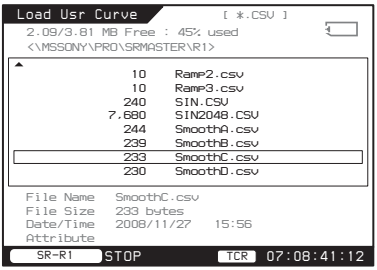
Operating mode: Auto (User)

1 Copy the curve file to a "Memory Stick" and then insert the "Memory Stick" into the slot.

For details on "Memory Stick"operation, see "About "Memory Stick" Media" (page 99).

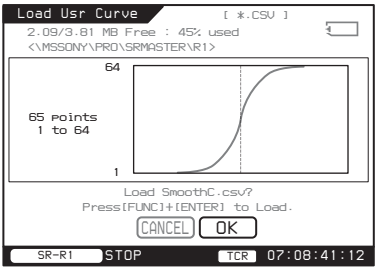
2 Select and confirm "Load Curve."
The curve file saved to the "Memory Stick" appears.

3 Select and confirm the file.



A screen for checking the curve of the selected file appears.

4 Press the SELECT/ENTER dial while holding down the FUNC button.
The selected file is loaded.

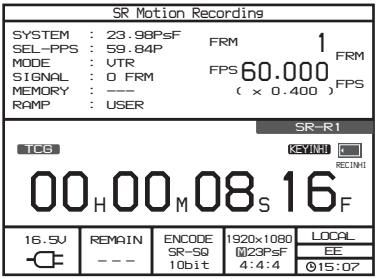


To change the file
Rotate the SELECT/ENTER dial to select "CANCEL" and then press the dial.

5 Select "Duration" and then rotate the ADJUST knob or the SELECT/ENTER dial to set the time (seconds) from the start to the end of the ramp.

6 Return to the HOME screen.

7 Press the SELECT/ENTER dial twice while holding down the FUNC button.
A screen like the following appears to allow you to check the settings.



8 Press the SELECT/ENTER dial while holding down the FUNC button.
Varying of the frame interval along the selected curve starts.

To create a curve file

Create a curve file on a computer.

1 Insert a "Memory Stick" in the slot of the computer.

For details on "Memory Stick"operation, see "About "Memory Stick" Media" (page 99).

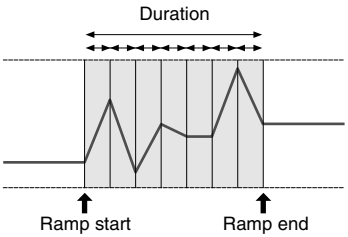
2 Use a text editor to create a file as described below and then save it to the "Memory Stick" as a CSV file (extension: .csv).

Enter at least two number of frames shot values. Enter each value on its own line.

Description example:

10
50
6
30
24
24
60
30

A curve like the following is generated.



To vary the frame interval manually

If you want to set upper and lower limits for the frame interval, set the values manually.

Operating mode: Manual

1 Rotate the ADJUST knob or SELECT/ENTER dial to set "Manu Spd1" and "Manu Spd2."

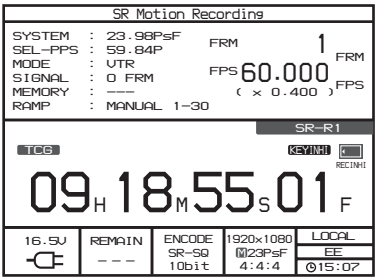
Manu Spd1: The upper or lower limit of the frame interval (FRM)

Manu Spd2: The upper or lower limit of the frame interval (FRM)
(This is the lower limit when the upper limit was set with Manu Spd1, and the upper limit when the lower limit was set with Manu Spd1.)

2 Return to the HOME screen.

3 Press the SELECT/ENTER dial twice while holding down the FUNC button.

A screen like the following appears to allow you to check the settings.



4 Press the SELECT/ENTER dial while holding down the FUNC button.

5 Rotate the ADJUST knob or SELECT/ENTER dial to vary the frame interval.

To temporarily remove the varying upper and lower limits

Press the SELECT/ENTER dial again while holding down the FUNC button.

Monitor LUT Function

The Monitor LUT (Look Up Table) function is available if you are using S-Log or another gamma curve at the shooting site. You can use a LUT file to convert the shooting data to 4:2:2 monitor output for viewing on a monitor with normal ITUBT709 gamma (only when shooting in the RGB 4:4:4 format).

Note

Keep in mind that the LUT function of the SR-R1 applies to the main output.

For details about S-Log and gamma curves, refer to the F23/F35 /SRW-9000/SRW-9000PL/PMW-F3 Operation Manual.

LUT files

LUT files are loaded from a "Memory Stick" (/MSSONY/PRO/SRMASTER/R1/LUT) into the LUT banks (BANK0 to BANK3) of this unit. Up to four LUT files can be loaded. Once loaded into a bank, LUT files are retained also when the unit is powered off. To apply a LUT file, select the bank where it is stored.

Tip

The extension for LUT files used on this unit is ".lut".Change the extension to ".lut" if it is different.

For information on the format of LUT files that can be loaded, see "Format of LUT files that can be loaded" (page 68).

Use the dedicated software CvpFileEditorTM [1] to create LUT files. For details about CvpFileEditor, refer to the F23/F35 Operation Manual.

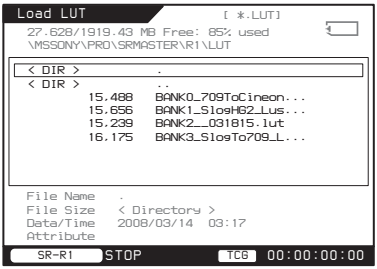
1) CvpFileEditor is a trademark of Sony Corporation.

To load a LUT file into a bank

Proceed as follows to load a LUT file from a "Memory Stick" into one of the banks of this unit.

1 Insert a "Memory Stick" containing the LUT file into the "Memory Stick" slot.

2 In the VIDEO Setup menu, select LUT > LUT MODE. → Select the bank in which to store the LUT file. Then hold down the FUNC button while pressing the SELECT/ENTER dial.



The LUT LOAD menu appears, showing a list of LUT files on the "Memory Stick."

3 Select a LUT file.

The simple I/O curve diagram of the selected LUT file is shown.

4 Move the cursor to OK and press the dial.

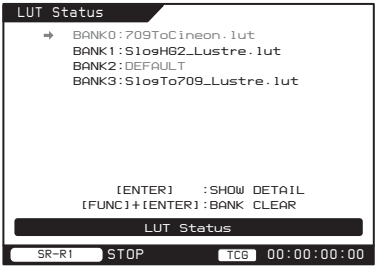
The selected LUT file is loaded into the current bank.

To check LUT files in the banks

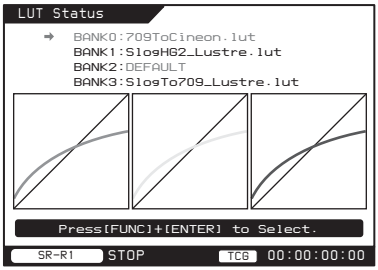
You can check LUT files in the banks and delete unneeded LUT files from the banks.

1 Access the VIDEO Setup menu and select LUT > LUT STATUS.

The selected bank is displayed in yellow.



2 Press the SELECT/ENTER dial.
The simple I/O curve diagram of the LUT file in the selected bank is shown.



To select another LUT file

Rotate the SELECT/ENTER dial to select another bank, and then hold down the FUNC button while pressing the SELECT/ENTER dial.

To delete unneeded LUT files

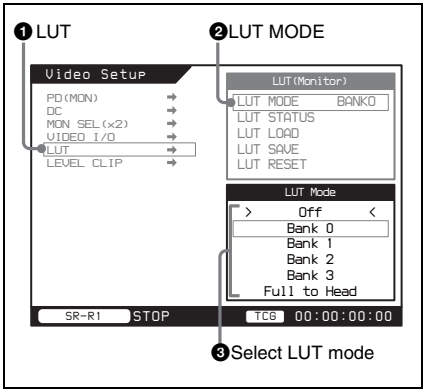
1 Select the bank containing the LUT file to delete. Then hold down the FUNC button while pressing the SELECT/ENTER dial.
The selected bank is displayed in yellow.

2 Hold down the FUNC button while pressing the SELECT/ENTER dial.
The LUT file is deleted.

You can also delete the LUT files in all banks in a single operation. For information on how to do this, see "To delete all LUT files from all banks" (page 68).

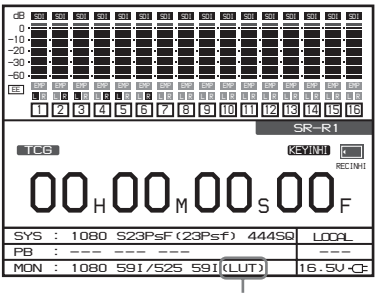
To perform LUT conversion of monitor output

Access the VIDEO Setup menu, and ❶ Select and accept LUT →❷ Select and accept LUT MODE →❸ Select and accept LUT mode.



BANK0 [Bank 0]: Select LUT file in bank 0.
BANK1 to BANK3 [Bank 1 to Bank 3]: Select LUT file in bank 1, bank 2, or bank 3.
F⟶H [Full to Head]: Instead of applying a LUT file, generate and display standard video levels from 64 (0% black) to 940 (100% white) steps for signals that exceed the HD video level range (10-bit signal levels, 4 to 1019 steps).

Video converted on the basis of the selected LUT is output.
During LUT conversion for monitor output, "(LUT)" appears after the monitor output display on the HOME screen.



LUT indication

Saving LUT files to a "Memory Stick"

LUT files stored in banks of the SR-R1 can be saved on a "Memory Stick."

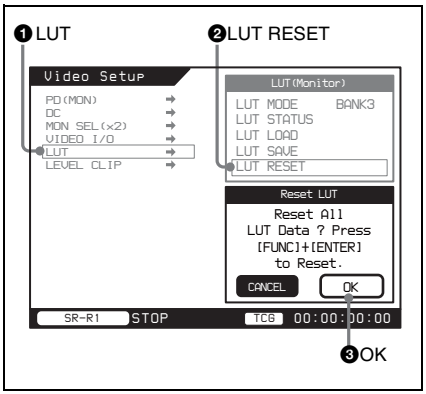
1 Access the VIDEO Setup menu and select LUT > LUT MODE ⟶ bank in which the LUT file to save is stored.

2 Create the following folder on the "Memory Stick" and insert it into the "Memory Stick" slot.
\MSSONY\PRO\SRMASTER\R1\LUT

3 Select LUT > LUT SAVE → move the cursor to [OK], then hold down the FUNC button while pressing the SELECT/ENTER dial.
The LUT file is saved on the "Memory Stick."

To delete all LUT files from all banks

Access the VIDEO Setup menu and ❶ Select and accept LUT →❷ Select and accept LUT RESET →❸ Move the cursor to [OK], then hold down the FUNC button while pressing the SELECT/ENTER dial.



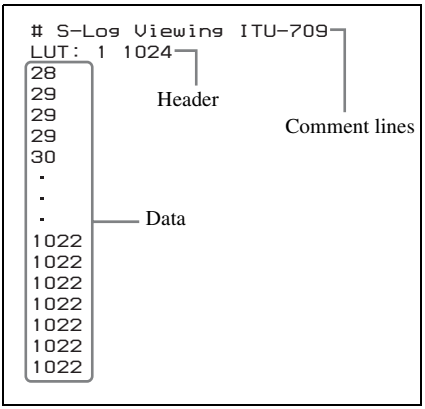
Tip

LUT files on the "Memory Stick" cannot be deleted.

Format of LUT files that can be loaded

LUT files for loading into this unit must be text files configured as shown below.

Example:



Comment lines

Lines beginning with "#" are comment lines.

Header

LUT: 1 1024: Indicates that the file contains one data set for 10-bit table, RGB common, and 0 to 1023.

LUT: 3 1024: Indicates that the file contains three data sets for 10-bit table, RGB common, and 0 to 1023.

Data

Enter 1024 output values in text format, in ascending order. Each value must be on its own line.

28: First data item (output value for input value 0)
29: Second data item (output value for input value 1)
29: Third data item (output value for input value 2)
.
.
1022: 1023rd data item (output value for input value 1022)
1022: 1024th data item (output value for input value 1023)

Note

This unit supports data up to 12 bit. If a LUT file containing 16-bit data is loaded, a simple bit shift is performed and the most significant 12 bits are treated as 12-bit data.

Chapter 5 Menu Details

- The settings displayed in bold are the factory default settings.
- The settings enclosed in [] are the settings as displayed in the settings windows.

TC Setup Menu

Setting Item	Settings
TIMER SEL	Selects the type of time data to display on the display. **TC [Time Code]:** Displays the time code: Displays the time code. UBIT [User Bit]: Displays the user bits. TM1 [TIMER1]: Displays the file playback position in Hours:Minutes:Seconds:Frames format. TM2 [TIMER2]: Displays the playback position in Hours:Minutes:Seconds:Frames format and treats the beginning of the file as 0. • TIMER RESET/PRESET are not available.
TIMER RESET	Resets the internal time code generator, and the time data becomes “00:00:00:00” (time code) or “00 00 00 00” (user bits). **Notes** • The values read by the time code reader cannot be reset. • Time data cannot be reset when the time code generator is locked to external time codes or to values read by the time code reader.
TIMER PRESET	Selects the type of time data to preset to an arbitrary value. TCG TC: Time code generated by the time code generator TCG UBIT: User bits generated by the time code generator TM1: TM1 signal count value
TCR SEL	Selects the type of time code for the internal time code reader to read during playback. **LTC [LTC]:** Reads the LTC. VITC [VITC]: Reads the VITC.
TCG MODE	Selects the time code to which the internal time code generator synchronizes. **PRST [Preset]:** Allows you to use the “TIMER PRESET” setting item to preset the initial value of the time code generated by the internal time code generator. RGN [Regen]: Synchronizes the time generator to the time code value selected in the following item REGENE SOURCE (regenerate).

Setting Item		Settings
REGENE SOURCE		Selects the time code to be synchronized (regenerated) by the internal time code generator. EXT L [External LTC]: Time code input to the TC IN connector **SDI L [SDI LTC]:** LTC time data of video signal input to the HD SDI IN connectors A/B SDI V [SDI VITC]: VITC of video signal input to the HD SDI IN connectors A/B
RUN MODE		Selects the run mode of the internal time code generator. F RUN [Free Run]: Advances the time code while the power is on. **R RUN [Rec Run]:** Advances the time code only during recording.
TCG SET Time code generator settings related to the main time code	DF/NDF (Valid only when the frame frequency of this system is 29.97 Hz.)	Sets the frame count mode. **DF [Drop Frm]:** Drop frame mode NDF [Non Drop Frm]: Non-drop frame mode **Note** This settings is valid only when TCG MODE is set to "PRST."
	UBG SOURCE	Selects the source time code of user bits. TCG [TCG Source]: Same source time code as that of the time code generator INT [Internal]: Time code generated by the time code generator. Arbitrary user bits can be set regardless of the setting of TCG *(see page 37)*.
	12H/24H	Selects the TIMER display mode. 12H [+/–12H]: 12-hour display mode **24H [24H]:** 24-hour display mode **Note** When +/–12H display is selected, the tens digit of the hours value is dropped for values less than 10.
OTHERS Other settings related to the main time code	TC OUT	Selects the time code to output from the TC OUT connector. **AUTO [Auto]:** During playback, the time code read by the internal time code reader. During recording or when in E-E mode, the time code generated by the time code generator. TCG [TCG]: The time code generated by the time code generator. THRU [Through]: Outputs the time code input to the TC IN connector as is.
	RT REC	Sets whether or not to record the real time in user bits. *(For details, see page 38.)* **OFF [Off]:** Does not record. VITC [VITC UB]: Records in the VITC user bit. V+L [VITC UB+LTC UB]: Records in both the VITC and LTC user bits. LTC [LTC UB]: Records in the LTC user bit.
	RT SET	Sets the real time.

Setting Item		Settings
OTHERS Other settings related to the main time code	RT SRC	Selects the method for recording the real time in user bits. **RTC [RTC]:** Records the time set in RT REC and RT SET. (Normally, select this.) DATE [DATE]: Records the time of the internal clock of the unit (the time displayed in the status indication section of the control panel). This does not guarantee that the frame count will advances continuously.
	LTC Delay	Sets the phase difference between the LTC input from the TC IN connector and the time code generator. **0 [NO Delay]:** Same timing +1F [+1F Delay]: The generator is delayed by one frame. +2F [+2F Delay]: The generator is delayed by two frames. +3F [+3F Delay]: The generator is delayed by three frames. +4F [+4F Delay]: The generator is delayed by four frames. +5F [+5F Delay]: The generator is delayed by five frames.
	VITC Delay	Sets the phase difference between the LTC/VITC time code of the video signal input from the HD SDI IN connectors A/B and the time code generator. **0 [NO Delay]:** Same timing +1F [+1F Delay]: The generator is delayed by one frame. +2F [+2F Delay]: The generator is delayed by two frames. +3F [+3F Delay]: The generator is delayed by three frames. +4F [+4F Delay]: The generator is delayed by four frames. +5F [+5F Delay]: The generator is delayed by five frames.
CHAR Settings related to the text information superimposed on the output from the HD SD OUT (MON) connector	ON/OFF	Sets whether or not to output text information. **ON [On]:** Outputs. OFF [Off]: Does not output.
	HPOS	Sets the display position of text information in the horizontal direction. 0 to 15 (**8**)
	VPOS	Sets the display position of text information in the vertical direction. 0 to 23 (**21**)
	TYPE	Selects the character type. W/O [Without BG]: White characters with no background. OUTL [Outline]: White characters with black outlines. TRNS [Translucent]: White characters on a gray screen background. **BG [With BG]**: White characters on a black background
	SIZE	Sets the size of text information. x1 [x1]: Normal **x2 [x2]:** Twice normal size

Setting Item		Settings
CHAR Settings related to the text information superimposed on the output from the HD SD OUT (MON) connector	MODE	Sets the content of text information. **+STAT [Time + Status]:** Time counter display information and status (operation status) information +UB [Time + User Bit]: Time counter display information and user bit data +VITC [Time + VITC]: Time counter display information and VITC TIME [Time Only]: Time counter display information only +TM1 [Time + TM1]: Time counter display information and TM1 counter value +TM2 [Time + TM2]: Time counter display information and TM2 counter value
	WARN	When MODE is set to other than "TIME," selects whether or not warning/error messages flash on the second line. OFF [Off]: Does not display flashing messages. ERR [Error]: Displays only flashing error messages. **W+E [Warn + Error]:** Displays both flashing warning messages and error messages.
	REMAIN	Sets whether or not to display the remaining amount of possible recording time estimated from the current recording settings of the SRMemory card. **OFF [Off]:** Does not display. ON [On]: Displays.
	BATT	Sets whether or not to display the remaining amount of battery power. **OFF [Off]:** Does not display. ON [On]: Displays.

VIDEO Setup Menu

Setting Item		Settings
LUT *For details on LUT file operation, see "Monitor LUT Function" (page 66).*	LUT MODE	Selects whether or not to use LUT, and when LUT is used, selects the bank in which the LUT file is stored. **OFF [Off]:** Does not perform LUT conversion. BANK0 [Bank 0]: Selects the LUT file in bank 0. BANK1 to BANK3 [Bank 1`Bank 3]FSelects the LUT file in any of bank 1, bank 2, and bank 3. F⟶H [Full to Head]: Does not use a LUT file and instead adjusts signals that exceed the HD video level range (10-bit signal levels, 4 to 1,019 steps) to match the standard video levels from 64 (0% black) to 940 (100% white) steps and then displays them. **Note** Keep in mind that LUT conversion is performed in respect to the main output.
	LUT STATUS	Displays a list of the LUT files in the banks. The currently selected file is displayed in yellow. You can select a file and then display a simple I/O curve, and delete unnecessary LUT files from banks.
	LUT LOAD	Loads a LUT file from a "Memory Stick" to a bank.
	LUT SAVE	Saves a LUT file from a bank to a "Memory Stick."
	LUT RESET	Deletes all of the LUT files in Bank0 to Bank3.

AUDIO Setup Menu

Setting Item		Settings
INPUT SEL Selection of input signals	TRACK1	Selects the signal to assign to track 1. **SDI1 [SDI CH1]** to SDI16 [SDI CH16], ANA1 [Analog CH1] to ANA2 [Analog CH2], AUX1 [AUX SDI CH1] to AUX16 [AUX SDI CH16]
	TRACK2	Selects the signal to assign to track 2. Same settings as TRACK1 (**SDI2**)
	TRACK3	Selects the signal to assign to track 3. Same settings as TRACK1 (**SDI3**)
	TRACK4	Selects the signal to assign to track 4. Same settings as TRACK1 (**SDI4**)
	TRACK5	Selects the signal to assign to track 5. Same settings as TRACK1 (**SDI5**)
	TRACK6	Selects the signal to assign to track 6. Same settings as TRACK1 (**SDI6**)
	TRACK7	Selects the signal to assign to track 7. Same settings as TRACK1 (**SDI7**)
	TRACK8	Selects the signal to assign to track 8. Same settings as TRACK1 (**SDI8**)
	TRACK9	Selects the signal to assign to track 9. Same settings as TRACK1 (**SDI9**)
	TRACK10	Selects the signal to assign to track 10. Same settings as TRACK1 (**SDI10**)
	TRACK11	Selects the signal to assign to track 11. Same settings as TRACK1 (**SDI11**)
	TRACK12	Selects the signal to assign to track 12. Same settings as TRACK1 (**SDI12**)
	TRACK13	Selects the signal to assign to track 13. Same settings as TRACK1 (**SDI13**)
	TRACK14	Selects the signal to assign to track 14. Same settings as TRACK1 (**SDI14**)
	TRACK15	Selects the signal to assign to track 15. Same settings as TRACK1 (**SDI15**)
	TRACK16	Selects the signal to assign to track 16. Same settings as TRACK1 (**SDI16**)
	RESET	Restores all TRACK1 to TRACK16 items to their default settings.

Setting Item		Settings
OUTPUT SEL Selection of output signals	CH1	Selects the track to assign to CH1 of SDI output. **TRACK1** to TRACK16
	CH2	Selects the track to assign to CH2 of SDI output. Same settings as CH1 (**TRACK2**)
	CH3	Selects the track to assign to CH3 of SDI output. Same settings as CH1 (**TRACK3**)
	CH4	Selects the track to assign to CH4 of SDI output. Same settings as CH1 (**TRACK4**)
	CH5	Selects the track to assign to CH5 of SDI output. Same settings as CH1 (**TRACK5**)
	CH6	Selects the track to assign to CH6 of SDI output. Same settings as CH1 (**TRACK6**)
	CH7	Selects the track to assign to CH7 of SDI output. Same settings as CH1 (**TRACK7**)
	CH8	Selects the track to assign to CH8 of SDI output. Same settings as CH1 (**TRACK8**)
	CH9	Selects the track to assign to CH9 of SDI output. Same settings as CH1 (**TRACK9**)
	CH10	Selects the track to assign to CH10 of SDI output. Same settings as CH1 (**TRACK10**)
	CH11	Selects the track to assign to CH11 of SDI output. Same settings as CH1 (**TRACK11**)
	CH12	Selects the track to assign to CH12 of SDI output. Same settings as CH1 (**TRACK12**)
	CH13	Selects the track to assign to CH13 of SDI output. Same settings as CH1 (**TRACK13**)
	CH14	Selects the track to assign to CH14 of SDI output. Same settings as CH1 (**TRACK14**)
	CH15	Selects the track to assign to CH15 of SDI output. Same settings as CH1 (**TRACK15**)
	CH16	Selects the track to assign to CH16 of SDI output. Same settings as CH1 (**TRACK16**)
	RESET	Restores all CH1 to CH16 items to their default settings.
PHONE SEL		Selects the audio to output to the EARPHONES jack and MONITOR OUT L and R connectors.
MIX MODE		Selects the method of mixing the digital audio signals output to the EARPHONES jack. ADD [Add]: Simple addition **RMS [RMS]:** Geometric mean AVG [Average]: Simple average
REC LEVEL		Adjusts the recording level *(see page 35)*. (This adjustment is not possible during playback.)
PB LEVEL		Adjusts the playback level *(see page 38)*. (This adjustment is not possible during recording.)

Setting Item		Settings
METER TYPE		Sets the display range of the audio level meters. **PEAK [Full Peak]:** Displays 0 dBFS as the peak value. REF [Full Ref]: Displays the reference level (+4 dBu) as 0 dB. FINE [Fine]: Displays a scale with 0.25 dB steps and -20 dB at the center.
PEAK HOLD		Sets whether or not to use the peak hold function. **ON [On]:** Uses the function. OFF [Off]: Does not use the function.
BEEP (PHONE) Sets the volume of the beep tone.	ALARM	Sets whether or not to output alarm tones. OFF [Off]: Does not output alarm tones. HIGH [High]: Outputs high-level alarm tones. **LOW [Low]:** Outputs low-level alarm tones.
	WARN	Sets whether or not to output warning tones. OFF [Off]: Does not output warning tones. HIGH [High]: Outputs high-level warning tones. **LOW [Low]:** Outputs low-level warning tones.
INPUT DELAY	HD SDI DELAY	Sets whether to delay the HD SDI IN input audio. **[OFF]**: Disables the delay setting. ON: Enables the delay setting (set the length of the delay in the DELAY setting).
	ANALOG DELAY	Sets whether to delay the AUDIO IN input audio. **[OFF]**: Disables the delay setting. ON: Enables the delay setting (set the length of the delay in the DELAY setting).

Setting Item		Settings
INPUT DELAY	AUX IN DELAY	Sets whether to delay the AUX IN input audio. **[OFF]**: Disables the delay setting. ON: Enables the delay setting (set the length of the delay in the DELAY setting).
	DELAY	Sets the phase of the audio signal recorded on the SRMemory card. **0 [NO Delay]:** Does not delay the audio signal (use this when the video signals and audio signals to be input have the same phase). +1F [+1F Delay]: Records the audio signal with a delay of one frame (use this when the video signals of external cameras and other devices are input with a delay of one frame in respect to the audio signals). +2F [+2 Delay]: Records the audio signal with a delay of two frames (use this when the video signals of external cameras and other devices are input with a delay of two frames in respect to the audio signals). +3F [+3 Delay]: Records the audio signal with a delay of three frames (use this when the video signals of external cameras and other devices are input with a delay of three frames in respect to the audio signals). +4F [+4 Delay]: Records the audio signal with a delay of four frames (use this when the video signals of external cameras and other devices are input with a delay of four frames in respect to the audio signals). +5F [+5 Delay]: Records the audio signal with a delay of five frames (use this when the video signals of external cameras and other devices are input with a delay of five frames in respect to the audio signals).

SYSTEM Setup Menu

Setting Item		Settings
FILE LIST	FILE LIST	Displays a list of recording files and allows recording files to be selected and file operations to be performed. *For details, see "FILE LIST Operations" (page 42).*
	SORT	Sorts the files in the FILE LIST screen. **DATE:** Date order NAME: Name order DURATION: Order of file recording length
SIGNAL FORMAT Settings of signal formats	RESOLUTION	Sets the effective pixel count and scanning method. 1280 × 720P [1280 × 720P] 1920 × 1080I [1920 × 1080I] **1920 × 1080P [1920 × 1080PsF/P]**
	FRAME	When SELECT FPS is set to "OFF," sets the operation frame frequency. When SELECT FPS is set to other than "OFF," sets the target frame frequency. **23.98 [23.98]:** Frame frequency of 23.976 Hz 24 [24]: Frame frequency of 24 Hz 25 [25]: Frame frequency of 25 Hz (field frequency of 50 Hz) 29.97 [29.97]: Frame frequency of 29.97 Hz (field frequency of 59.94 Hz) 50 [50]: Frame frequency of 50 Hz 59.94 [59.94]: Frame frequency of 59.94 Hz *For details, see "Using the Select FPS function" (page 55).*
	SIGNAL	Sets the sampling format. 422 [4:2:2]: 4:2:2 (Y/Pb/Pr) **444 [4:4:4]:** 4:4:4 (R/G/B) *For details, see "About Recording/Playback Formats" (page 97).*
	3D MODE	Sets 3D recording. **OFF:** Performs 3D recording OFF: Does not perform 3D recording

Setting Item		Settings
SIGNAL FORMAT Settings of signal formats	SELECT FPS	Selects the operation mode of the Select FPS function. **OFF [Off]**: Does not use the Select FPS function. ON [On]: Enables the Select FPS function and sets the number of frames (FPS) on the camera side. RECORDER [RECORDER]: Enables the Select FPS function and sets the number of frames (FPS) on the unit. *For details on the settings, see "SR Motion" (page 47).*
	FPS FORMAT	Selects the system format for when Select FPS operation. **DEF [Default]:** Uses the factory default setting. 23/24 [23.98/24] 25 [25] 29/30 [29.97/30] 50 [50] 59/60 [59.94/60] *For details on the settings, see "SR Motion" (page 47).*
	ENCODE	Sets the video recording format and recording rate. SR-HQ 12bit, SR-HQ 10bit, **SR-SQ**, SR-Lite, DPX *For details, see "About Recording/Playback Formats" (page 97).*
	HD SDI	Sets the HD SDI IN connectors A/B. **1.5G:** 1.5G SDI 3G: 3G SDI
	SDI OUT	Sets the HD SDI OUT (MON) connectors 1/2. **1.5G:** 1.5G SDI 3G: 3G SDI
TEST SG Settings of test signal output **Note** The VIDEO and AUDIO settings are both reset to "OFF" (factory default setting) when the power is turned off.	VIDEO	Selects the test signal to generate with the internal video signal generator. **OFF [Off]:** Does not generate a test signal. CB [Color Bar]: Color bar signal SMPTE [SMPTE Color Bar]: SMPTE color bar signal RP219 [RP-219 Color Bar]: RP-219 color bar signal BLK [Black]: Black signal
	AUDIO	Selects the test signal to generate with the internal audio signal generator. **OFF [Off]:** Does not generate a test signal. 1KHz [1KHz Sine]: 1 kHz sine wave NONE [Silence]: No sound

Setting Item		Settings
LCD Settings of display backlight	LIGHT OFF	Sets whether or not to turn the backlight off after a set time. **DIS [Disable]:** Does not turn the backlight off. 5sec [5sec]: Turns the backlight off after 5 seconds. 10sec [10sec]: Turns the backlight off after 10 seconds. 30sec [30sec]: Turns the backlight off after 30 seconds. 1min [1min]: Turns the backlight off after 1 minute. 3min [3min]: Turns the backlight off after 3 minutes. 5min [5min]: Turns the backlight off after 5 minutes.
	BRIGHT	Sets the backlight brightness. 0 to 31 (**20**)
	SAVER	Sets whether or not to use the screensaver after a set time. **DIS [Disable]:** Does not use the screensaver. 1min [1min]: Starts the screensaver after 1 minute. 3min [3min]: Starts the screensaver after 3 minutes. 5min [5min]: Starts the screensaver after 5 minutes. 10min [10min]: Starts the screensaver after 10 minutes. 20min [20min]: Starts the screensaver after 20 minutes. 30min [30min]: Starts the screensaver after 30 minutes. 1hour [1hour]: Starts the screensaver after 1 hour.
	SAVER MSG	Sets the text information for the screensaver.
KEYMAP Settings of keymap	EJECT EJECT button function	**DIS [Disable]:** Disables the button function. ENA [Enable]: Enables the button function.
	STOP STOP button function	
	PLAY PLAY button function	
	REC REC button function	
	REW REW button function	
	FFWD FFWD button function	
	PAUSE PAUSE button function	
KEY INHI Settings to inhibit button operation		ALL [ALL]: Locks all. **MAP [MAP]:** Locks only the buttons that are set to "Disable" in the KEYMAP settings.
REMOTE/LOCAL		Selects the operation method of the unit. **LCL [Local]:** Enables the unit to be operated from the control panel. RMT[Remote]: Enables the unit to be operated from an external device connected to the REMOTE IN connector. In this case, the recording and playback operation buttons on the control panel and EJECT button of the unit are in accordance with the KEY MAP settings.
REC INHI Settings of recording inhibit mode		**OFF [Off]:** Does not prohibit recording. ON [On]: Prohibits recording.

Setting Item			Settings
EDIT	TIMER REC		Sets the operation mode of the Timer Rec function. *For details on the settings, see "Timer Rec" (page 44).* **OFF [Off]:** Does not use the Timer Rec function. MANU [Manual]: Selects Manual Timer Rec. AUTO [Auto]: Selects Auto Timer Rec.
		Manu Frm	When "MANU" is selected for TIMER REC, selects the number of frames to record at one time . 1 to 10 Frame (**1 Frame**)
		Auto Frm	When "AUTO" is selected for TIMER REC, selects the number of frames to record at one time. 1 to 10 Frame (**1 Frame**)
		Interval	When "AUTO" is selected for TIMER REC, sets the interval (hours/minutes/seconds) for recording.
	CACHE REC		Sets the operation mode of the Cache Rec function. *For details on the settings, see "Cache Rec" (page 46).* **OFF [Off]:** Does not use the Cache Rec function. 100% [100%]: Uses the Cache Rec function.
	RAMP		When "RECORDER" is selected for SELECT FPS, selects the operation mode of the ramp function. *For details on the settings, see "Using the Ramp Function" (page 63, 66).* **OFF [Off]:** Mode for manually varying the frame interval (FRM) within an arbitrary range. LINE [Auto(Linear)]: Mode for linearly varying the frame interval. INV [Auto(Inverse)]: Mode for linearly varying the inverse of the frame interval (fps). EVEN [Auto(Even)]: Mode for varying the frame interval so that the number of frames recorded for each interval is equal. USER [Auto(User)]: Mode for varying the frame interval along an arbitrary curve. MANU [Manual]: Mode for manually varying the frame interval within the range of preset upper and lower limits.

Setting Item			Settings
EDIT	RAMP	Auto Spd1	When “LINE,” INV,” or “EVEN” is selected for RAMP, sets the number of frames to shoot or frame interval at the ramp start point or the number of frames to shoot or frame interval at the ramp end point (**1FRM/FPS**).
		Auto Spd2	When “LINE,” INV,” or “EVEN” is selected for RAMP, sets the number of frames to shoot or frame interval at the ramp start point or the number of frames to shoot or frame interval at the ramp end point (**1FRM/FPS**). (This is the number of frames to shoot or frame interval at the end point when the number of frames to shoot at the start point was set with “Auto Spd1,” and the frame interval at the start point when the number of frames to shoot at the end point was set with “Auto Spd1.”)
		Duration	When “LINE,” “INV,” “EVEN,” or “USER” is selected for RAMP, sets the time (seconds) from the start to end of the ramp. 0 to 30s (**0s**)
		Load Curve	When “USER” is selected for RAMP, displays a list of files on the “Memory Stick” in which an arbitrary curve has been input.
		Manu Spd1	When “MANU” is selected for RAMP, sets the upper limit or lower limit for the number of frames to shoot or frame interval (**1FRM/FPS**).
		Manu Spd2	When “MANU” is selected for RAMP, sets the upper limit or lower limit for the number of frames to shoot or frame interval (**1FRM/FPS**). (This is the lower limit when the upper limit was set with Manu Spd1, and the upper limit when the lower limit was set with Manu Spd1.)
POWER Settings to reduce power consumption by limiting output signals or restricting use of output connectors	MODE		Selects the output signal mode when playback is stopped or the unit is in standby mode. **EE [EE]:** Mode for selecting the EE signals (input signals) as the video, audio, and time code. Select this when you want to record or reduce power consumption (normally, select this). PB [PB]: Mode for selecting the playback signals as the video, audio, and time code. Select this only when controlling the unit as a player (using it as a dedicated player) from an external device via the REMOTE IN connector.
	SAVE MODE		**NORM [Normal]:** Disables power save mode. SAVE [Save]: Enables power save mode. After 30 seconds elapse since standby off, the unit transitions to the power save mode in which only the E-E images input from the SDI IN inputs are output (Power Save Mode 1), and after another 30 seconds elapse, the unit transitions to the power save mode in which all output is turned off (Power Save Mode 2). When one of the recording or playback control buttons is pressed, the power save mode is canceled.

Setting Item			Settings
POWER Settings to reduce power consumption by limiting output signals or restricting use of output connectors	SDI OUT		Selects whether to output signals from the HD SDI OUT connectors A/B. **ON [On]:** Outputs signals. OFF [Off]: Does not output signals.
	LED		Controls the POWER indicator. **ON [On]:** Lit normally LOW [Low]: Dimly lit OFF [Off]: Not lit
	TALLY		Controls the tally lamp. **ON [On]:** Lit normally LOW [Low]: Dimly lit OFF [Off]: Not lit
	STBY OFF		Sets the time to transfer from playback stop mode to standby off mode. 1sec [1sec]: After 1 second 5sec [5sec]: After 5 seconds 10sec [10sec]: After 10 seconds 20sec [20sec]: After 20 seconds **30sec [30sec]:** After 30 seconds 40sec [40sec]: After 40 seconds 50sec [50sec]: After 50 seconds 1min [1min]: After 1 minute 2min [2min]: After 2 minutes 3min [3min]: After 3 minutes 4min [4min]: After 4 minutes 5min [5min]: After 5 minutes 6min [6min]: After 6 minutes 7min [7min]: After 7 minutes 8min [8min]: After 8 minutes 30min [30min]: After 30 minutes
BATTERY Settings related to the remaining battery power indication	DCIN TYPE		Selects the type of battery to be connected to the DC IN connector. **AC [AC Adapter]:** AC adapter Li-ion [Li-ion Battery]: Lithium ion battery BP-GL [BP-GL Battery]: BP-GL95 OTH1 [Other 1] OTH2 [Other 2]
		Near END (DCIN)	Sets the threshold voltage at which to show a near-end (almost exhausted)/warning indication for the battery selected for the previous item “DCIN TYPE.” 11.0 to 15.0 (**11.9 V**)
		END (DCIN)	Sets the threshold voltage at which to show an end (exhausted)/warning indication for the battery selected for the item “DCIN TYPE.” 11.0 to 12.0 (**11.0 V**)
SETUP For details, see *“Storing and Recalling Setup Data” (page 29).*	COMMENT		Edits comments when saving the setup menu.
	SAVE		Saves setup information to a "Memory Stick."
	LOAD		Loads setup information from a "Memory Stick."
	RESET		Restores the setup information to the factory default settings.

Setting Item		Settings
OTHERS	SOFT VERSION	Displays the version of each software installed on the unit.
	HOURS METER	Display various count values using the digital hours meter (total since the start of use of the unit, or total during a certain period). SYSTEM: System operation time LID LOCK: Number of lock plunger operations
	FORMAT LIST	Displays a list of the supported formats and the currently selected format. You can also change the format.
	OPTION LIST	Displays a list of installed options.
	SET DATE	Sets the date and time of the unit. *For details, see "Date Settings" (page 31).*
	META DATA	Sets the three metadata recording lines. *For details, see "Recording Line Settings for Input Metadata" (page 32).*

Appendix

Maintenance and Inspections

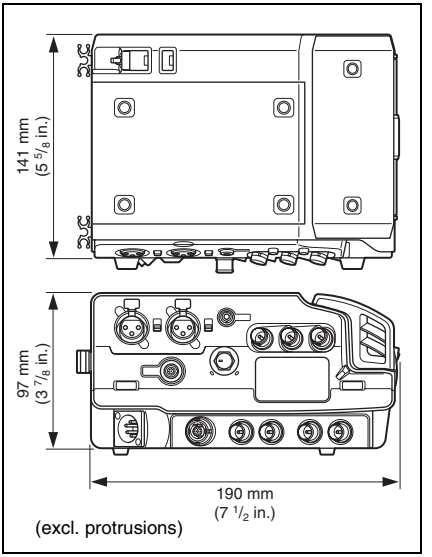
Note About the Power Supply Terminal

The power supply terminal of this unit (the connector for the AC adapter) is a consumable part.
Power may not be supplied to the unit properly if the pins of the battery terminal are bent or deformed by shock or vibrations, or if they become corroded due to prolonged outdoor use. Periodic inspections are recommended to keep the unit working properly and to prolong its usable lifetime. Contact a Sony service or sales representative for more information about inspections.

Specifications

General

Recording format	MPEG4 SStP format/DPX
Power supply	11 to 17 V DC
Power consumption	30 W (422 23.98PsF SR-Lite recording)
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)
Storage temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Operating relative humidity	10% to 95% (no condensation)
Mass	1.9 kg (4 lb. 2.9 oz.) (excl. SRMemory card and control panel)



Video

422 format

Sampling frequency
- Y: 74.25 MHz
- Cb/Cr: 37.125 MHz

Quantization
- 10 bits

Compression
- MPEG4 SStP/DPX (non-compressed)

444 format

Sampling frequency
- RGB: 74.25 MHz

Quantization
- 10 bit, 12 bit

Compression
- MPEG4 SStP/DPX (non-compressed)

Audio

Digital audio signal format (channels 1 to 16)

Sampling frequency
- 48 kHz (synchronized with video)

Quantization
- 24 bits

Headroom
- 20 dB

Analog audio input

A/D quantization
- 24 bits

Reference input level
- LINE: +4 dBu
- MIC: –34 dBV

Frequency response
- 20 Hz to 20 kHz +0.5 dB/–1.0 dB (at reference level)

Dynamic range
- More than 100 dB (1 kHz)

Distortion
- Less than 0.05% (1 kHz, at reference level)

Crosstalk
- Less than –80 dB (1 kHz, between any two channels)

Input/Output Connectors

Input connectors

AUDIO INPUT CH-1, CH-2
- 3-pin XLR, female (2), LINE/MIC/MIC +48 V

TC IN
- BNC (1)
- 0.5 Vp-p to 18 Vp-p, 10 kΩ
- SMPTE linear time code compliant

AUX IN
- BNC (1)
- HD SDI embedded audio (1.485 Gbps) (SMPTE-292M compliant)

HD SDI IN A, B
- BNC (2)
- HD SDI (1.485 Gbps) (SMPTE-292M/372M/BTA-S004B compliant)
- 3G SDI (2.97 Gbps) (SMPTE-424M Level B)

Output connectors

TC OUT
- BNC (1)
- 1.0 Vp-p (1 kΩ)
- SMPTE linear time code compliant

HD SDI OUT (MON) 1, 2
- BNC (2)
- HD SDI (1.485 Gbps) (SMPTE-292M/372M/BTA-S004B compliant)
- 3G SDI (2.97 Gbps) (SMPTE-424M Level B)

EARPHONES
- stereo mini jack (1)

Input/Output Connectors

REMOTE

LEMO 14-pin, female (1)

CTRL PANEL

Control panel connector (1)

Supplied Accessories

Control panel (1)
BKP spacer (1)
CP bracket (1)
Control panel cable (0.6 m) (1)
REMOTE cable (1)
Operation Manual (this document) (1)

Optional Accessories

HQ Record Option (planned for release)

SRK-R311

AC adapter

AC-DN10/DN2B

Battery Pack

BP-GL95A

Battery Recharger

BC-L160/L70

Battery Adapter

BKP-L551

Docking plate

SRK-R302 (planned for release)

SRMemory card

SR-256S15/256S55 (256 GB)

SR-512S25/512S55 (512 GB)

SR-1TS25 (1 TB)

Design and specifications are subject to change without notice.

Notes

- Always make a test recording, and verify that it was recorded successfully.
  SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF FAILURE OF THIS UNIT OR ITS RECORDING MEDIA, EXTERNAL STORAGE SYSTEMS OR ANY OTHER MEDIA OR STORAGE SYSTEMS TO RECORD CONTENT OF ANY TYPE.
- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.

Error Messages and Warning Messages

About Error Messages

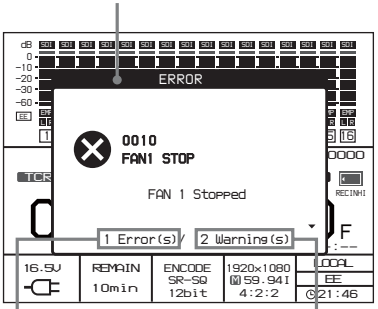
When the system stops operating incorrectly because of an internal error, a warning tone sounds and a popup window appears in the display of the control panel with an error message.

Tip

Only one message is displayed at one time, even if multiple errors occur. The number of current errors appears at the bottom of the popup window. Be sure to check the messages for all errors.

Example:

Popup window displaying error message “0010: FAN1 STOP” (fan stopped)



Indicates that there is one current error message.

Indicates that there are two current warnings *(see page 89)*.

To view the other messages, rotate the SELECT/ENTER dial on the control panel.

When an error message appears

Eliminate the cause of the error, and power the system off and on again.
If the same error message appears again when the system is powered on, contact a Sony service representative.

To close the error message popup window

Press the HOME button or the BACK button. The error code is shown in the operation status and warnings section of the HOME screen *(see page 13)* until the cause of the error is removed.

Error messages

Refer to the Maintenance Manual for more detailed information about the content of error messages, and about errors not listed here.

Code	Message	Meaning
0010	FAN STOP	Cooling fan stop was detected.
0014	DC VOLTAGE DOWN	Drop in DC voltage was detected.
005C	TIMER REC NG	Timer recording error was detected.
0061	EXIST ERROR	The SRMemory card became unable to be detected.
0064	DATA WRITE ERROR	An error was detected when transferring data to the SRMemory card.
0066	INTERFACE ERROR 1	Communication with the SRMemory card failed.This SRMemory card cannot be used as is.If the same error is displayed even after the card is reinserted, the unit or SRMemory card may have malfunctioned.
0067	INTERFACE ERROR 2	An error was generated in the interface section when an attempt was made to insert the SRMemory card.If the same error is displayed even after the card is reinserted, the unit or SRMemory card may have malfunctioned.
0070	UNMOUNT ERROR1	An error was generated in the interface section when unmounting/ejecting the SRMemory card.The ejected SRMemory card may not be able to be used.The salvage function may need to be executed.

Code	Message	Meaning
0071	UNMOUNT ERROR2	An error was generated in the memory section when unmounting/ejecting the SRMemory card. The ejected SRMemory card may not be able to be used. The salvage function may need to be executed.
0074	MOUNT ERROR1	An error was generated in the interface section when mounting the SRMemory card. This SRMemory card cannot be used as is. Execute the salvage function or use another SRMemory card.
0075	MOUNT ERROR2	An error was generated in the memory section when mounting the SRMemory card. This SRMemory card cannot be used as is. Execute the salvage function or use another SRMemory card.

About Warning Messages

If one of the conditions described in the *"Warning messages" (page 89)* is detected, a warning message code appears in the operation status and warnings section of the HOME screen *(see page 13)*.

To check the content of warning messages

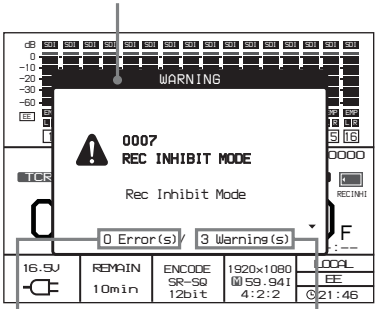
Press the SELECT/ENTER dial on the control panel. A popup window appears to display messages for the current warnings.

Tip

Only one message is displayed at one time, even if multiple errors and warnings occur. The number of current errors and warnings appears at the bottom of the popup window. Be sure to check the messages for all errors and warnings.

Example:

Popup window displaying warning message "0007: REC INHIBIT MODE" (recording inhibit mode)



Indicates that there are no current error messages *(see page 88)*.

Indicates that there are three current warnings.

To view the other messages, rotate the SELECT/ENTER dial on the control panel.

When a warning message appears

Take any action that may be needed to eliminate the cause of the warning.

Warning messages

Code	Message	Meaning
0007	REC INHIBIT MODE	Recording is not possible due to a menu setting. Or the recording format is not supported.
0009	TEMPERATURE LOW	The internal temperature of the set is lower than the specified level.
000C	CP MISSING	Communication with the control panel was interrupted.
000E	TEMPERATURE HIGH	The internal temperature of the set has risen.
0030	NO SDI INPUT	There is no valid input to the HD SDI IN connector.
0032	INVALID SDI DATA	The SDI input signal data is invalid.
0034	SDI A-B PHASE NG	Signals input to HD SDI IN A and B connectors are out of phase.

Code	Message	Meaning
0036	SDI FMT MISMATCH	Format of signals input to HD SDI IN A and B connectors does not match system setting.
0037	SDI I/P MISMATCH	Scan format (interlaced, PsF, progressive) of signals input to HD SDI IN A and B connectors does not match system setting.
0038	NO AUX SDI INPUT	There is no input to the AUX IN connector, or the correct signal is not being input.
0040	MEDIA CONDITION1 DOUBTFUL	The number of errors occurring during reading and writing with the SRMemory card has become large.
0041	MEDIA CONDITION2 DOUBTFUL	The number of times for repeated use of memory in the SRMemory card has become large.
0042	MEDIA CONDITION3 DOUBTFUL	The area for substituting defective memory in the SRMemory card has become small.
0044	MEDIA CONDITION1 BAD	The number of errors occurring during reading and writing with the SRMemory card has become extremely large.
0045	MEDIA CONDITION2 BAD	The number of times for repeated use of the memory in the SRMemory card has become extremely large.
0046	MEDIA CONDITION3 BAD	There is no area for substituting defective memory in the SRMemory card. This SRMemory card cannot be used for recording purposes.
004F	AUDIO DSP UNLOCK	The audio signal processing circuits are not active.
0067	SRMEMORY REC INHI	The SRMemory card is write-protected.

Warning System

When an error is detected immediately after the system is powered on, or during operation, the display and the tally indicator *(see page 10)* provide a warning indication.
In addition, warning and alarm tones are output from the EARPHONES jack.

Note

Warning tones are only output if the BEEP (PHONE) > WARN *(see page 76)* setting in the AUDIO Setup menu is HIGH or LOW.

Warning tones ●)))))))))))))) **: 1 beeps/second** ●))) ●))) ●))) ●))) **: 4 beeps/second** ●))))))))))))))))))))))))))) **: Continuous tone**	**Alarm tones** ●)))))))))))))) **: 1 beeps/second** ●))) ●))) ●))) ●))) **: 4 beeps/second** ●))))))))))))))))))))))))))) **: Continuous tone**	**Tally indicator** ☀ **: 1 flashes/second** ☀ **: 4 flashes/second**	**Description**	**SR-R1 operation**	**Countermeasures**
—	—	—	An error as indicated by warning message has occurred. (Excluding "Servo lock lost during recording" below)	Operation continues.	Check the warning message, and resolve the condition, referring to the "Description" column in *"Warning messages" (page 89)*.
●))) ●))) ●))) ●))) [a]	—	☀ [b]	Servo lock lost during recording	Recording continues, but results may invalid.	Check the input signal.
●))))))))))))))))))))))))))))	—	☀	An error occurred.	Operation continues or stops, depending on the type of error.	Check the error message, and resolve the condition, referring to the "Description" column in *"Warning messages" (page 89)*. Alternatively, contact a Sony service representative.
—	●))))))))))))))) [a]	☀	SRMemory card is almost full.	Operation continues.	Prepare to replace SRMemory card.
—	●))))))))))))))))))))))))))))	☀	SRMemory card is full.	Recording, playback, or search forward stops.	Replace SRMemory Card or delete unneeded files.
—	●))))))))))))))) [a]	☀	Battery is almost empty. [c]	Operation continues.	Replace battery.
—	●))))))))))))))))))))))))))))	☀	Battery is empty. [c]	Operation stops.	Replace battery.

a) Output only during recording.

b) Flashes during recording.

c) You can use the battery level/external power indication on the display to check the state of the battery. (*see page 14*, 22)

About SRK-R311

//Pending//

Troubleshooting

Salvaging SRMemory cards for which recording did not complete properly

After recording to an SRMemory card is complete, press the EJECT button to safely remove the card, or turn off the unit with the power switch. Should the power cord be disconnected while recording is in progress, the recording operation will not complete properly. In such cases, the file system will not be updated and as a result, video and audio data recorded in real time will not be recognized as files and the content of recorded files will be damaged.
The unit incorporates a salvage function that is designed to minimize data loss for such SRMemory cards. The salvage function restores files based on factors such as the maker information recorded on the SRMemory card. The salvaging process can take as little as a few seconds or up to 60 minutes, depending on the conditions at the time recording was interrupted.

Notes

- The salvage function is intended to salvage as much recorded material as possible in the event of an unforeseen accident, but it does not guarantee 100% restoration of data.
- This function will not restore data recorded immediately preceding the recording interruption. The amount of data lost will be as follows.
- **SR-Lite mode:** Approx. 8 seconds of data
- **SR-SQ mode:** Approx. 4 seconds of data
- Whenever you insert an SRMemory card that requires salvaging or turn on the unit with such a card inserted, a popup message asking whether you want to perform salvaging will appear.
- Recording and playback are disabled for SRMemory cards that require salvaging.
- When you format an SRMemory card, the memory card will be ready for use immediately. However, any previously recorded data will be lost.

To restore files via salvaging

1. **Insert the SRMemory card for which recording did not complete properly into the SRMemory card slot.**

A warning massage and a message asking whether you want to perform salvaging or formatting appears on the display.

Notes

- If REC inhibit is set to “ON” in the SYSTEM menu, set it to “OFF.”
- After you start the salvaging process, the process cannot be stopped. Be sure that you have enough time to wait for the process to complete before starting.

2. **Select and confirm “Salvage.”**

   The salvaging process starts, and the “Please wait” message appears.
   The message closes automatically when the process is complete.

If files are not restored after salvaging

If an SRMemory card cannot be restored even after salvaging, you can format the SRMemory card to make the card usable again.

1. **Insert the SRMemory card that could not be salvaged.**

   A warning massage and a message asking whether you want to perform salvaging or formatting appears on the display.

2. **Select and confirm “Format.”**

   The formatting process starts, and the “Please wait” message appears.
   The message closes automatically when the process is complete.

Video

Problem	Cause	Countermeasures
Picture is gray.	No input signal is being supplied to HD SDI IN connector A.	Supply the input signal for the selected system format to HD SDI IN connector A.
	No input signal is being supplied to HD SDI IN connector B(when using 4:4:4 format).	To enable use of the 4:4:4 format, input a signal with the correct format to HD SDI IN connectors A and B.
	The phase difference between HD SDI IN A and HD SDI IN B is too large.	If the length of the cable connected to HD SDI IN A and HD SDI IN B differs significantly, the signal phase shift may be too large, preventing normal signal reception. Ensure that the two cables are of similar length.
	The format of the input signal to the HD SDI IN connector A or B is different from the system format.	The picture is gray when an input signal format is different from the system signal format. Input a signal in the correct format.
	The input signal is unstable.	The picture changes to gray when the input signal is unstable or interrupted.
Picture color is wrong.	In 4:4:4 mode, the HD SDI A and HD SDI B connections are reversed.	Connect the proper signals to the HD SDI IN A and HD SDI IN B connectors.
	In 4:4:4 mode, two 4:2:2 pictures are being input to the HD SDI IN A and HD SDI IN B connectors.	Set the input device to the 4:4:4 format.
	In 4:2:2 mode, a 4:4:4 picture is input.	Input a 4:2:2 format signal.
• Picture break-up. • "AUDIO PLL UNLOCK" is displayed.	The input signal is unstable.	Supply a correct input signal.
	The monitor does not support the format.	Some older monitors support only the 59.94/60 frequencies. The 720-50p format is only supported by some of the newest monitors. Use a monitor with specifications supporting the format.
	The input signal is not matched to the system frequency.	Input a signal with 1.000/1.000 and 1.000/1.001 that match the system.
	The frequency exceeds the monitor scanning frequency.	If the monitor is a BVM-F24, 25PsF and 29.97PsF cannot be displayed with ×3 scanning, resulting in picture breakup. Use ×2 or ×1 scanning. For 59.94i and 50i, use ASD scanning.
• Unnatural movement (ghosting). • "PB FREQ MISMATCH" is displayed.	Wrong interlace and PsF selection.	Set the input signal format so as to match the system setting.
Movement stops, or is jerky.	Monitor is not operating properly.	Check the monitor settings. Try turning it off and on again.
The video appears jagged, or 1 line is missing at the top and bottom of the screen.	In the SMPTE 372M 4:2:2 60p standard, the active lines of digital field 2 are different between Link A and Link B (Link A: line 584 to 1123, Link B: line 583 to 1122).	Ensure that the source signal conforms to the SMPTE 372M 4:2:2 60p standard.
Want to output a test signal.	This can be done with a menu setting.	Under SYSTEM > TEST SG > VIDEO, select CB or BLK.

Problem	Cause	Countermeasures
Test signal is not output.	Test signals are turned off when the unit is powered off and on.	Select the test signal again.
Select FPS recording does not work.	The camera does not support the Select FPS function.	Select a camera that supports the Select FPS function before setting SELECT FPS to ON.
	The Select FPS function is not enabled on either the camera or the SR-R1.	Enable the Select FPS function on both the camera and the SR-R1.

Audio

Problem	Cause	Countermeasures
• No sound. • "AUDIO PLL UNLOCK" is displayed.	Level meter indication is flashing, and input is disabled.	Set up input device correctly to supply an SDI or AUX audio signal.
	Mode was switched.	To prevent noise and damage to audio monitor equipment, audio is muted off when switching modes.
	Non Audio setting.	No audio is output when Non Audio mode is selected. A white box in the meter display indicates "Non Audio."
	Volume is turned down.	When there is no sound from the headphones, even though the meters are moving, check whether the volume is set to an appropriate level.
• Noise is present. • "PB FREQ MISMATCH" is displayed.	Playback at wrong frequency.	Noise occurs when the playback frequency is different from the recorded frequency, because of the difference in the number of audio samples. Switch the playback format to match the recorded frequency.
	SYSTEM > FORMAT > SELECT FPS is set to ON or VTR.	Audio is not correctly recorded during SR Motion recording.
"NO AUX SDI INPUT" is displayed.	No HD SDI signal is being supplied on the AUX IN connector.	Input the correct HD SDI signal.
No analog audio input.	Electret condenser microphone is not powered.	Change the setting to +48 V ON (except for internal battery powered microphone).
Want to output a test signal.	This can be done with a menu setting.	Set SYSTEM > TEST SG > AUDIO to 1kHz.
Test signal is not output.	Test signals are turned off when the unit is powered off and on.	Select the test signal again.

Other

Problem	Cause	Countermeasures
Power does not come on.	Insufficient power supply capacity.	Use AC-DN2B/DN10, or connect to a power source rated for at least 150 W, using a short, heavy-gauge cable.
	The EXT DC SELECT switch is set to EXT while using the unit with battery power.	Set the EXT DC SELECT switch to AUTO.
Power goes off.	The current limiter of the power source was activated.	Adjust the limiter, taking into take account the inrush current when powering on and when switching modes.

Problem	Cause	Countermeasures
Battery is drained quickly.	Battery condition has deteriorated.	Replace the battery with a fresh one.
	The battery type and voltage settings do not match.	Under SYSTEM > BATTERY, select the correct settings for battery type, NEAR END, and END voltage.
	Earphone volume setting and/or display brightness setting are higher than necessary.	Reduce the settings.
	Unneeded equipment is connected.	Disconnect the unneeded equipment. It is also possible to disable the output of signals that are not required. *For details, see POWER (page 82) in the SYSTEM Setup menu explanation.*
Cannot record.	SRMemory card is write-protected.	Return the write protect switch to the original position.
Power to other equipment does not come on.	Power switch of other equipment is not on.	Turn power switch of other equipment on.
Low voltage.	The power cable is too long, causing a voltage drop.	If the power cable is too long or does not have a sufficient current capacity rating, cable impedance can cause a voltage drop. Replace the cable with a shorter one.
Battery alarms appear frequently.	If battery alarms appear even when the input voltage is sufficient, the END and NEAR END settings for the DC power supply are wrong.	Change the END and NEAR END settings to suitable voltage settings for the DC power supply.

About Recording/Playback Formats

Number of lines	Signal	Scanning system	System frame frequency	Encoding DPX (non-compressed)	SR-HQ 12bit	SR-HQ 10bit	SR-SQ 10bit	SR-Lite 10bit
1280 × 720	422	Progressive	50	●	—	—	☐	☐
			59	●	—	—	☐	☐
1920 × 1080	422	Interlaced	25	●	—	—	☐	☐
			29.97	●	—	—	☐	☐
		PsF	23.98	●	—	—	☐	☐
			24	●	—	—	☐	☐
			25	●	—	—	☐	☐
			29.97	●	—	—	☐	☐
		Progressive	50	●	—	—	○	○
			59.94	●	—	—	○	○
1920 × 1080	444	Interlaced	25	●	*	*	☐	—
			29.97	●	*	*	☐	—
		PsF	23.98	●	*	*	☐	—
			24	●	*	*	☐	—
			25	●	*	*	☐	—
			29.97	●	*	*	☐	—
		Progressive	50	●	●	●	○	—
			59.94	●	●	●	○	—

○ : Recording and playback are possible

— : Not supported

☐ : 3D recording and playback are possible

● : SRK-R311 (HQ Recorder Key for SR-R1) is required, recording and playback are possible.

* : SRK-R311 (HQ Recorder Key for SR-R1) is required, 3D recording and playback are possible.

List of Camera Combinations and Available Functions

Camera model		PMW-F3		F23/F35/SRW-9000/SRW-9000PL		HDC1500R		HDW-F900R and other PsF cameras
RGB 4:4:4 YCbCr 4:2:2		4:4:4	4:2:2	4:4:4	4:2:2	4:4:4[1)]	4:2:2	4:2:2
Number of frames shot		1 to 30	17 to 60	1 to 30	1 to 60	1 to 30	1 to 60	1 to 30
Effects	Frame capture (Interval Frame mode)	○	○	○	○	○	○	○
	Smooth motion (Select FPS mode)	○	○	—	—	—	—	—

1) Available by special order. (For details, contact your Sony representative.)j

About “Memory Stick” Media

The unit supports the storing and recalling of the following data on a “Memory Stick.”
- SETUP data *(page 29)*
- LUT function data *(page 66)*

Supported “Memory Stick” types

The SR-R1 supports “Memory Stick” media up to 128 MB capacity, and “Memory Stick PRO” media up to 8 GB capacity.

Note on data read/write speed

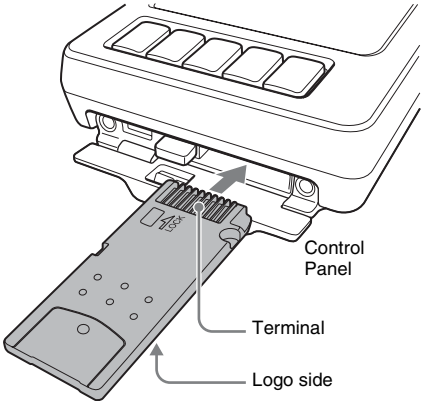
Data read/write speed may vary depending on the combination of the “Memory Stick” and “Memory Stick”-compliant product you use.

Note

“Memory Stick Duo” media and “Memory Stick PRO Duo” media cannot be used as is in the SR-R1. In order to use these “Memory Stick” types, a separately available “Memory Stick Duo” adapter is required. If a “Memory Stick Duo” or “Memory Stick PRO Duo” is forced into the unit without an adapter, it may not be possible to retrieve the media.

Inserting a “Memory Stick”

Insert the “Memory Stick” into “Memory Stick” slot on the control panel with the logo side facing down and the terminal facing up. Push the “Memory Stick” all the way in.



“Memory Stick”

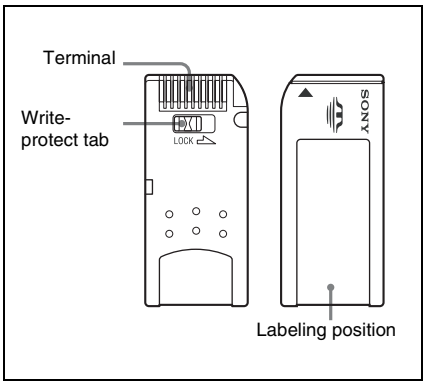
Note

Double-check that the “Memory Stick” is oriented correctly before pushing it in. If you feel a resistance, the “Memory Stick” may be upside down, or reversed. Do not force the “Memory Stick” in.

Removing the “Memory Stick”

Verify that the eject button indicator is not lit or flashing, and press the button.

About “Memory Stick”



- When you set the “Memory Stick” erasure prevention switch to “LOCK,” data cannot be recorded, edited, or erased.
- Data may be damaged if:
  - You remove the “Memory Stick” or turn off the unit while it is reading or writing data.

- You use the “Memory Stick” in a location subject to the effects of static electricity or electric noise.

• We recommend that you make a backup copy of important data that you record on the “Memory Stick.”

When the “Memory Stick” access indicator is lit or flashing

Data is being read from or written to the “Memory Stick” at this time. Do not shake the product or subject it to shock. Also do not turn power off or remove the “Memory Stick.” Doing so may damage the data.

Precautions

• Do not attach anything other than the supplied label to the “Memory Stick” labeling position.
• Attach the label so that it does not stick out beyond the labeling position.
• Carry and store the “Memory Stick” in its case.
• Do not touch the connector of the “Memory Stick” with anything, including your finger or metallic objects.
• Do not strike, bend, or drop the “Memory Stick.”
• Do not disassemble or modify the “Memory Stick.”
• Do not allow the “Memory Stick” to get wet.
• Do not use or store the “Memory Stick” in a location that is:
  - Extremely hot, such as in a car parked in the sun
  - Under direct sunlight
  - Very humid or subject to corrosive substances
• To prevent data loss, make backups of data frequently. In no event will Sony be liable for any loss of data.
• Unauthorized recording may be contrary to the provisions of copyright law. When material such as images or data that is subject to copyright is recorded on a “Memory Stick”, the material may only be used in accordance with copyright laws.

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