SONY

HD OPTICAL FIBER ADAPTOR UNIT

HDFA-200

MEMORY STICK ™

OPERATION MANUAL English

1st Edition (Revised 1)

4260395020

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.

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.

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.

For the customers in the U.S.A.
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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.

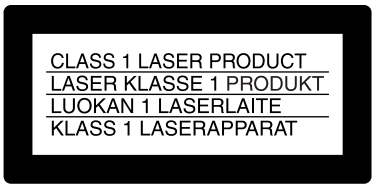
For the customers in Canada
This Class A digital apparatus complies with Canadian ICES-003.

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

For the customers in Europe
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).

Pour les clients en Europe
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).

Für Kunden in Europa
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).



This HD Optical Fiber Adapter Unit is classified as a CLASS 1 LASER PRODUCT.

Dieser HD Optical Fiber Adapter Unit ist als LASERPRODUKT DER KLASSE 1 eingestuft.

Tämä HD Optical Fiber Adapter Unit on luokiteltu 1. LUOKAN LASERTUOTTEEKSI.PRODUCT.

Den här HD Optical Fiber Adapter Unit klassificeras som en LASERPRODUKT AV KLASS 1.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION
The use of optical instruments with this product will increase eye hazard.

Laser Diode Properties
Wave length: 1310 ±40 nm
Emission duration: Pulse Modulation
Laser output power: 141^{+37}_{-29} μW
IEC60825-1(2007) & IEC60825-1(2014)

Daten der Laserdiode
Wellenlänge: 1310 ±40 nm
Emissionsdauer: Pulsmodulation
Laser-Ausgangsleistung: 141^{+37}_{-29} μW
IEC60825-1(2007) & IEC60825-1(2014)

Egenskaber for laserdiode
Bølgelængde: 1310 ±40 nm
Strålingsvarighed: Pulse Modulation
Afgivet lasereffekt: 141^{+37}_{-29} μW
IEC60825-1(2007) & IEC60825-1(2014)

Laserdiod - Egenskaper
Våglängd:1310 ±40 nm
Strålningens varaktighet:Pulsmodulering
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Egenskaper for laserdiode
Bølgelengde: 1310 ±40 nm
Strålingsvarighet: Pulsmodulasjon
Utgangseffekt for laser:141^{+37}_{-29} μW
IEC60825-1(2007) & IEC60825-1(2014)

For the customers in Taiwan only

廢電池請回收

关于废弃产品的处理

请不要将废弃的产品与一般生活垃圾一同弃置。
正确处置废弃的产品有助于避免对环境和人类健康造成潜在的负面影响。
具体的处理方法请遵循当地的规章制度。

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Compatible Devices

This unit can be connected to the following devices (as of August 2010). When connecting, be sure to update the PLD and software to the latest version.
For details on updating, consult your Sony representative.

Product type	Model name
3D multicamera	HDC-P1
	HDC1600R/1500R/ 1400R/1550R/ 1450R
	HDC1600/1500/ 1550
Camera control unit	HDCU1000[a)]/1500[b)]
RGB 4:4:4 transmission (2D) camera	F35
Master Setup Unit	MSU-1000/1500
Remote Control Panel	RCP-1000[c)]/1001[c)]/ 1500/1501/1530

a) An HKCU-HB10 3G Fiber Transmission Unit must be installed.
b) An HKCU-HB15 3G Fiber Transmission Unit must be installed.
c) Not used in 3D operation.

About this manual

This manual provides the information required for using this unit with the devices mentioned above. If another device is to be connected, refer to the operation manual supplied with the device to be connected.

Overview

The HDFA-200 is an intelligent transmission interface unit with high bit-rate transmission technology. The unit enables 3D multicamera system operation if you connect two cameras (left and right, hereafter referred to as L/R) such as HDC-P1 HD Multi Purpose Cameras to a Camera Control Unit via this unit, using a single optical fiber cable. This also enables transmission of RGB 4:4:4 signals if you connect an F35 Digital Cinematography Camera and creates a multicamera system with 35-mm imagers.

Features

Improving operation efficiency by connecting a single fiber cable

High bit-rate digital optical transmission technology enables you to send signals from two cameras to a CCU, using a single optical fiber cable, and also to supply power and genlock signals to the two cameras.

Power of up to 13 A (maximum 14 V) can be supplied from this unit in total, but available power is limited depending on the devices to be connected or the length of an optical fiber cable. For details, see "Notes on Power Supplied from This Unit" (page 14).

3D multicamera operation

The unit is equipped with 2-channel audio input, intercom, and trunk data (general-purpose control signal via a CCU and HDFA-200) transmission functions that enable system operation of a 3D multicamera system equivalent to that of an existing 2D camera system.

Improving operation with a single remote control panel

The L/R cameras can simultaneously be controlled with a remote control panel connected to a CCU. It is also possible to perform offset control of the left and right cameras, which allows 3D system camera operation with high flexibility.

3D monitoring with a viewfinder

On the screen of a viewfinder connected to the VF connector on this unit, picture from the left or a right camera only, or pictures from both the L/R cameras can be monitored. For L/R camera pictures, split, mix, or Y-difference display function required for rig adjustment for camera setup can be switched.

Linking with an MPE-200 with lens meta data

If a lens supporting serial data transmission is used, the focal length of the lens, zoom position, and iris data are overlaid on an HD-SDI signal output from the CCU as meta data, which supports linking operation with an MPE-200 Multi Image Processor.

Remote operation of a 3D rig[1)] using a trunk data line

General-purpose control signals of up to 150 kbaud can be transmitted as trunk data. The RS-232C or RS-422 signals

such as 3D-rig control signals can be transmitted between the CCU and HDFA-200.
1) Rig: A device to mount two cameras

Improving half-mirror rig operation, using an H/V inverting function

A function to compensate for picture inversion on a half-mirror rig (L/R/H inversion/V inversion/HV inversion, etc.) is implemented. Signal delay caused by inversion is also compensated for.

Simplifying system configuration for HDC-P1 operation

Use of UNIVERSAL SYNC simplifies camera connection, because a CCA-5 camera control signal cable is not required for connecting an HDC-P1 HD Multi Purpose Camera and the unit.

Lightweight and compact design enabling a flexible operation

Mass of only about 3.8 kg (lighter than a portable camera) and multiple general-purpose screw holes allow easy mounting to a rig, tripod adaptor or clamp.

System Configuration

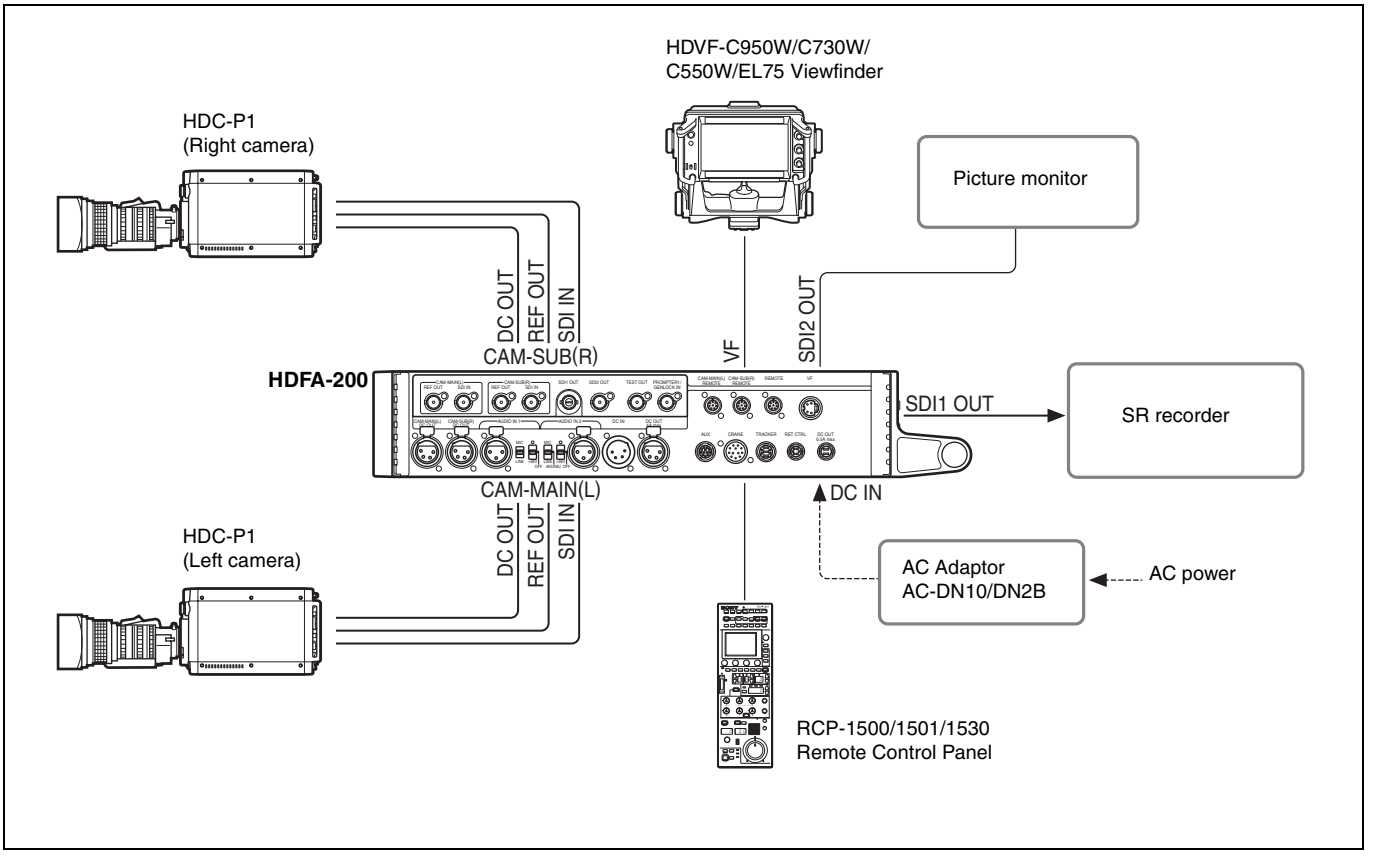
System configurations using peripherals and related devices are shown in the figures below.
The PLD and software versions installed with the devices to be used should be updated.

Notes

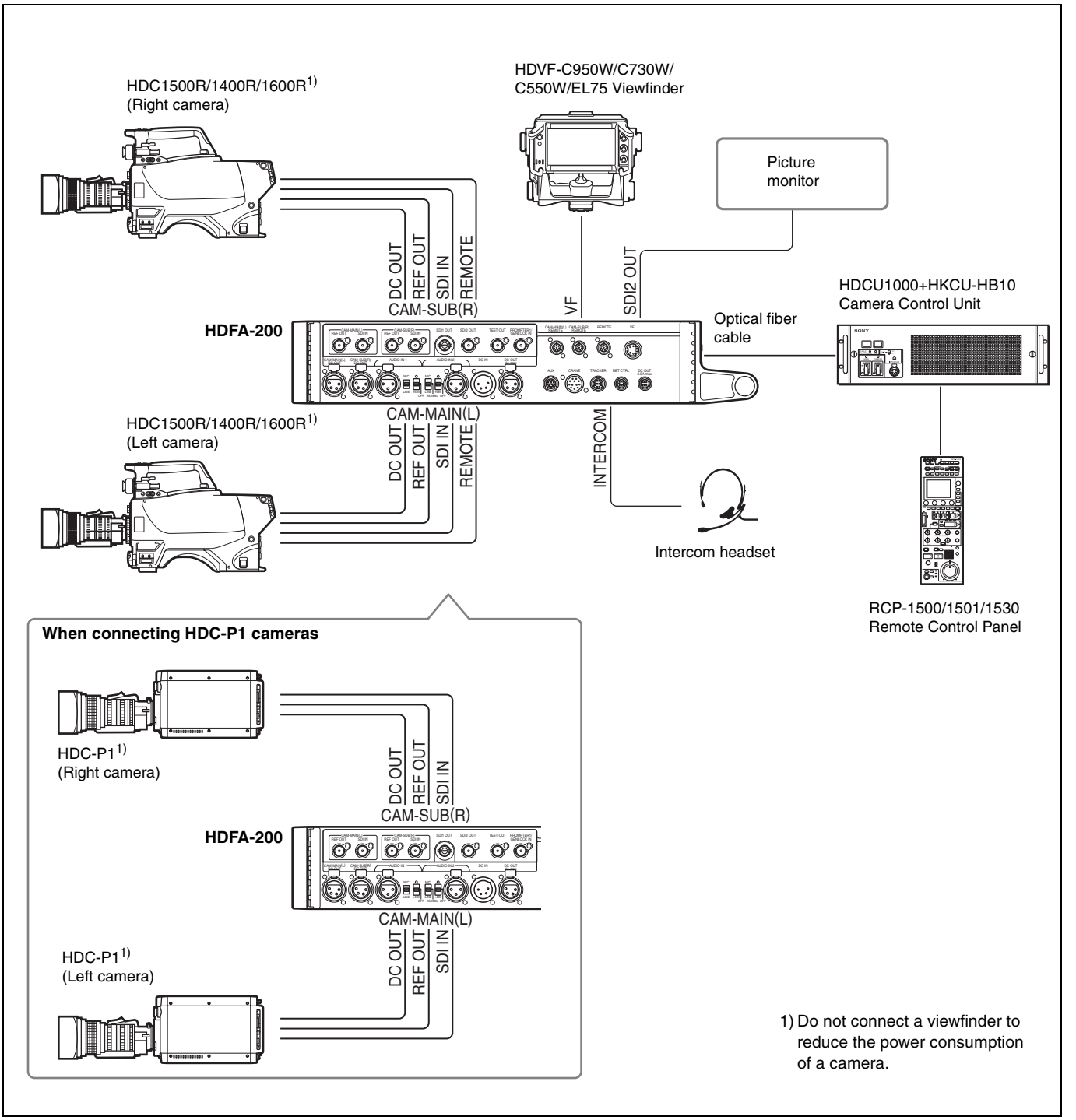
- Make the adjustments required for shooting with the cameras before connection.
- For 3D operation, be sure to use two cameras of the same model.
- In 3D mode, the left camera functions as the main camera. Adjusted values registered for the left camera take priority. The right camera follows the left camera other than for offset setting items.
- Production of some of the peripherals and related devices shown in the figures might be discontinued. For advice on choosing devices, please contact your Sony dealer or a Sony sales representative.
- Power capacity supplied from the DC OUT connectors is limited.
  For details, see "Notes on Power Supplied from This Unit" (page 14).

3D multicamera system operation example

Standalone operation example (two cameras)



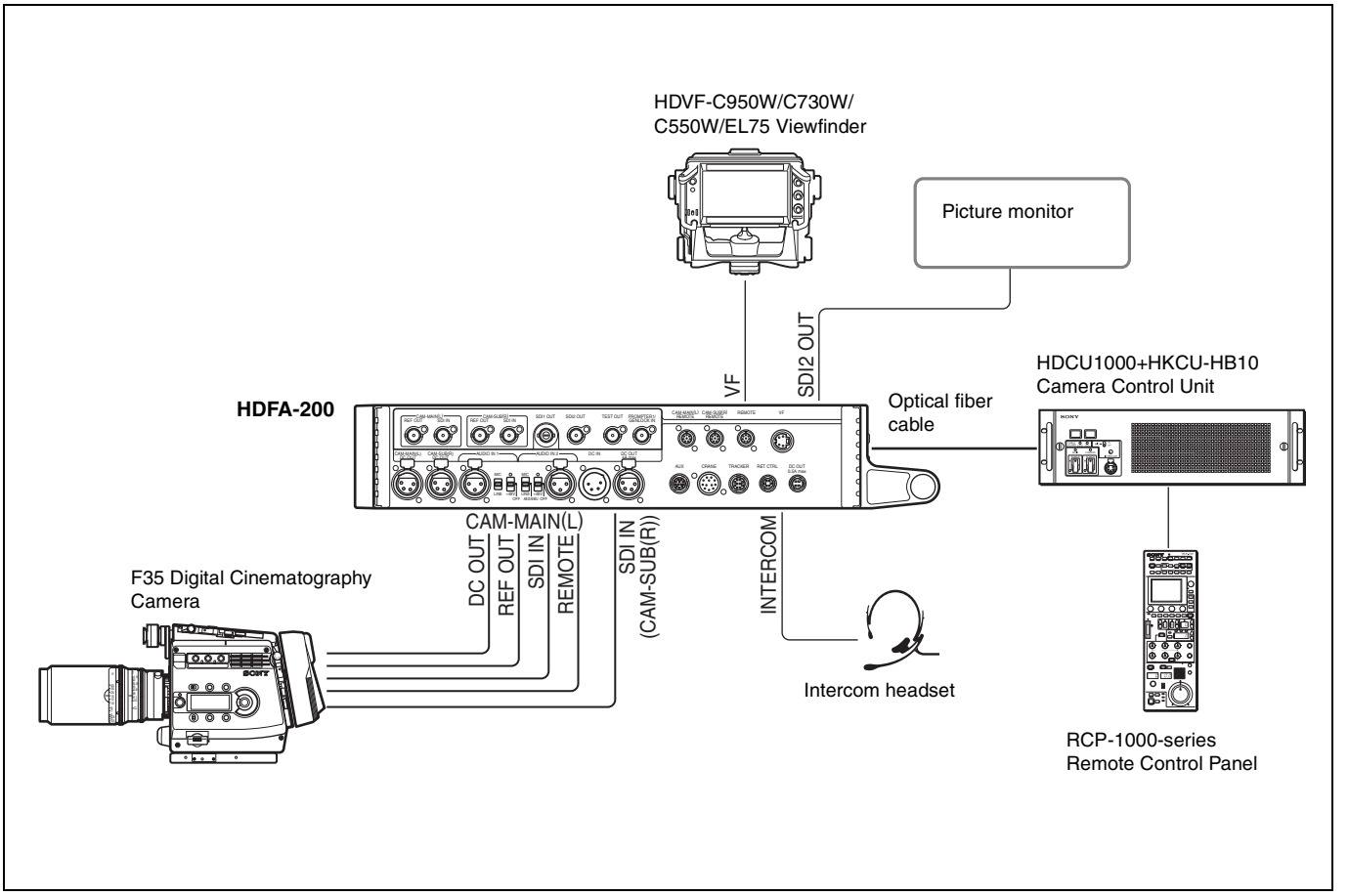
System operation example (two cameras with a Camera Control Unit)



1) Do not connect a viewfinder to reduce the power consumption of a camera.

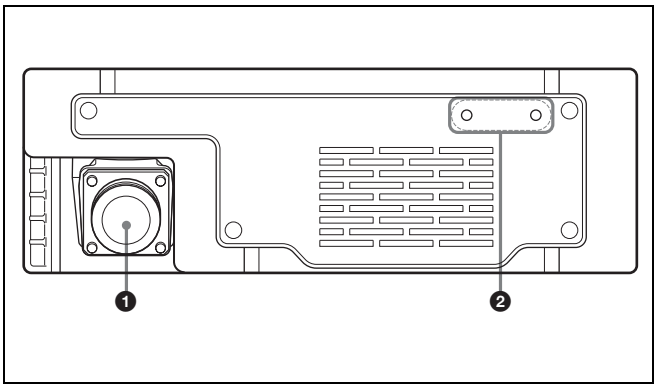
System operation example with a Digital Cinematography Camera F35

An F35 with a Camera Control Unit



Parts Identification

Front panel



1 Camera Control Unit (CCU) connector (optical fiber connector)

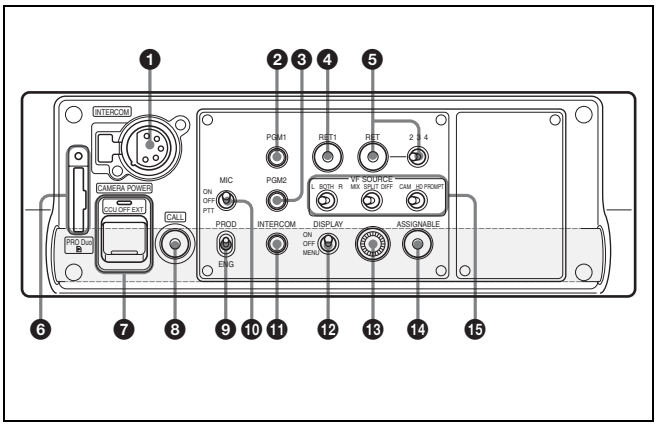
Connect an HDCU1000 Camera Control Unit with an HKCU-HB10 3G Fiber Transmission Unit mounted or HDCU1500 with an HKCU-HB15 mounted, using an optical fiber cable.
A single optical fiber cable enables transmission of power, control signals, video signals, and audio signals between two cameras and an HDCU1000/1500.

2 Cable clamp belt attachment screw holes

Attach the cable clamp belt (supplied) to secure the optical fiber cable.

Rear panel

SY type: Models for JN and SY



1 INTERCOM connector (XLR 5-pin)

Connect an XLR 5-pin headset for input and output of intercom audio signals.
The connector can be used for communication over the engineer line when the camera is in standby status.

2 PGM1 (Program 1) knob

To adjust the audio listening level of program 1.

3 PGM2 (Program 2) knob

To adjust the audio listening level of program 2.

4 RET 1 (return video 1) button

The return video 1 signal is displayed on the viewfinder screen while the button is held pressed.

5 RET (return video) button and 2/3/4 (return video 2/3/4) select switch

When other return video systems are used in addition to return video 1, the signal selected with the 2/3/4 select switch is displayed on the viewfinder screen while holding the RET button pressed.

Note

The RET 1 button has priority over the RET (2/3/4) button if both buttons are pressed.

6 "Memory Stick Duo" slot and access lamp

When you insert a "Memory Stick" into the slot, the access lamp lights in green.
The lamp is lit in red while writing/reading data to/from the "Memory Stick."

Notes

- Only a "Memory Stick" of Duo size can be used with the camera.
- When the access lamp is lit in red, do not insert/remove the "Memory Stick Duo" or turn off the camera.

For details on "Memory Stick", see "Using a "Memory Stick"" (page 35).

7 CAMERA POWER switch and indicator

CCU: To operate on power supply via the connected CCU.
OFF: Not to supply power.
EXT: To operate on power supply through the DC IN connector.
The indicator is lit in green during operation. It is lit in red while standby power is being supplied from the CCU, even if the switch is set to OFF.

Note

If the unit is connected to a CCU with the switch set to EXT for power being supplied through the DC IN connector, the CABLE ALARM (OPEN) indicator on the CCU may light, but the unit and CCU can be used.

8 CALL button

Press to call the operator of the external control device (RCP, etc.). The call lamp of the connected device will light.

9 Line select switch

To select the intercom line:
PROD: Producer line
ENG: Engineer line

10 MIC (microphone) switch

Turns ON and OFF the microphone of the intercom headset.
ON: To turn on the microphone.
OFF: To turn off the microphone.
PTT: To turn on the microphone while the switch is set to this position. The switch is not locked at this position.

11 INTERCOM level control

To adjust the intercom audio listening level.

12 DISPLAY switch

Select the display on the viewfinder screen.
ON: To display various textual information, such as messages showing the camera settings and operating status, in addition to camera images.
OFF: To display camera images only.

MENU: To display menus for settings, in addition to camera images.

⓭ Menu control knob (rotary encoder)
Used to select settings from menus displayed on the viewfinder screen (by rotating it) and to confirm settings (by pushing it). Displayed items are depending on the setting of the DISPLAY switch.
When set to ON: The status screen is displayed when the knob is pressed.
When set to OFF: The VF SOURCE message is displayed when the knob is pressed. If the knob is pressed again while the message is displayed, the displayed items can be operated.
When set to MENU: The ordinal menu operation is available.
For details, see "Screen display of the viewfinder" (page 20).

⓮ ASSIGNABLE button
You can assign a function by using ASSIGN REAR on the <SWITCH ASSIGN> page of the OPERATION menu.

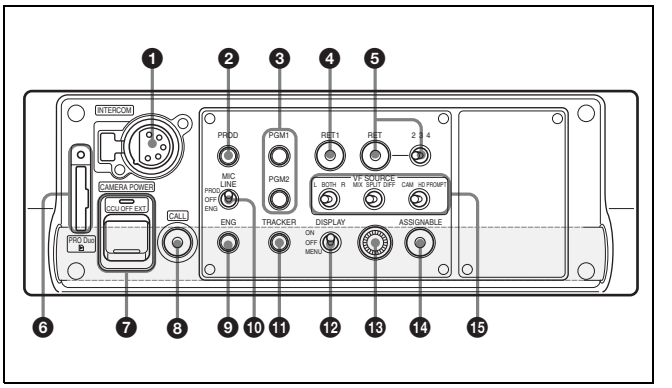
⓯ VF SOURCE switches
In 3D mode, these select the pictures to be displayed on the viewfinder screen.

L/BOTH/R switch
L: To display the main camera (left) picture.
BOTH: To display the pictures of both the main (left) and sub (right) cameras. The displayed style is selected with the MIX/SPLIT/DIFF switch.
R: To display the sub camera (right) picture.

MIX/SPLIT/DIFF switch
Select the display style for when the L/BOTH/R switch is set to BOTH. The settings for each screen are made on the VF SOURCE page of the OPERATION menu. The display style for each camera is set with the menu of the camera.
MIX: To display the mixed pictures from the main (left) and sub (right) cameras.
SPLIT: To display the pictures from the main (left) and sub (right) cameras on a split screen.
DIFF: To display difference between the pictures from the main (left) and sub (right) cameras.

CAM/HD PROMPT switch
Select a picture to be displayed on the viewfinder screen.
CAM: To display the picture from the cameras connected to the unit. The displayed picture is selected with the L/BOTH/R and MIX/SPLIT/DIFF switches.
HD PROMPT: To display the picture input to the HD PROMPTER connector on the CCU. If the output signal of an MPE-200 Multi Image Processor is input to the HD PROMPTER connector on the CCU, the picture processed with the MPE-200 can be monitored on the viewfinder screen.

CE type: Models for CE and E33



❶ and ❹ to ❽and ⓬ to ⓯ are the same as those of the SY type.

❷ PROD (producer line) control
To adjust the intercom audio listening level of the producer line.

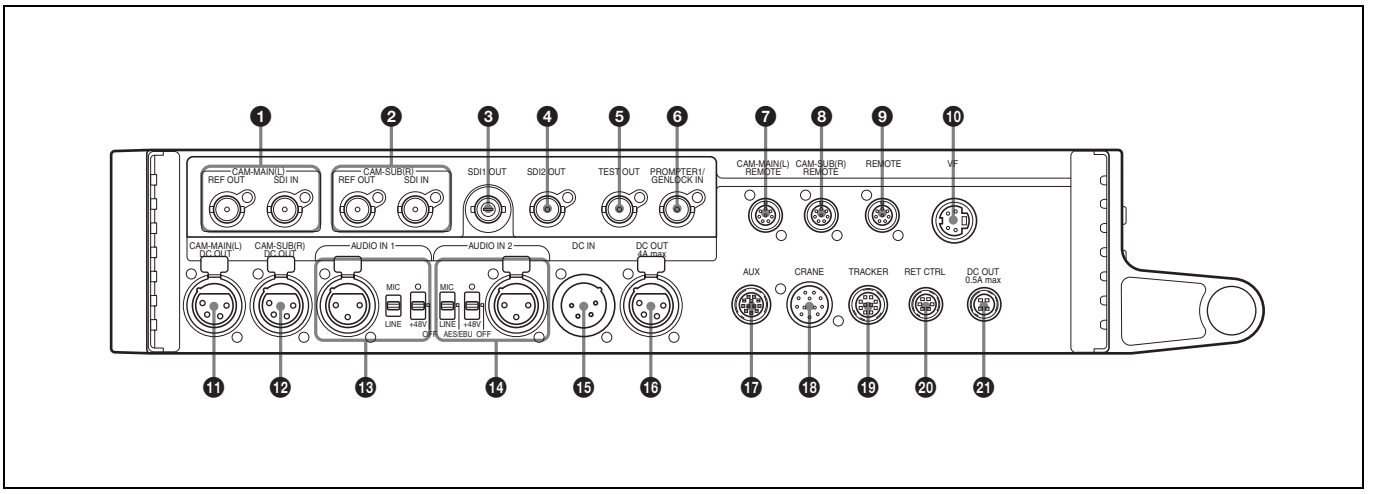
❸ PGM1 (program 1) and PGM2 (program 2) controls
To adjust the audio listening level of program 1 or program 2, respectively.

❾ ENG (engineer line) control
To adjust the intercom audio listening level of the engineer line.

❿ MIC LINE (intercom microphone line) switch
To select the talk line for intercom:
PROD: To talk over the producer line
OFF: To turn off the headset microphone for the intercom line
ENG: To talk over the engineer line

⓫ TRACKER control
To adjust the intercom audio listening level at the TRACKER connector on the side panel.

Side panel



❶ CAM-MAIN(L) connectors (BNC type)

REF OUT: To supply an external gen-lock signal to the camera for synchronization. Connect to the GENLOCK IN connector on the main camera (left).

SDI IN: To input an HD-SDI signal of the camera. In 3D mode, connect to the SDI 1 connector of the main camera (left).

❷ CAM-SUB(R) connectors (BNC type)

REF OUT: To supply an external gen-lock signal to the camera for synchronization. Connect to the GENLOCK IN connector on the sub camera (right).

SDI IN: To input an HD-SDI signal of the camera. In 3D mode, connect to the SDI 1 connector of the sub camera (right).

❸ SDI1 OUT (serial digital interface) connector (BNC type)

For HD-SDI signal output.
The output signal is selected by menu operation. The selectable signal is different between 2D mode and 3D mode.

❹ SDI2 OUT (serial digital interface) connector (BNC type)

For HD-SDI or SD-SDI signal output.
The output signal is selected by menu operation. The selectable signal is different between 2D mode and 3D mode.

❺ TEST OUT connector (BNC type)

For an analog signal output.
This supplies a VBS signal, an HD signal equal to the signal output from the VF connector, an HD-SYNC signal, or an SD-SYNC signal, depending on which of these you have selected on the menu.

Note

The VBS output signal has no subcarrier phase-lock function with respect to external sync signals.

❻ PROMPTER1/GENLOCK IN (prompter 1 signal output/ external sync signal input) connector (BNC type)

Set the switch according to the signal at the connector.

PROMPTER1: For output of the VBS prompter 1 signal (valid only when a camera control unit is connected). When a camera control unit having two prompter inputs is connected, the signal of input 1 is output from this connector.

GENLOCK IN: For input of an external gen-lock signal (BB or 3-level sync) when the camera is used as a standalone device.

Note

Even when a BB signal is used for the external sync signal, no subcarrier phase-lock function is available for the VBS output signal.

❼ CAM-MAIN(L) REMOTE connector (8-pin)

For transmitting the control signal with the camera. Connect this to the REMOTE connector of an HDC1500R/1600R/ 1400R/1500/1600 HD Color Camera or F35 Digital Cinematography Camera. In 3D mode, connect it to the main camera (left).

Note

When an HDC-P1 is used, do not connect this connector.

❽ CAM-SUB(R) REMOTE connector (8-pin)

For transmitting the control signal with the camera. Connect this to the REMOTE connector of an HDC1500R/1600R/ 1400R/1500/1600 HD Color Camera. In 3D mode, connect it to the sub camera (right).

Note

When an HDC-P1 is used, do not connect this connector.

❾ REMOTE connector (8-pin)

For connection to an RCP-1000-series Remote Control Panel, or MSU-1000/1500 Master Setup Unit.

❿ VF (viewfinder) connector (20-pin)

Connect the cable of the viewfinder (not supplied).

⓫ CAM-MAIN(L) DC OUT connector

To supply power to the camera (10.5 to 17 V DC, max 5.5 A[1)]).
In 3D mode, connect to the DC IN connector of a camera used as a main camera (left).
If an F35 Digital Cinematography Camera is connected, connect to the DC IN connector on the interface box.

1) The power capacity to be supplied is limited. For details see *"Notes on Power Supplied from This Unit" (page 14)*.

⓬ CAM-SUB(R) DC OUT connector
To supply power to the camera (10.5 to 17 V DC, 5.5 A[1] max.). In 3D mode, connect to. the DC IN connector of a camera used as a sub camera (right).
1) The power capacity to be supplied is limited. For details see *"Notes on Power Supplied from This Unit" (page 14)*.

⓭ AUDIO IN 1 connector (XLR 3-pin) and select switches
Connect a channel 1 audio signal and set the switch according to the connected source device.

Audio input select switch
Set to the appropriate position according to the equipment connected to the AUDIO IN 1 connector.
MIC: When an external microphone is connected
LINE: When a line-level (0 dBu) signal source is connected

Microphone power switches
When a microphone is connected to the corresponding AUDIO IN 1 connector, set whether or not to supply a power to the microphone.
OFF: Not to supply a power
+48V: To supply a power of +48 V
(No function has been assigned to the uppermost position. No power is supplied to the microphone.)

Note

To supply a power of +12 V, consult your Sony representative.

⓮ AUDIO IN 2 connector (XLR 3-pin) and select switch
Connect a channel 2 audio signal and set the switch according to the connected source device.

Audio input select switch
Set to the appropriate position according to the equipment connected to the AUDIO IN 2 connector.
MIC: When an external microphone is connected
AES/EBU: When a digital audio signal is connected (The signal must be in synchronization with the camera output).
LINE: When a line-level (0 dBu) signal source is connected

Microphone power switches
When a microphone is connected to the corresponding AUDIO IN 2 connector, set whether or not to supply a power to the microphone.
OFF: Not to supply a power
+48V: To supply a power of +48 V
(No function has been assigned to the uppermost position. No power is supplied to the microphone.)

Note

To supply a power of +12 V, consult your Sony representative.

⓯ DC IN (DC power supply input) connector (XLR 4-pin)
For connection to an AC-DN10 AC Adaptor, etc. to supply power (10.5 to 17 V DC) to the unit.

⓰ DC OUT (DC power supply output) 4A max connector (4-pin)
To supply power to an external device such as a lens (10.5 to 17 V DC, max. 4 A[2]). The output current depends on the device to be used.
2) The power capacity to be supplied is limited. For details, see *"Notes on Power Supplied from This Unit" (page 14)*.

⓱ AUX connector (12-pin)
For the future use.

⓲ CRANE connector (12-pin)
For external interface, such as viewfinder and trunk signal.

⓳ TRACKER connector (10-pin)
For communication a camera operator and tracker, and transmission of Intercom 1 and 2. An up tally signal and program audio signal are also output.

⓴ RET CTRL (return control) connector (6-pin)
For connection to a CAC-6 Return Video Selector.

㉑ DC OUT (DC power supply output) 0.5A max connector (4-pin)
To supply power to a script light of a BKP-7911 Script Holder (10.5 to 17 V DC, max. 0.5A[3]).
3) The power capacity to be supplied is limited. For details, see *"Notes on Power Supplied from This Unit" (page 14)*.

Installation and Connections

Notes on Power Supplied from This Unit

Capacity of power current supplied from the DC OUT connectors on the HDFA-200 is limited.

Supplied power voltage (when power is supplied from a CCU): 14 V

- CAM MAIN(L) DC OUT connector: max 5.5 A
- CAM SUB(R) DC OUT connector: max 4 A
- DC OUT 4A max connector: max 4 A
- DC OUT 0.5 A max connector: max 0.5 A
- VF connector: power of up to 2 A can be supplied to a connected viewfinder
- AUX connector: power of up to 1 A can be supplied to a connected device
- TRACKER connector: power of up to 0.5 A can be supplied to a connected device

Notes

- The total amount of current from the above-mentioned connectors is 13 A in maximum. The maximum amount of the current is limited depending on the type of CCU and the length of the optical fiber cable used.
- The total amount of current from the CAM SUB(R) DC OUT connector and DC OUT 4A max connector is limited to 6.5 A.

Limit of power supply according to the cable length

The amount of the supplied current depends on the optical fiber cable length as shown below.

When connecting to an HDCU1000

Optical fiber cable length 1900 m (6232 ft.): max. 7 A
Optical fiber cable length 1600 m (5248 ft.): max. 9 A
Optical fiber cable length 1200 m (3936 ft.): max.12 A
Optical fiber cable length 1100 m (3608 ft.): max. 13 A

When connecting to an HDCU1500

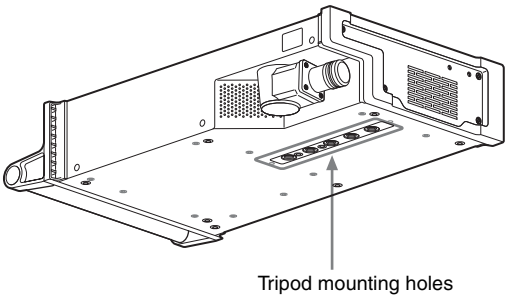
Optical fiber cable length 1100 m (3608 ft.): max. 6 A
Optical fiber cable length 700 m (2296 ft.): max. 8 A
Optical fiber cable length 200 m (656 ft.): max. 9.2 A
Optical fiber cable length 50 m (164 ft.): max.10 A

Notes

- The above values are merely reference values (from measurements taken with use of FURUKAWA ø9.2-mm cable).
- If an HDFA-200 is operated with external DC power, the amount of current supplied to external devices is 8 A at maximum.

Mounting the Unit to a Tripod

The unit can be mounted on a tripod, using one of the tripod mounting holes on the bottom of the unit.



Caution

- Select an appropriate hole from among those at the bottom of the unit, considering the balance of the weight of the unit and the tripod. If an inappropriate hole is selected, the unit may fall over.
- Check that the size of the selected hole matches that of the screw of the tripod. If they do not match, the unit cannot be attached to the tripod securely.

Mounting on a Rig

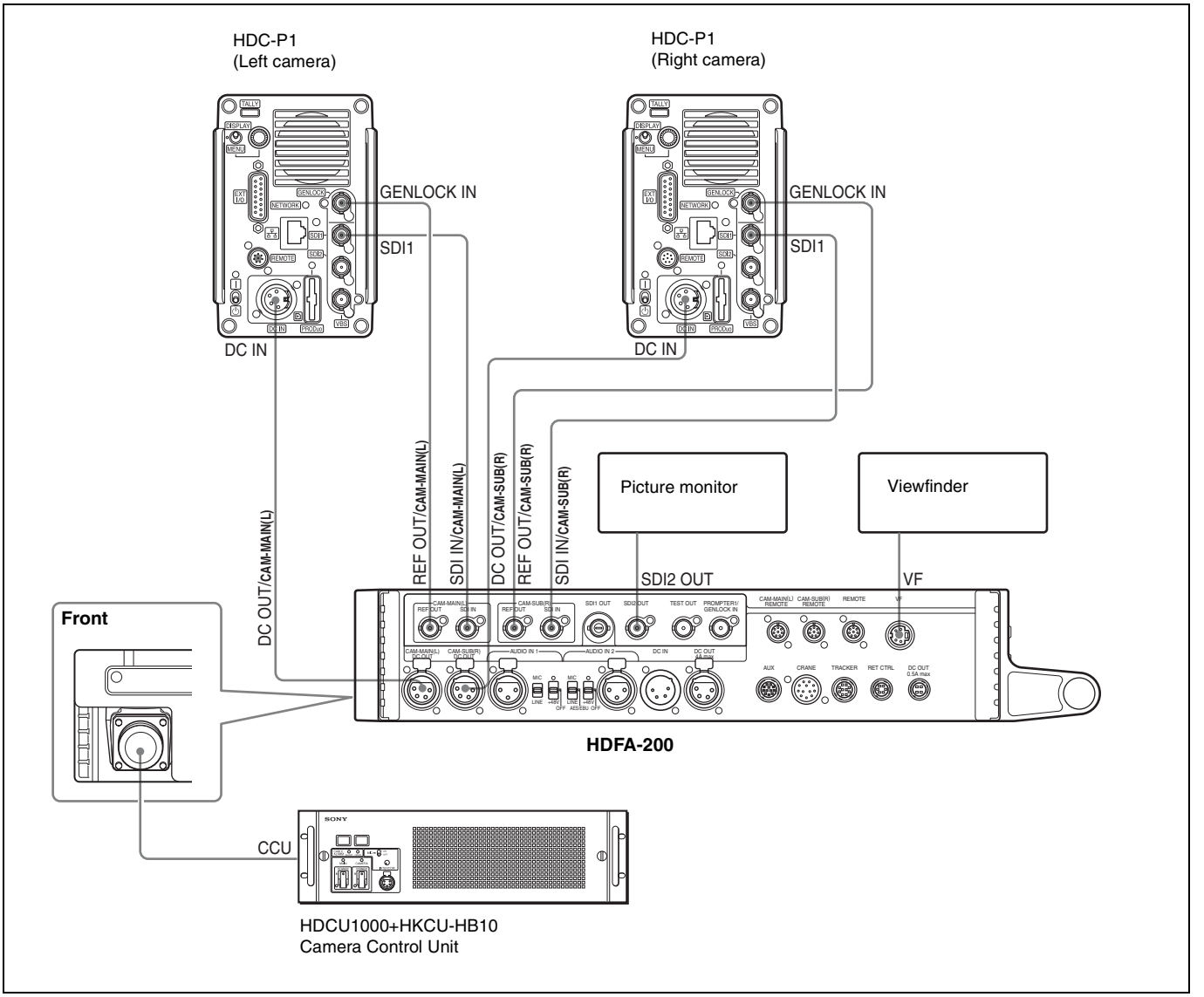
The HDFA-200 can be mounted on a rig, using the holes on the bottom or top of the unit (see *"Dimensions" (page 38)*). Select appropriate holes according to the type and weight of the rig.

For details on mounting, consult a rig manufacturer.

Connecting Cameras

Connect cameras to the unit, and connect the unit and CCU, using an optical fiber cable.

Connecting an HDC-P1



Settings when connecting HDC-P1 cameras

When an HDFA-200 and HDC-P1 cameras are connected, a CCA-5 camera control signal cable cannot be connected. Communication between an HDFA-200 and HDC-P1 is made with the special sync (UNIVERSAL SYNC) and command signals overlaid on the HD-SDI signal.
Check that 3D mode is set to ON on the RCP, MSU or CCU.

To set on an HDFA-200

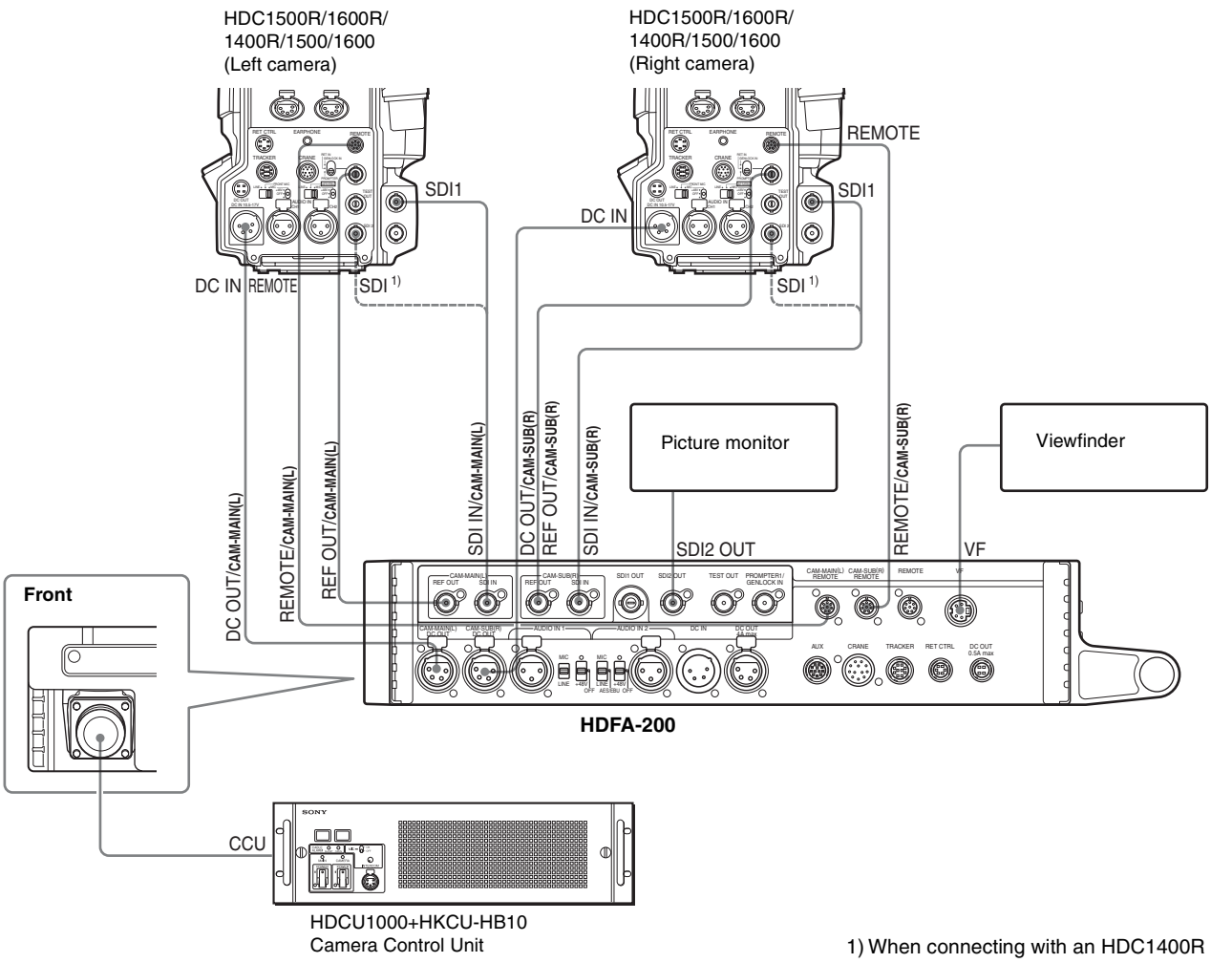
Set REF OUT of CAM1 and CAM2 on the ADAPTER MODE (M05) page of the MAINTENANCE menu to UNIVERSAL.

For the other settings, see “Preparatory Settings” (page 22).

To set on an HDC-P1

Set GENLOCK on the GENLOCK (M13) page of the MAINTENANCE menu to ENABLE. HV Phase adjustment value for GENLOCK is automatically invalid.

Connecting an HDC1500R/1600R/1400R/1500/1600



Settings when connecting HDC1500R-series cameras

Connect a CCA-5 camera control signal cable (hereafter referred to as CCA-5 cable) to control the camera from an HDFA-200. Be sure to make left and right camera connections correctly. The camera to which the CCA-5 cable for left side is connected is the main camera. In normal operation, the CCA-5 cable connection, left or right, cannot be distinguished. Display the Channel ID and check the left and right cameras. Check that 3D mode is set to ON on the RCP, MSU, or CCU.

To set on an HDFA-200

Set REF OUT of CAM1 and CAM2 on the ADAPTER MODE (M05) page of the MAINTENANCE menu to HD-SYNC.

For the other setting, see “Preparatory Settings” (page 22).

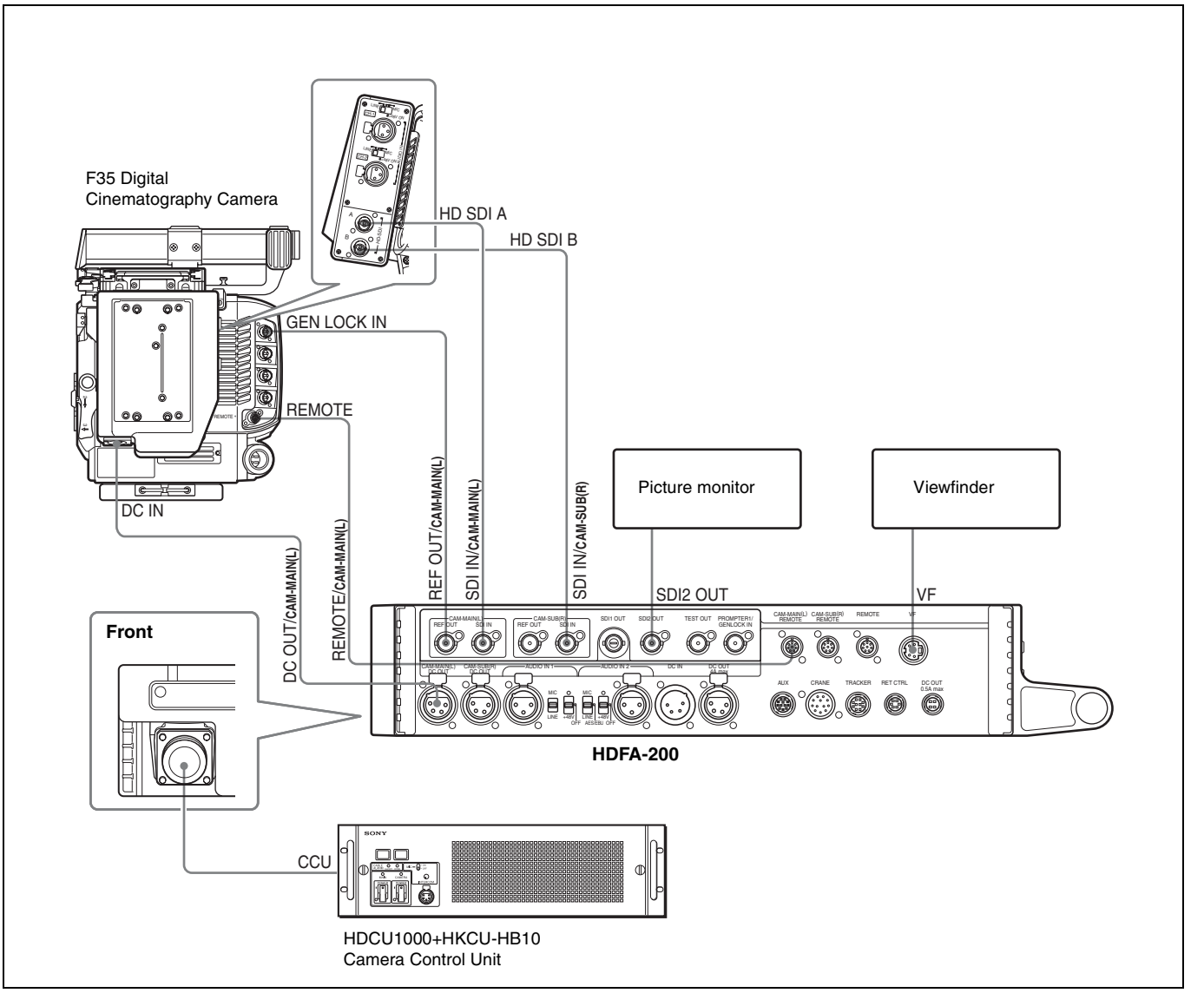
Note

Special SYNC (UNIVERSAL SYNC) cannot be used as a reference signal. Be sure to set to HD-SYNC.

To set on an HDC1500R-series camera

Set the GENLOCK IN/RET IN/PROMPTER switch on the rear panel to GENLOCK IN.

Connecting an F35



Settings when connecting an F35 (2D mode)

Set 3D mode to OFF on the RCP, MSU, or CCU.

To set on an MSU or RCP

Set on the Configuration screen as shown below.

1 Display the Configuration screen (Config screen for an RCP).

2 Select 3D System.

3 Select 3D Mode.

4 Set 3D mode to OFF.

To set on a CCU

Set 3D OPE to OFF on the 3D SETTINGS (S08) page of the SYSTEM OPERATION menu. Then set EVS/SHUTTER to OFF on the DISPLAY (C10) page of the CCU CONFIGURATION menu.

Connecting a Camera Control Unit (CCU)

Connecting the unit and a CCU

A camera control unit (CCU) to be connected to this unit requires that an HKCU-HB10/HB15 3G Fiber Transmission Unit be mounted. Connect the unit and CCU, following the procedures below.

1 Remove the cap from the fiber connector of this unit.

2 Connect the CCU connector on the unit and the CAMERA connector on a CCU, using an optical fiber cable.

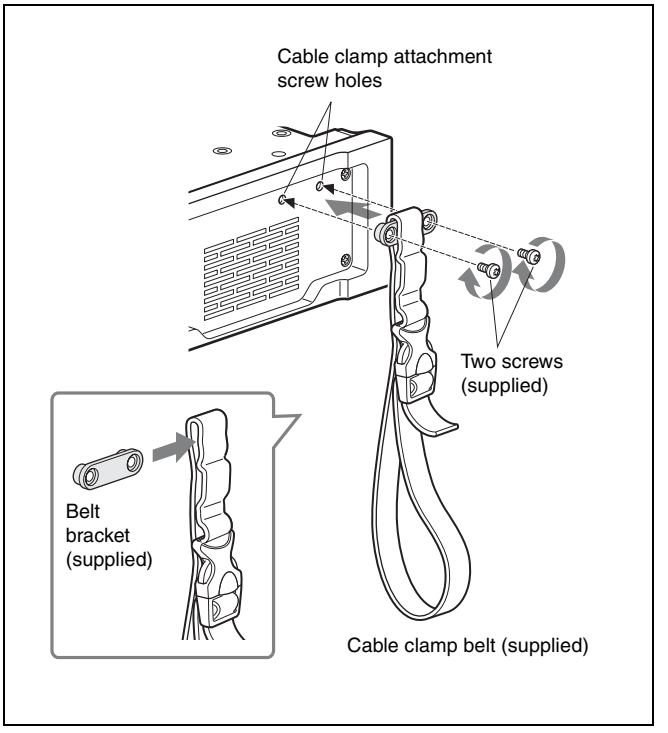
3 Set the CAMERA POWER switch on the unit to CCU.

Once connection is made correctly and power is supplied to the unit, the CAMERA POWER indicator on the unit and the POWER indicator on the CCU light in green.

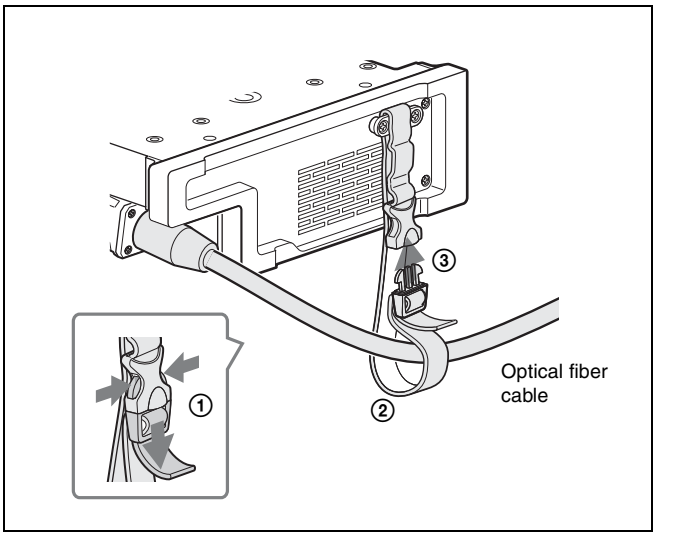
Using the cable clamp belt

When a cable clamp belt (supplied) to the unit, an optical fiber cable can be fastened to the front panel of the unit.

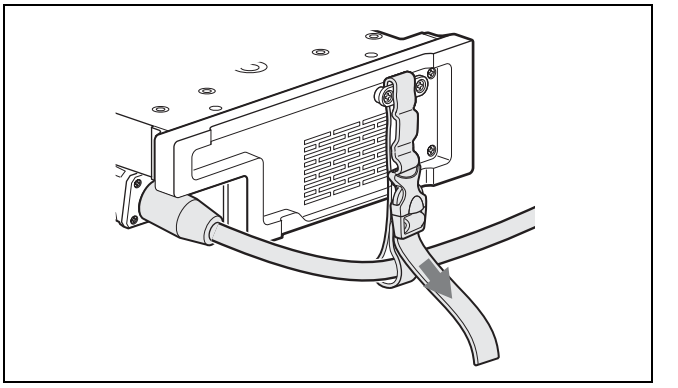
1 Insert the belt bracket into the upper loop of the cable clamp belt and secure the cable clamp belt to the camera, using the two supplied screws (+B3×8).



2 ① Release the buckle, ② bundle the cable with the belt, ③ then lock the buckle again.



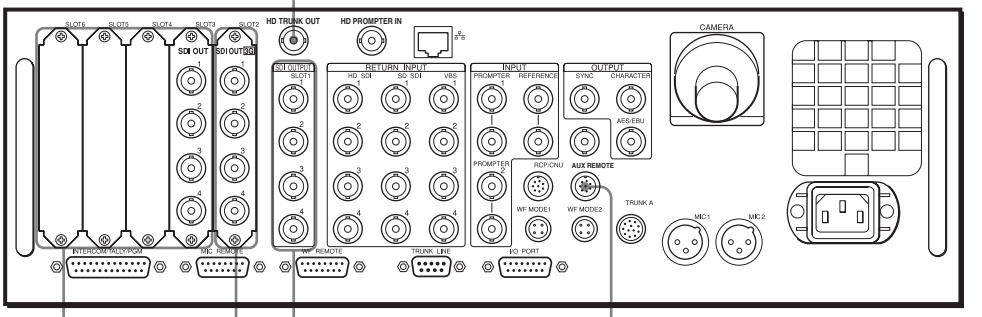
3 Adjust the length by pulling down the end of the belt.



Connecting a CCU in 3D mode

To connect an HDCU1000

HD TRUNK OUT
Not used in 3D mode.



SLOT3 to 6 (open slots)
Monitor signals selected on an MSU can be output. If an HKCU2005[1)] is mounted in SLOT2, various 3D monitor signals can be output.

SLOT1
A signal from a camera connected via the CAM MAIN(L) connector is output.

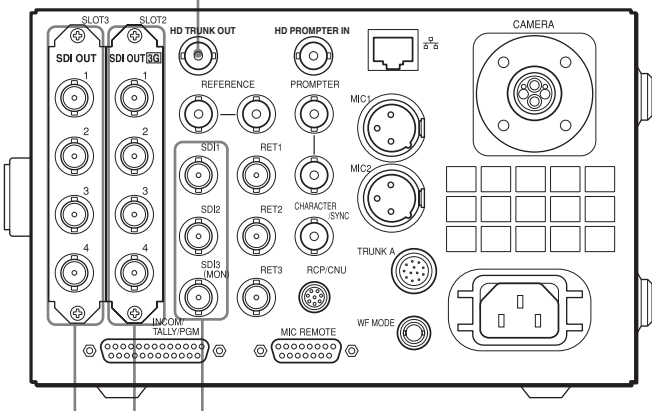
AUX REMOTE
Not used in 3D mode

SLOT2
A signal from a camera connected via the CAM SUB(R) connector is output. If an HKCU2005[1)] is mounted in SLOT2, the L/R 3D signals are output as 3G-SDI.

1) An HKCU2005 3G Single Link Interface Unit is optional.

To connect an HDCU1500

HD TRUNK OUT
Not used in 3D mode.



SLOT3
Monitor signals selected on an MSU can be output if an HKCU1005[1)] is mounted. If an HKCU2005[1)] is mounted in SLOT2, various 3D monitor signals can be output.

SLOT1
A signal from a camera connected via the CAM MAIN(L) connector is output.

SLOT2[2)]
A signal from a camera connected to the CAM SUB(R) connector is output. If an HKCU2005[1)] is mounted in SLOT2, the L/R 3D signals are output as 3G-SDI.

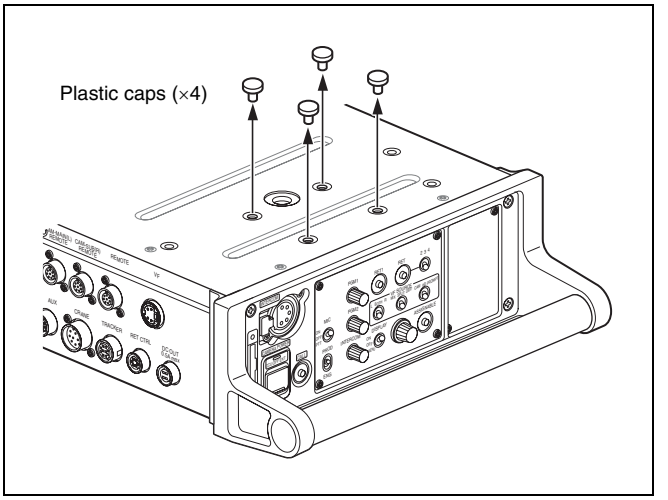
1) An HKCU1005 SDI Output Expansion Unit and HKCU2005 3G Single Link Interface Unit are optional.
2) Be sure to mount an HKCU1005 or HKCU2005 in SLOT2.

Attaching a Viewfinder

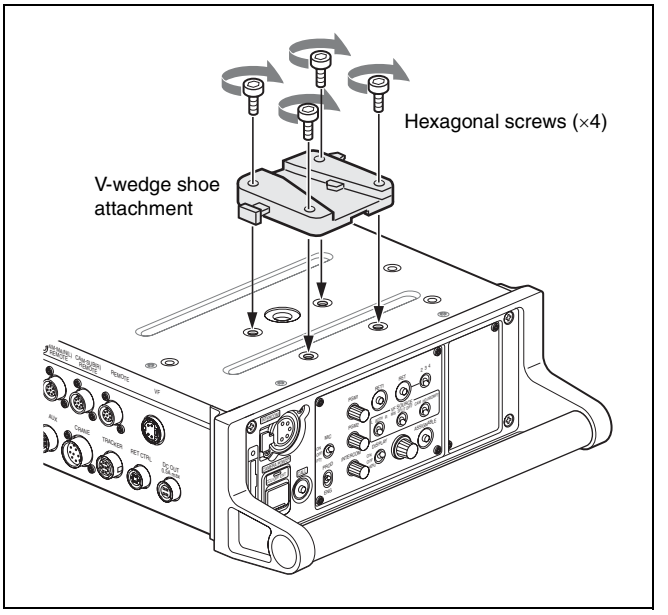
Attaching a viewfinder to the unit

Attach the viewfinder using the viewfinder attaching holes on the top of the unit.

1 Remove the four plastic caps from the viewfinder attaching holes.



2 Attach the V-wedge shoe attachment (supplied with the viewfinder) to the unit using the hexagonal wrench (supplied with the viewfinder) and four hexagonal screws (4×12, supplied with the viewfinder).

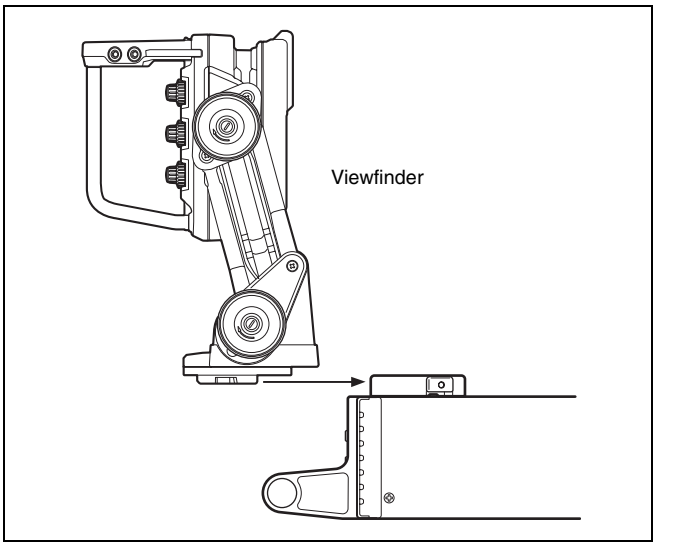


Note

Never use the screws longer than 4×12.

3 Mount the viewfinder firmly in the V-wedge shoe attachment.

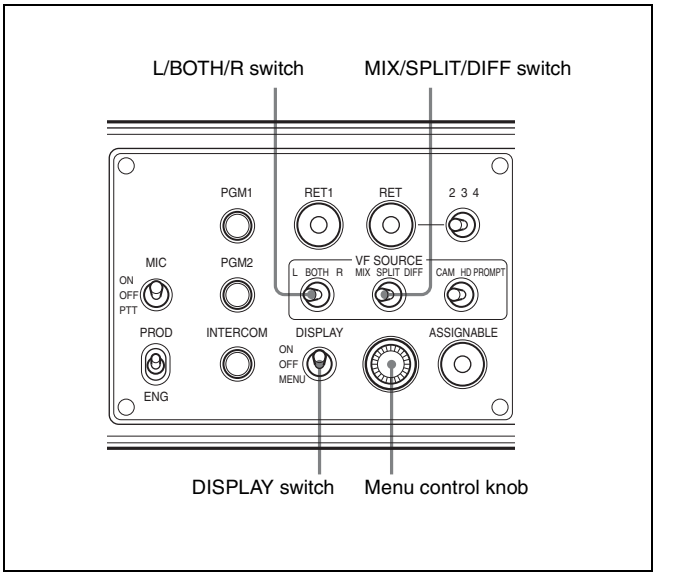
There is an audible click when the viewfinder snaps into the attachment.



Screen display of the viewfinder

Besides the video image, characters and messages showing the camera settings and operation status are displayed on the viewfinder screen.

Split screen, left and right camera picture inversion, or difference between the left and right camera pictures are available with settings on the VF SOURCE (03) page of the OPERATION menu. These functions can also be operated with the switches in the VF SOURCE block on the rear panel without using menu operation.

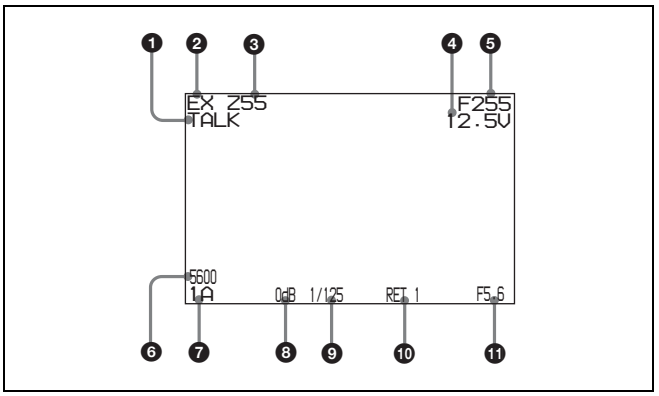


When the DISPLAY switch is set to ON

Items set to ON using the menu or related switches on the camera will be displayed.

Note

When an F35 is connected, set zoom position, focus position, and shutter/ECS not to be displayed.



❶ TALK indication
Displayed when the intercom microphone is set to ON.

❷ EX (lens extender) indication
Displayed when a lens extender is in use.

❸ Zoom position indication
Indicates the approximate position of the zoom lens variator between wide angle (0) and telephoto (99).

❹ Battery voltage indication
When the CAMERA POWER switch is set to EXT, the DC IN voltage is displayed.
When the switch is set to CCU, the internal voltage of the camera is displayed.

❺ Focus position indication
Shows the focus position of a zoom lens as a numeric value (0 to 255 [infinity]). (This is displayed only when a serial lens is used.)

❻ 5600K mode indication
Displayed when the internal electrical filter (5600K) is set to ON.

❼ Filter indication
Displays the types of filters currently selected. The number (1, 2, 3, 4, or 5) indicates the ND filter, and the letter (A, B, C, D, or E) indicates the CC filter.

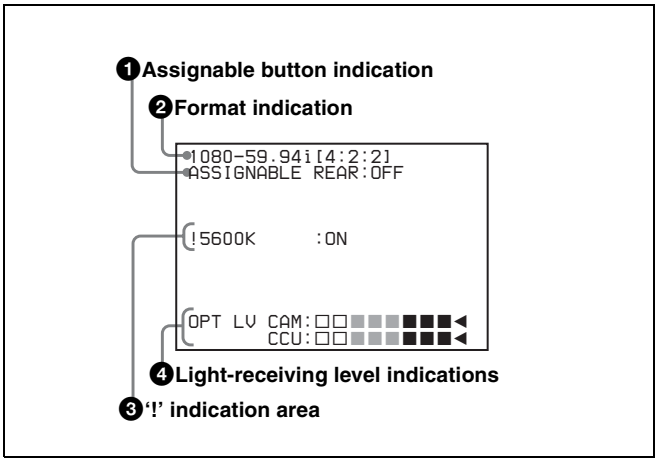
❽ Gain value indication
Shows the video gain value (dB) set with the GAIN switch.

❾ Shutter/ECS indication
Displays the shutter/ECS status. Nothing is displayed if the electronic shutter is set to OFF.

❿ RET indication
Displayed when the RET 1 button or RET button (2/3/4) is pressed (RET1 to RET4).

⓫ F-value indication
Indicates the lens F (iris opening) value.

When the menu control knob is pressed while the DISPLAY switch is set to ON, the status display is changed to show the following items:



❶ Assignable button indication
The function assigned to the ASSIGNABLE button *(page 11)* is indicated.

For the functions that can be assigned, see OPERATION menu <SWITCH ASSIGN> (page 30).

❷ Format indication
The current video format is displayed.

❸ '!' indication area
This area is used to display abnormal statuses, using the <'!' IND> function. Display options can be set, using the menu.

For details, see OPERATION menu <'!' IND> (page 29).

❹ Light-receiving level indications
This area shows the light-receiving levels in segments.
CAM: Light-receiving level at the CCU connector of the unit
CCU: Light-receiving level at the CAMERA connector of the CCU

Note

If a camera and camera control unit other than specified in "Compatible Devices" *(page 5)* is connected, correct indications may not be obtained.

When the DISPLAY switch is set to OFF

When the menu control knob is pressed with the L/BOTH/R switch set to L or R, the information regarding the camera currently displayed on the viewfinder screen ("CAM-L" or "CAM-R") appears.
The camera information will disappear after about three seconds with no operation.
To turn the display off, set MESSAGE to OFF on the VF SOURCE page of the OPERATION menu.

When the menu control knob is pressed with the L/BOTH/R switch is set to BOTH, the settings on the VF SOURCE page of the currently selected OPERATION menu are displayed on the viewfinder screen.
Settings on the VF SOURCE page of the OPERATION menu can be changed with the switches without the menu operation.

1 Press the menu control knob.

The pointer (➡) starts flashing, and the settings on the VF SOURCE page can be changed.
The information will disappear after about three seconds with no operation.

2 The items shown below can be changed with the MIX/SPLIT/DIFF switch.
MIX: MIX mode settings
SPLIT: SPLIT mode settings (except for SIDE BY SIDE, TOP AND BOTTOM)
DIFF: Turning ON/OFF of CAM-CHROMA

Preparatory Settings

Setting the 3D Mode

To use an HDFA-200 in 3D mode, the 3D mode setting must be made.

When a Camera Control Unit is connected

Set 3D mode to ON on the Remote Control Panel (RCP), Master Setup Unit (MSU) or CCU. The HDFA-200 connected to the CCU operates in the mode set here.

To make setting on an MSU or RCP

Set it on the Configuration screen, as described below.

1 Display the Configuration screen (Config screen for an RCP).

2 Select 3D System.

3 Select 3D Mode.

4 Set 3D Mode to ON.

To display the 3D support menu on an MSU or RCP

Set it on the Configuration screen, as described below.

1 Display the Configuration screen (Config screen for an RCP).

2 Select MSU (RCP for an RCP).

3 Select Security.

4 Set Engineer Mode to ON.

5 Select Item Permission.

6 Set 3D Menu Enable to ON.

To set it on a CCU

Set 3D MODE to ON on the 3D SETTINGS (S08) page of the SYSTEM OPERATION menu.

When an HDFA-200 is used as a standalone device

Set 3D MODE to ON on the ADAPTER MODE (M05) page of the MAINTENANCE menu of the HDFA-200.

Setting the Output Format

When a Camera Control Unit is connected

The output format is defined with the CCU. The settings on an HDFA-200 or camera are invalid.

For settings regarding the format, refer to the operation manual supplied with the CCU.

When an HDFA-200 is used as a standalone device

The output format is set with an HDFA-200.
Set the format on the OUTPUT FORMAT (M06) page of the MAINTENANCE menu.
The format for the cameras connected to the HDFA-200 is automatically set to the settings on the HDFA-200. However, for a camera such as an F35 that does not support the camera format command, set the format to the same one as for the HDFA-200, using the menu of the camera.

Setting the Picture Inverting Function for a Rig

In 3D mode, pictures from the left and right cameras can be inverted vertically or horizontally to suit the 3D rig to which cameras are mounted. For a camera without the picture inverting function, pictures are inverted with the circuit in the HDFA-200. For a camera that has the picture inverting function such as an HDC-P1, the camera's inverting function is controlled with commands. When inverting pictures, delay of the left and right camera's signals is automatically adjusted to match the timing.

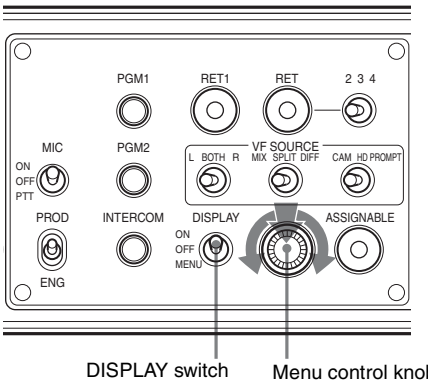
Select an appropriate number from 1 to 12 for RIG on the IMAGE INVERTER (M10) page of the MAINTENANCE menu while monitoring pictures on the viewfinder screen.

For details, see <IMAGE INVERTER> (page 32) of the MAINTENANCE menu.

Menus

The menus displayed on the viewfinder screen enable various settings of the camera.
The following controls are used to operate the menus.
To enter Menu mode, you can use the DISPLAY switch on the rear panel.
Rotate the menu control knob to select menu items or values and push on it to register (enter) the selection.

Rear panel



Displaying Menu Pages

Displaying a menu page

Set the DISPLAY switch to MENU.
The menu page last accessed will be displayed. If it is the first time, the CONTENTS page of the USER menu will be displayed.

Displaying the TOP MENU screen

If you set the DISPLAY switch to MENU while holding the menu control knob pressed, “TOP” is displayed at the upper right corner of the screen.
Turn the menu control knob to move the pointer (➡) on the display to “TOP” and push on the knob. The TOP MENU screen is displayed, listing the available menus.

```
<TOP MENU>

➡USER
 USER MENU CUSTOMIZE
 ALL
 ·OPERATION
 ·MAINTENANCE
 ·FILE
 ·DIAGNOSIS
```

Menu	Purpose
USER	This menu can include menu pages selected from among the OPERATION, MAINTENANCE, FILE, and DIAGNOSIS menus, for convenience. Changing, adding, and deleting pages can be performed with the USER MENU CUSTOMIZE menu.
USER MENU CUSTOMIZE	This menu allows you to edit the USER menu. *For details on the USER menu, see “Editing the USER Menu” (page 25).*
ALL	This menu permits you to control all items of the OPERATION menu, MAINTENANCE menu, FILE menu, and DIAGNOSIS menu as a single menu.
OPERATION	This menu contains items for camera operators to operate the camera. It mainly permits viewfinder, intercom, and switch settings.
MAINTENANCE	This menu contains items for performing camera maintenance operations, such as changing the system or setting infrequently.
FILE	This menu is for performing file operations, such as writing or clearing the reference file.
DIAGNOSIS	This menu enables you to confirm the self-diagnostic information.

Setting the Menu

Selecting a menu on the TOP MENU screen

Rotate the menu control knob to align the pointer with the desired menu indication then push on the knob.
The CONTENTS page (page No. 00) or the last accessed page of the selected menu is displayed.

Selecting a page from a CONTENTS page

Rotate the menu control knob to align the pointer with the desired page indication then push on the menu control knob.

If the screen can be scrolled, arrows will indicate the direction for scrolling.

Pointer

```
   CONTENTS        00  TOP
 ↓↓
  01.<VF DISPLAY>
  02.<'!'IND>
  03.<VF SOURCE>
➡ 04.<VF MARKER>
  05.<VF DETAIL>
  06.<FOCUS ASSIST>
  07.<ZEBRA>
  08.<CURSOR>
  09.<VF OUT>
  10.<SWITCH ASSIGN>
```

The selected page is displayed.

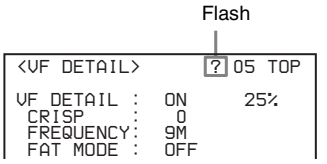
Page number

```
<VF DETAIL>          ➡ 05 TOP

VF DETAIL :  ON      25%
 CRISP    :   0
 FREQUENCY:  9M
 FAT MODE :  OFF
```

Changing the displayed page

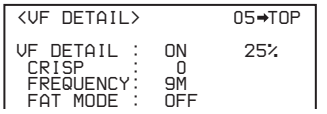
1 Check that the pointer is located at the left of the page number then push on the menu control knob.
The pointer changes to a flashing question mark.



2 Rotate the menu control knob to flip through the pages, and push on the knob when the desired page is displayed.
The question mark will change back to the pointer, and operations with the displayed page are enabled.

To return to the TOP MENU screen

Align the pointer with "TOP" at the top right of the menu page, then push on the menu control knob.



Setting the Menu Items

If a question mark is flashing at the left of the page number, push on the menu control knob to change it to the pointer. Operation on the displayed page is enabled.

1 Align the pointer with the desired item, then push on the menu control knob.
The pointer will change to a flashing question mark.

2 Rotate the menu control knob to change the setting value.
When the knob is rotated quickly, the values will change quickly; when rotated slowly, the values will change slowly.

To interrupt settings
Set the DISPLAY switch to OFF to turn off the menu screen display.
The setting operation can be restarted by setting the DISPLAY switch back to MENU.

3 Push on the menu control knob.
The question mark will change back to the pointer, and the new setting will be registered.

4 To change other setting items on the same menu page, repeat steps 1 through 3.

Specifying a character string

When you press the menu control knob with the pointer pointing to an item for which a character string, such as a file ID, is to be specified, a cursor and the list of selectable characters are displayed.
The displayed cursor can be moved by rotating the menu control knob.

1 Set the cursor to the position where you wish enter a character, then push on the menu control knob.
Another cursor appears on the character list.

2 Set the cursor to the character to be entered and push on the menu control knob.
Repeat steps **1** and **2**.

- By selecting INS on the line below the character list, you can enter a space at the cursor position.
- Selecting DEL deletes the character at the cursor position.
- You can return to step **1** without changing the character by selecting RET.
- If you enter the permitted maximum number of characters (up to the stop mark at the right end of the line), the cursor moves to ESC on the line below the character list.

3 Select END and push on the menu control knob.
The new string you have set is registered.
To restore the previous string, select ESC and push on the menu control knob.

Returning a menu item to its standard value

Select the menu item to be returned to its standard value then hold the menu control knob pressed for three seconds while the pointer (➡) is displayed.
If "10 SEC CLEAR" has been set to ON on the <FILE CLEAR> page of the FILE menu, you can return the setting in the reference file for the item being selected to the factory-set value by holding the menu control knob pressed for another 10 seconds.

Ending menu operations

Set the DISPLAY switch to OFF.

Editing the USER Menu

You can select desired pages and items from the OPERATION, MAINTENANCE, FILE, and DIAGNOSIS menus and register them to the USER menu.
If you specify pages or items frequently used for the USER menu, you can easily call and use them.
The following pages are included on the factory-set USER menu:

Menu page title	USER menu No.	Source menu / page No.
<VF OUT>	U01	OPERATION 09
<VF SOURCE>	U02	OPERATION 03
<VF DETAIL>	U03	OPERATION 05
<FOCUS ASSIST>	U04	OPERATION 06
<VF DISPLAY>	U05	OPERATION 01
<'!' IND>	U06	OPERATION 02
<VF MARKER>	U07	OPERATION 04
<CURSOR>	U08	OPERATION 08
<ZEBRA>	U09	OPERATION 07
<POWER SAVE>	U10	MAINTENANCE M11
<HEAD SET>	U11	OPERATION 11

Menu page title	USER menu No.	Source menu / page No.
<INTERCOM LEVEL>	U12	OPERATION 12
<MIC GAIN>	U13	MAINTENANCE M03
<ADAPTER MODE>	U14	MAINTENANCE M05
<OUTPUT FORMAT>	U15	MAINTENANCE M06
<TEST OUT>	U16	MAINTENANCE M08
<SDI OUT>	U17	MAINTENANCE M09
<DOWN CONVERTER>	U18	MAINTENANCE M07
<IMAGE INVERTER>	U19	MAINTENANCE M10
<ROM VERSION>	U20	DIAGNOSIS D05

For the items on each page, see "OPERATION Menu" (page 28), "MAINTENANCE Menu" (page 31), or "DIAGNOSIS Menu" (page 34).

The USER MENU CUSTOMIZE menu allows you to configure the USER menu as follows:

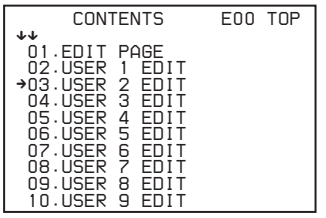
- Creating a new page with items selected from multiple menu pages
- Adding (registering) a menu page (new page you create or existing menu page) to the USER menu
- Deleting (unregistering) a page from the USER menu
- Changing the order of pages of the USER menu

Editing by items

While the EDIT page contains factory-preset items, the USER 1 EDIT to USER 19 EDIT pages are all blank in their initial state. You can register up to 10 items, including blank lines, on each of these pages.

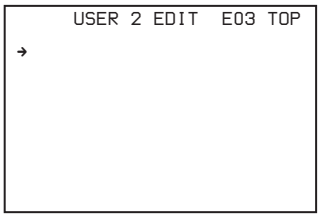
To add items to a page

1 **Select USER MENU CUSTOMIZE on the TOP MENU screen** *(page 24)***.**
If this is the first time the USER MENU CUSTOMIZE menu has been displayed, the CONTENTS page of the menu appears.

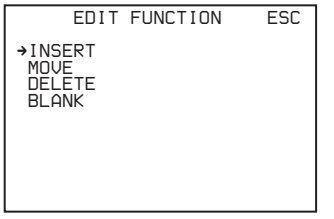


If the USER MENU CUSTOMIZE menu has been used before, the page last accessed appears.

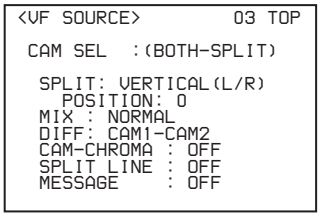
2 **If the CONTENTS page is displayed, turn the menu control knob to move the pointer to any of USER 1 EDIT to USER 19 EDIT then push on the menu control knob to display the page.**
If a different page is displayed, turn the menu control knob until the desired page appears then push on the menu control knob to select the page.
Example: When you select the USER 2 EDIT page



3 **Move the pointer to the item to be added (this operation is unnecessary if no item exists on the page, as shown in the figure for the previous step) then push on the menu control knob.**
The EDIT FUNCTION screen appears.



4 **Move the pointer to INSERT and push on the menu control knob.**
The page with the last item added appears.



5 **Add the items.**

① Turn the menu control knob until the page that has the desired items appears, then push on the menu control knob.

② Turn the menu control knob to move the pointer to the desired item, then push on the menu control knob

The USER 2 EDIT page appears again, displaying the newly added item.

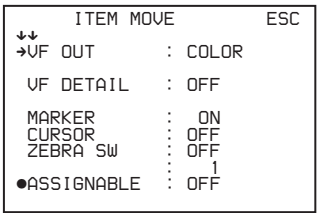
6 **Add the remaining items by repeating steps 3 to 5.**
You can add up to 10 items on one page.

To change the order of items on a page

1 **Move the pointer to the item to be moved then push on the menu control knob.**
The EDIT FUNCTION screen appears.

2 **Select MOVE then push on the menu control knob.**
The previously displayed page appears again.

3 **Move the pointer to the position where you wish to move the item then push on the menu control knob.**



The item selected in step **1** moves to the position that you selected in step **3**.
In the above example, ASSIGNABLE is moved to the top, and the other items are moved down one line.

Deleting items from a page

1 **Move the pointer to the item to be deleted then push on the menu control knob.**
The EDIT FUNCTION screen appears.

2 **Select DELETE and push on the menu control knob.**
The previously displayed page appears again, and the message “DELETE OK? YES→NO” appears.

3 **To delete, turn the menu control knob to move the pointer to YES and push on the menu control knob.**

Inserting a blank line

1 **Move the pointer to the item above which you wish to insert a blank line.**
The EDIT FUNCTION screen appears.

2 **Select BLANK then push on the menu control knob.**
The previously displayed page appears again, and a blank line is inserted above the specified item.

Note

You cannot insert a blank line on a page where 10 items have already been registered.

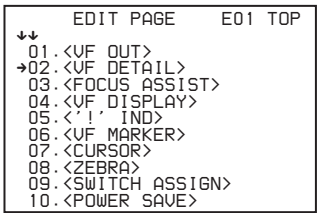
Editing by pages

You can add a page to the USER menu, delete a page from the USER menu, or replace pages, using the EDIT PAGE of the USER MENU CUSTOMIZE menu.

Adding a page

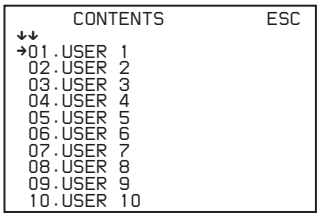
1 **Select USER MENU CUSTOMIZE on the TOP MENU screen.**
If this is the first time the USER MENU CUSTOMIZE menu has been displayed, the CONTENTS page of the menu appears. If the menu has been used before, the page last accessed appears.

2 **If the CONTENTS page is displayed, turn the menu control knob to move the pointer to EDIT PAGE then push on the menu control knob to display the EDIT PAGE screen.**
If a different page is displayed, turn the menu control knob until the EDIT PAGE screen appears then push on the menu control knob to select the page.



3 **Move the pointer to the position where you wish to add the page then push on the menu control knob.**
The EDIT FUNCTION screen appears.

4 **Select INSERT then push on the menu control knob.**
The selection screen appears.



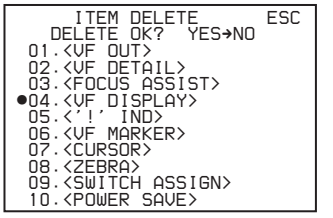
5 **Move the pointer to the desired page then push on the menu control knob.**
This adds the number and name of the selected page above the item selected in step **3**.

To cancel addition of a page
Before pushing the menu control knob in step **5**, turn the menu control knob to move the pointer to ESC at the top right of the screen then push on the menu control knob.
The EDIT PAGE screen appears again.

Deleting a page

1 **On the EDIT PAGE screen of the USER MENU CUSTOMIZE menu, move the pointer to the page to be deleted and push on the menu control knob.**
The EDIT FUNCTION screen appears.

2 **Select DELETE then push on the menu control knob.**
The previously displayed page appears again, and the message “DELETE OK? YES→NO” appears.



3 **To delete, turn the menu control knob to move the pointer to YES then push on the menu control knob.**

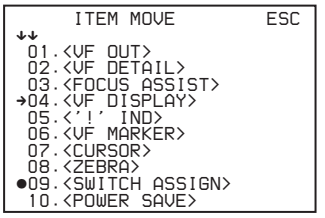
Changing the order of pages

1 **Display the EDIT PAGE screen of the USER MENU CUSTOMIZE menu. Turn the menu control knob to move the pointer to the page that you wish to move then push on the menu control knob.**

The EDIT FUNCTION screen appears.

2 **Select MOVE then push on the menu control knob.**
The EDIT PAGE screen appears again.

3 **Move the pointer to the position where you wish to move the page then push on the menu control knob.**



The page selected in step **1** is moved to the position selected in step **3**.
In the above example, <SWITCH ASSIGN> moves to the "04" position, and the <VF DISPLAY> and following pages move down one line.

OPERATION Menu

Note

These remarks are common for all the following menu tables.
ON, OFF, 0, ... , in the Settings columns: Default settings
Page No. nn (Unn): For the pages that have been registered on the USER menu at the factory, the USER menu page numbers are indicated in parenthesis.
Execute by ENTER: Execute by pushing on the menu control knob.

Page title Page No.	Item	Settings
<VF DISPLAY> 01(U05) 1) Status of CAM L 2) Status of this unit	EX[1)]	**ON**, OFF
	ZOOM[1)]	ON, **OFF**
	DISP[1)]	**LEFT**, RIGHT
	FOCUS[1)] Valid only when a serial lens is used	ON, **OFF**
	ND[1)]	**ON**, OFF
	CC[1)]	**ON**, OFF
	5600K[1)]	**ON**, OFF
	IRIS[1)]	**ON**, OFF
	GAIN[1)]	**ON**, OFF
	SHUTT[1)]	**ON**, OFF
	BATT[2)]	ON, **OFF**
	RETURN[2)]	**ON**, OFF
	TALK[2)]	**ON**, OFF
	MESSAG[2)]	**ALL**, AT, WRN, OFF ALL: To display all messages AT: To display Auto Setup information and higher WRN: To display warning messages and higher

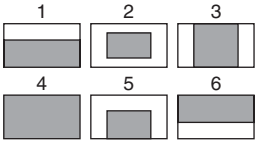
Page title Page No.	Item	Settings
<'!' IND> 02 (U06) 1) Status of CAM L 2) Status of this unit	[IND]: Activate/deactivate the '!' indication *(page 21)*. [NORMAL]: Specify the conditions under which the '!' indication is not to be displayed even if [IND] is ON. (By specifying the standard or normal conditions here, nonstandard or abnormal conditions can be found with the '!' indication on the viewfinder.)	
	ND[1)]	[IND] **ON**, OFF
		[NORMAL] **1**, 2, 3, 4 (combination allowed)
	CC[1)]	[IND] **ON**, OFF
		[NORMAL] A, **B**, C, D (combination allowed)
	5600K[1)]	[IND] **ON**, OFF, - - - - - -: with CCU connected
		[NORMAL] ON, **OFF**
	SHUTT[1)]	[IND] **ON**, OFF, - - - - - -: with CCU connected
		[NORMAL] ON, **OFF**
	FAN[2)]	[IND] **ON**, OFF
		[NORMAL] **AUTO1,** AUTO2, MIN, MAX
	EXT[1)]	[IND] **ON**, OFF
	FORMAT[2)]	[IND] **ON**, OFF
		[NORMAL] **JN, SY model:** **59.94i**, 30PsF, 29.97PsF, 50i, 25PsF, 24PsF, 23.98PsF, 60P, 59.94P, 60i **CE, E33 model:** 59.94i, 30PsF, 29.97PsF, **50i** 25PsF, 24PsF, 23.98PsF, 60P, 59.94P, 60i
<VF SOURCE> 03 (U02) - -: When 3D MODE on <ADAPTER MODE> (M05) set to OFF (cannot be changed)	CAM SEL	(MAIN[L]), (SUB[R]), (BOTH-SPLIT), (BOTH-MIX), (BOTH-DIFF), (HD-PROMPT) What is displayed depends on the settings of the VF SOURCE switches
	SPLIT	HORIZONTAL(L/R), **VERTICAL(L/R)**, VERTICAL(R/L), MIRROR, SIDE BY SIDE, TOP AND BOTTOM, - -
	POSITION	–99 to 99, **0**, - -
	MIX	**NORMAL**, DUAL PICT, ANAGLYPH, LINE-ALTE1, LINE-ALTE2, DUALPICT, --
	DIFF	**CAM1-CAM2**, CAM2-CAM1, - -
	CAM-CHROMA	ON, **OFF**, - -
	SPLIT LINE	ON, **OFF**, - -
	MESSAGE	ON, **OFF**, - -

Page title Page No.	Item	Settings
<VF MARKER> 04 (U07)	MARKER	**ON**, OFF
		WHITE, BLACK, DOT
	CENTER	ON, **OFF**
		1, 2, 3, 4 1: Entire cross 2: Entire cross with a hole 3: Center 4: Center with a hole
	SAFETY ZONE	ON, **OFF**
		80.0, **90.0**, 92.5, 95.0%
	EFFECT	ON, **OFF**, (FOCUS) (FOCUS): Displayed when INDICATOR of <FOCUS ASSIST> (06) is ON.
	ASPECT	ON, **OFF**
		16:9, 15:9, 14:9, 13:9, **4:3**, (4.3) (4.3): If VF SCAN of <VF OUT> (09) is set to 4:3
	MASK	ON, **OFF**, (ON) (ON): If VF SCAN of <VF OUT> (09) is set to 4:3
		0 to 15 **12** Set the level to darken outside the aspect area.
	SAFETY For the safety marker in Aspect mode	ON, **OFF**, (AREA) (AREA): Displayed when AREA MARKER of <FOCUS ASSIST> (06) is ON.
		80.0, **90.0**, 92.5, 95.0%
<VF DETAIL> 05 (U03)	VF DETAIL	**ON**, OFF
		0 to 100%, **25%**
	CRISP	–99 to 99, **0**
	FREQUENCY	**9M**, 14M, 18M
	FAT MODE	ON, **OFF**
	FLICKER	ON, **OFF**
	AREA	**100%**, 70%, 60%, 50%, 40%
	ZOOM LINK	0%, 25%, 50%, 75%, **100%**
	COLOR DETAIL	ON, **OFF**
		BLUE, RED, YELLOW
	PEAK COLOR	ON, **OFF**
	CHROMA LEVEL	100%, 50%, **25%**, 0%

Page title Page No.	Item	Settings
<FOCUS ASSIST> 06 (U04)	INDICATOR	ON, **OFF**, (EFFECT) (EFFECT): Displayed when EFFECT of <VF MARKER> (04) is ON.
	MODE	**BOX**, B&W, COL
		BOTTOM, LEFT, TOP, RIGHT
	LEVEL	1 to 5, **3**
		QUICK, SMOOTH
	GAIN	0 to 99, **50**
	OFFSET	0 to 99, **50**
	AREA MARKER	ON, **OFF**, (ASPECT) (ASPECT): Displayed when ASPECT SAFETY of <VF MARKER> (04) is ON.
	SIZE	SMALL, **MIDDLE**, LARGE
	POSITION	LEFT, **CENTER**, RIGHT
	POSITION H	0 to 99, **50**
	POSITION V	0 to 99, **50**
<ZEBRA> 07 (U09)	ZEBRA	ON, **OFF**
		1, 2, 1&2
	ZEBRA1 LEVEL	50 to 109%, **70**
	WIDTH	0 to 30%, **10**
	ZEBRA2	50 to 109%, **100**
<CURSOR> 08 (U08)	CURSOR	ON, **OFF**
		WHITE, BLACK, DOT
	BOX/CROSS	**BOX**, CROSS
	H POSITION	0 to 99, **50**
	V POSITION	0 to 99, **50**
	WIDTH	0 to 99, **50**
	HEIGHT	0 to 99, **50**
<VF OUT> 09 (U01)	VF OUT	**COLOR**, Y, R, G, B,
	RET MIX VF	ON, **OFF**
	MIX DIRECTION	MAIN, **RET**
	MIX VF MODE	**Y-MIX**, WIRE(W), WIRE(B)
	MIX VF LEVEL	0 to **80**%
	VF SCAN	**16:9**, 4:3
<SWITCH ASSIGN> 10	ASSIGN REAR	**JN, SY model:** **OFF**, RETURN1 SW, RETURN2 SW, INCOM, VF DETAIL, MIX VF, 5600K, FAN MAX, VF SCAN, CURSOR, MARKER **CE, E33 model:** **OFF**, RETURN1 SW, RETURN2 SW, ENG, PROD, VF DETAIL, MIX VF, 5600K, FAN MAX, VF SCAN, CURSOR, MARKER

Page title Page No.	Item	Settings
<HEAD SET> 11 (U11)	INTERCOM MIC	**DYNAMIC**, CARBON, MANUAL
	LEVEL	–60,–40, –20 dB, **(–60 dB)** Settings in ( ): With DYNAMIC or CARBON (cannot be changed)
		–6, **0**, 6 dB Input gain
	POWER	ON, OFF, (ON), **(OFF)** Settings in ( ): With DYNAMIC or CARBON (cannot be changed)
	UNBAL	**ON**, OFF, (ON), (OFF) Settings in ( ): With CARBON (cannot be changed)
<INTERCOM LEVEL> 12 (U12)	SIDE TONE	MU, 1 to 99, **50**
<RECEIVE SEL1> 13	INTERCOM RECEIVE SELECT	SEPARATE, **MIX**
	INTERCOM JN, SY model only	- - -, **LEFT**, RIGHT, BOTH
	ENG CE, E33 model only	- - -, **LEFT**, RIGHT, BOTH
	PROD CE, E33 model only	- - -, **LEFT**, RIGHT, BOTH
	PGM1	- - -, LEFT, **RIGHT**, BOTH
	PGM2	- - -, LEFT, **RIGHT**, BOTH
	TRACKER	- - -, **LEFT**, RIGHT, BOTH
<RECEIVE SEL2> 14	TRACKER RECEIVE SELECT	SEPARATE, **MIX**
	INTERCOM JN, SY model only	- - -, **LEFT**, RIGHT, BOTH
	TALK CE, E33 model only	- - -, **LEFT**, RIGHT, BOTH
	ENG CE, E33 model only	- - -, **LEFT**, RIGHT, BOTH
	PROD CE, E33 model only	- - -, **LEFT**, RIGHT, BOTH
	PGM1	- - -, LEFT, **RIGHT**, BOTH
	PGM2	- - -, LEFT, **RIGHT**, BOTH
<OPERATOR FILE> 15 *See FILE menu F01.*	READ (MS→CAM)	Execute by ENTER.
	WRITE (CAM→MS)	Execute by ENTER.
	PRESET	Execute by ENTER.
	FILE ID	Max.14 characters
	CAM CODE	Display only
	DATE	Display only

MAINTENANCE Menu

Page title Page No.	Item	Settings
<AUTO SETUP> M01	AUTO BLACK	Execute by ENTER.
	AUTO WHITE	Execute by ENTER.
	AUTO LEVEL	Execute by ENTER.
	AUTO BLACK SHADING	Execute by ENTER.
	TEST	**OFF**, SAW, 3STEP, 10STEP
<AUTO IRIS> M02	AUTO IRIS	ON, **OFF**
	WINDOW	**1**, 2, 3, 4, 5, 6 Select the auto iris windows:  The shaded parts indicate the area where light detection occurs.
	IRIS LEVEL	–99 to 99, **0** ±4 steps
	APL RATIO	–99 to 99, **65**
	IRIS GAIN	–99 to 99, **0**
	IRIS CLOSE	ON, **OFF**
<MIC GAIN> M03 (U13) Settings in ( ): When a CCU is connected (cannot be changed)	MIC1	20 dB, 30 dB, 40 dB, 50 dB, **60 dB**, (20 dB), (30 dB), (40 dB), (50 dB), (60 dB)
	MIC2	20 dB, 30 dB, 40 dB, 50 dB, **60 dB**, (20 dB), (30 dB), (40 dB), (50 dB), (60 dB)
	MIC POWER	
	MIC1	(OFF), (48V), (AB), (- -)
	MIC2	(OFF), (48V), (AB), (- -)
<CALL/TALLY> M04 Invalid when no CCU connected	CALL SETTING	
	CCU CALL	- - -, **ON**, OFF
	ADAPTER CALL	- - -, **OFF** ON
	RELAY SETTING	
	CCU→CAM	- - -, **OFF**, OM
	ADAPTER→ CAM	- - -, **ON**, OFF
<ADAPTER MODE> M05 (U14)	3D MODE	**ON**, OFF
	CAM1	
	REF OUT	HD-SYNC, **UNIVERSAL**
	COMMAND	(ENABLE), (- -)
	CAM2	
	REF OUT	HD-SYNC, **UNIVERSAL** , (- -)
	COMMAND	(ENABLE), (- -)

Page title Page No.	Item	Settings
<OUTPUT FORMAT> M06 (U15)	CURRENT	Displays the current format.
	ACTIVE LINE Not displayed when a CCU connected	**JN, SY model:** **1080 59.94i**, 1080 50i, 1080 29.97PsF, 1080 25PsF, 1080 23.98Psf, 1080 24PsF, 720 59.94P, 720 50P **CE, E33 model:** 1080 59.94i, **1080 50i**, 1080 29.97PsF, 1080 25PsF, 1080 23.98Psf, 1080 24PsF, 720 59.94P, 720 50P (Changed to the usable format according to the connected camera)
<DOWN CONVERTER> M07 (U18)	(in 3D mode)	
	OUTPUT SIGNAL	**L/R**, VF, RET, SUB(R) L/R: RET button operation disabled VF: RET button operation enabled
	(in 2D mode)	
	OUTPUT SIGNAL	MAIN(L), VF, RET, SUB(R) MAIN(L): RET button operation disabled VF: RET button operation enabled
	ASPECT	**SQ**, EC
<TEST OUT> M08 (U16)	OUTPUT	**VBS**, VF, HD-SYNC, SD-SYNC, PROMPTER
	(PWR SAVE)	Displayed in POWER SAVE mode only
	VBS-OUT	
	CHARACTER	**ON**, OFF
	GAIN	–127 to 127, **0**
	CHROMA	–127 to 127, **0**
	SETUP	**ON**, OFF
	HD SYNC-OUT	
	V-PHASE	–127 to 127, **0**
	H-PHASE	–127 to 127, **0**

Page title Page No.	Item	Settings
<SDI OUT> M09 (U17)	(in 3D mode)	
	SDI-1 OUT	**MAIN(L)**, HD PROMPTER, 3G-SDI
	SDI-2 OUT	VF-SOURCE, VF, **SUB(R)**, RET, SD-SDI Output an SD signal set on OUTPUT SIGNAL of <DOWN CONVERTER> when SD-SDI selected
	(in 2D mode)	
	SDI-1 OUT	MAIN(L), HD PROMPTER, 3G-SDI
	SDI-2 OUT	MAIN(L), VF, SUB(R), RET, SD-SDI Output an SD signal set on OUTPUT SIGNAL of <DOWN CONVERTER> when SD-SDI selected
	(in 3D/2D mode)	
	(PWR SAVE)	Displayed in POWER SAVE mode only
	CHARACTER	ON, **OFF** Not displayed if SDI2 OUT is set to SUB(R)
	EMB AUDIO	ON, **OFF**
	(1-MIC1 2-MIC2) (3-AES1 4-AES2)	Displayed when OUTPUT is MAIN(L)
	(1-PGM1 2-PGM2) (3-ENG 4-PROD)	Displayed when OUTPUT is other than MAIN(L)

Page title Page No.	Item	Settings
<IMAGE INVERTER> M10 (U19)	(in 3D mode)	
	RIG: 1: L:NRML R:NRML	
	1: L:NORMAL	R:NORMAL
	2: L:H-Invert	R:NORMAL
	3: L:V-Invert	R:NORMAL
	4: L:HV-Invert	R:NORMAL
	5: L:NORMAL	R:H-Invert
	6: L:NORMAL	R:V-Invert
	7: L:NORMAL	R:HV-Invert
	8: L:HV-Invert	R:HV-Invert
	9: L:H-Invert	R:HV-Invert
	10: L:V-Invert	R:HV-Invert
	11: L:HV-Invert	R:H-Invert
	12: L:HV-Invert	R:V-Invert
	(in 2D mode)	
	H MIRROR	(OFF), (ON)
	V MIRROR	(OFF), (ON)
	(in 3D/2D mode)	
	V PHASE STATUS	
	CAM1 V STATUS	(MATCH), (UNMATCH)
	CAM2 V STATUS	(MATCH), (UNMATCH)
<POWER SAVE> M11 (U10)	SDI-2 OUT	PWR SAVE, **ACTIVE**
	DOWN CONVERTER	PWR SAVE, **ACTIVE**
<TRUNK> M12	TRUNK	**ON**, OFF
	IF	**232C**, 422A
<GENLOCK> M13 Items other than REFERENCE are displayed only when no CCU connected.	REFERENCE	Condition of synchronisation, display only
	GENLOCK	**DISABLE**, ENABLE
	STATUS	Display only
	FORMAT	
	PHASE	
	V	–1024 to 1023, **0**
	HD H	–1700 to 1700, **0**
	SD H	–1024 to 1023, **0**
<DATE> M14	DATE/TIME	yyyy/mm/dd hh:mm
<BATTERY ALARM> M15	BEFORE END	**11.5 V** to 17.0 V
	END	**11.0 V** to 11.5 V

Page title Page No.	Item	Settings
<OTHERS 1> M16	FAN MODE	OFF, **AUTO1**, AUTO2, MIN, MAX AUTO1: Normal rotation AUTO2: Slow rotation (The internal temperature may raise with the OFF setting.)
	CAM BARS	ON, **OFF**
	CAM MENU	ON, **OFF**, (OFF) (OFF): When a camera other than an HDC-P1 is connected
<OTHERS 2> M17	DATE TYPE	1 Y/Mn/D, 2 Mn/D, 3 D/M/Y 4 D/M, **5 M/D/Y**, 6 M/D Y: Year Mn: Month (numeric) M: Month (character string) D: Day
	FILTER WHT MEM	ON, **OFF** Set to ON/OFF to use independent white memory at each CC filter position.
	F NO. DISP	**CONTROL**, RETURN Select the iris indication on the panel when AUTO IRIS is off: CONTROL: To display the value from the camera RETURN: To display the value returned from the lens (When AUTO IRIS is on, the value returned from the lens is always displayed.)

FILE Menu

Three types of files can be used for easy adjustments of the camera; Operator, Scene, and Reference.
You can store the items set with the OPERATION menu and customized USER menu in the Operator file.

For the specific items included in these files, refer to the Maintenance Manual.

Page title Page No.	Item	Settings / **Default**
<OPERATOR FILE> F01	READ (MS→CAM)	Execute by ENTER. To read the operator file from a “Memory Stick”
	WRITE (CAM→MS)	Execute by ENTER. To write the current settings of the operator file items to a “Memory Stick”
	PRESET	Execute by ENTER. To set the operator file items to the preset values in internal memory
	STORE PRESET FILE	Execute by ENTER. To store the current settings of the operator file items in the operator file in internal memory.
	FILE ID	Max.14 characters Enter a comment for the operator file to be written to a “Memory Stick.” *See “Specifying a character string” (page 25).*
	CAM CODE	Camera code (display only)
	DATE	Date (display only)
<SCENE FILE> F02	1	To store and read scene files (paint data): When storing a file in camera memory, specify the number for STORE and execute by ENTER. When reading, only specify the number.
	2	
	3	
	4	
	5	
	STORE	
	STANDARD	Execute by ENTER. To read the standard paint data
<REFERENCE> F03	STORE FILE	Execute by ENTER. To store the current settings of the reference file items in the reference file in internal memory.
	STANDARD	Execute by ENTER. To read the standard values in the reference file in internal memory.
	ALL PRESET	Execute by ENTER. To resume the factory-preset reference file

Page title Page No.	Item	Settings / Default
<FILE CLEAR> F04	PRESET OPERATOR	Execute by ENTER.
	10 SEC CLEAR	ON, **OFF** To activate/deactivate the function to clear the current menu item. *See "Returning a menu item to its standard value" on page 25.*
	M.S. FORMAT	Execute by ENTER. To initialize a "Memory Stick"

DIAGNOSIS Menu

This menu is only for viewing and no setting is made using this menu.

Page title Page No.	Item	Indication
<OPTICAL LEVEL> D01	CCU→CAM	GREEN, YELLOW, RED, NG, NO SIGNAL
	CAM→CCU	GREEN, YELLOW, RED, NG, NO SIGNAL
<COM STATUS> D02	CAM1	OK RM, OK EMB, - - RM, - - EMB When CAM1 SYNC OUT of <ADAPTER MODE> (M05) is set to HD SYNC, RM is displayed at the end, and when set to UNIVERSAL, EMB is displayed
	CAM2	OK RM, OK EMB, - - RM, - - EMB When CAM2 SYNC OUT of <ADAPTER MODE> (M05) is set to HD SYNC, RM is displayed at the end, and when set to UNIVERSAL, EMB is displayed
	RM	OK, - -
	CCU	OK, - -
<BOARD STATUS> D03	SY	OK, NG
	SDI	OK, NG
	DPR	OK, NG
<PLD VERSION> D04	SY	Vx.xx
	SDI	Vx.xx
	DPR	Vx.xx
<ROM VERSION> D05 (U20)	AT	Vx.xx
<SERIAL NO.> D06	MODEL	HDFA-200
	NO	Serial No.

Appendices

Notes on Use

Use and storage locations

Avoid using or storing the unit in the following places:

- Where it is subject to extremes of temperature
- In direct sunlight for extended period of time or close to heaters (Note that in summer the temperature in a car with the windows closed can reach 50 °C (122 °F)).
- Very damp or dusty places.
- Where rain is likely to reach the unit.
- Places subject to severe vibration.
- Near strong magnetic fields.
- Near transmitting stations generating strong radio waves.

Avoid violent impacts

Dropping the unit, or otherwise imparting a violent shock to it, is likely to cause it to malfunction.

Do not cover with cloth

While the unit is in operation, do not cover it with a cloth or other material. This can cause the temperature to rise, leading to a malfunction.

After use

Set the CAMERA POWER switch on the unit to the OFF position.

Care

If the body or panels of the unit become dirty, wipe them with a dry cloth. For severe dirt, use a soft cloth steeped in a small amount of neutral detergent, then wipe dry. Do not use volatile solvents such as alcohol or thinners, as these may damage the finish.

Error Messages

If a problem occurs during operation, a warning message is displayed.

Note

To display a message, set the DISPLAY switch to ON or MENU.

Message	Meaning
FAN STOP	The built-in fan is not rotating properly.
FILE ERROR	An error occurred while reading a file from a “Memory Stick.”
FILE NOT FOUND	The file you attempted to read does not exist in the “Memory Stick.”
FORMAT ERROR!	A “Memory Stick” operation was attempted with an unformatted “Memory Stick.”
MEMORY STICK ERROR	An error occurred during access to a “Memory Stick.”
MEMORY STICK LOCKED	File writing was attempted with a write-protected “Memory Stick.”
NO MEMORY STICK	A “Memory Stick” operation was attempted with no “Memory Stick” in the slot.
OTHER MODEL’S FILE	You attempted to read a file of other models having no compatibility.
SET SYSTEM CLOCK	The time/date of the internal clock have not been set.
TEMP WARNING	Internal temperature raises extremely.

Using a “Memory Stick”

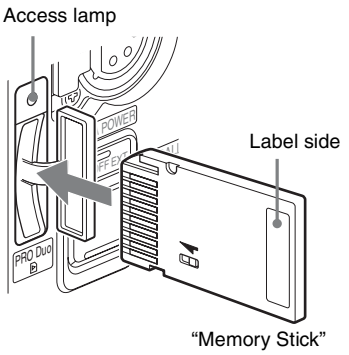
You can use “Memory Stick Duo” and “Memory Stick PRO Duo” media with the unit.
When a “Memory Stick” is inserted in the unit, the file data can be stored on the “Memory Stick,” which enables you to share data among devices.
Unit operations have been checked using “Memory Stick” media up to 16 GB.

Note

Only a “Memory Stick” of Duo size can be used with the camera.

Inserting a “Memory Stick”

Insert a “Memory Stick” with the label side facing left into the “Memory Stick Duo” slot until it clicks and the access lamp lights in red.
When the “Memory Stick” is properly set, the lamp lights in green.



Note

If it does not fit into the slot properly or if there is some resistance when you insert it, the “Memory Stick” may be turned around or upside-down. Do not force the “Memory Stick” into the slot. Confirm the direction of the notch and arrow on the “Memory Stick” before inserting the “Memory Stick,” and then try inserting it again.

Removing a “Memory Stick”

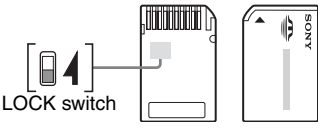
Confirm that the access lamp is not lit in red, then lightly push in the “Memory Stick” to release the lock.

Note

If the access lamp is lit in red, data is being read from or written to the “Memory Stick.” At this time, do not shake the product or subject it to shock. Do not turn off the power to the product or remove the “Memory Stick.” Doing so may damage the data.

Protecting saved data

To prevent accidental erasure of important setup data, use the LOCK switch on the “Memory Stick.”
Slide the switch upward to the write protect position.
This ensures that you cannot inadvertently overwrote data on the “Memory Stick.”



Note

When using “Memory Stick” media that does not have a LOCK switch, be careful not to inadvertently overwrite or erase your 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 you use a “Memory Stick” that has been pre-recorded, be sure that the material has been recorded in accordance with copyright and other applicable laws.

- “Memory Stick” and MEMORY STICK are trademarks of Sony Corporation.
- “Memory Stick Duo” and MEMORY STICK DUO are trademarks of Sony Corporation.
- “Memory Stick PRO Duo” and MEMORY STICK PRO DUO are trademarks of Sony Corporation.

Specifications

General	
Power requirements	240 V AC, 1.2 A (max.)
	180 V DC, 1.1 A (max.)
	12 V DC, 10 A (max.)
Operating temperature	–20°C to +45°C (–4°F to +113°F)
Storage temperature	–20°C to +60°C (–4°F to +140°F)
Mass	Approx. 3.8 kg (8 lb 6 oz) (the main unit only)
Input/output connectors	
CCU	Optical/electrical multi-connector (1)
CAM-MAIN(L) SDI IN, CAM-SUB(R) SDI IN	BNC type (1 each)
CAM-MAIN(L) REF OUT, CAM-SUB(R) REF OUT	BNC type (1 each)
SDI 1 OUT, SDI 2 OUT	BNC type (1 each)
TEST OUT	BNC type (1)
PROMPTER1/GENLOCK IN	BNC type (1), 1 Vp-p, 75 ohms
VF	20-pin (1)
AUDIO IN 1, AUDIO IN 2	XLR 3-pin, female (1 each) For MIC: –60 dBu (variable up to –20 dBu by menu or HDCU1000/1500 operation), balanced For LINE: 0 dBu, balanced
INTERCOM	XLR 5-pin, female (1 each)
DC IN	XLR 4-pin (1), 10.5 to 17 V DC
CAM-MAIN(L) DC OUT	XLR 4-pin, female (1), 10.5 to 17 V DC, 5.5 A[1)] maximum
CAM-SUB(R) DC OUT	XLR 4-pin, female (1), 10.5 to 17 V DC, 4 A[1)] maximum
DC OUT 4A max	XLR 4-pin, female (1), 10.5 to 17 V DC, 4 A[1)] maximum
DC OUT 0.5A max	4-pin (1), 10.5 to 17 V DC, 500 mA[1)] maximum
CAM-MAIN(L) REMOTE, CAM-SUB(R) REMOTE	8-pin (1 each)
REMOTE	8-pin (1)
AUX	12-pin (1)
RET CTRL	6-pin (1)
TRACKER	10-pin (1)
CRANE	12-pin (1)
Supplied accessories	
Operation manual (1)	
Cable clamp belt (1)	
Optional accessories	
HD Electronic Viewfinder HDVF-C550W (5-type, color) HDVF-C730W (6.5-type, color) HDVF-C950W (9-type, color) HDVF-EL75 (7.4-type, color)	
“Memory Stick Duo,” “Memory Stick PRO Duo”	
Related equipment	
HDCU1000/1500 HD Camera Control Unit	
HKCU-HB10/HB15 3G Fiber Transmission Unit	
HKCU1005 SDI Output Expansion Unit	
HKCU2005 3G Single Link Interface Unit	
HDC-P1 HD Multi Purpose Camera	
HDC1500R/1400R/1600R/1500/1600 HD Color Camera	
F35 Digital Cinematography Camera	
MSU-1000/1500 Master Setup Unit	
RCP-1000-series Remote Control Panel	

1) May be limited with the status of load, input *(see page 14)*

For the customers in the U.S.A., Canada, Europe, Australia, and New Zealand

Connectors for optical/electric composite cables:
- LEMO® PUW.3K.93C.TLCC96 (to the “CAMERA” connector on CCU)
- LEMO® EDW.3K.93C.TLC (to the “CCU” connector on an HDFA-200)

Caution on the optical/electric composite cable:
For connection between the camera control unit and an HDFA-200, be sure to use an optical/electric signal composite cable with the connectors specified in this manual in order to comply with the limit for EMC regulations.

Pour les utilisateurs aux Etats-Unis, au Canada, en Europe, à l’Australie, et à la Nouvelle-Zélande

Connecteurs pour les câbles optiques/électriques composites:
- LEMO® PUW.3K.93C.TLCC96 (au connecteur «CAMERA» de l’unité de commande de caméra)
- LEMO® EDW 3K.93C.TLC (au connecteur «CCU» d’une HDFA-200)

Précaution concernant le câble optique/électrique composite:
Pour la connexion entre l’unité de commande de caméra et une HDFA-200, utilisez un câble optique/électrique composite avec connecteurs spécifiés dans ce manuel pour assurer la conformité avec la réglementation EMC.

Für Kunden in USA, Kanada, Europa, Australien und Neuseeland

Anschlüsse für optische/elektrische FBAS-Kabel:

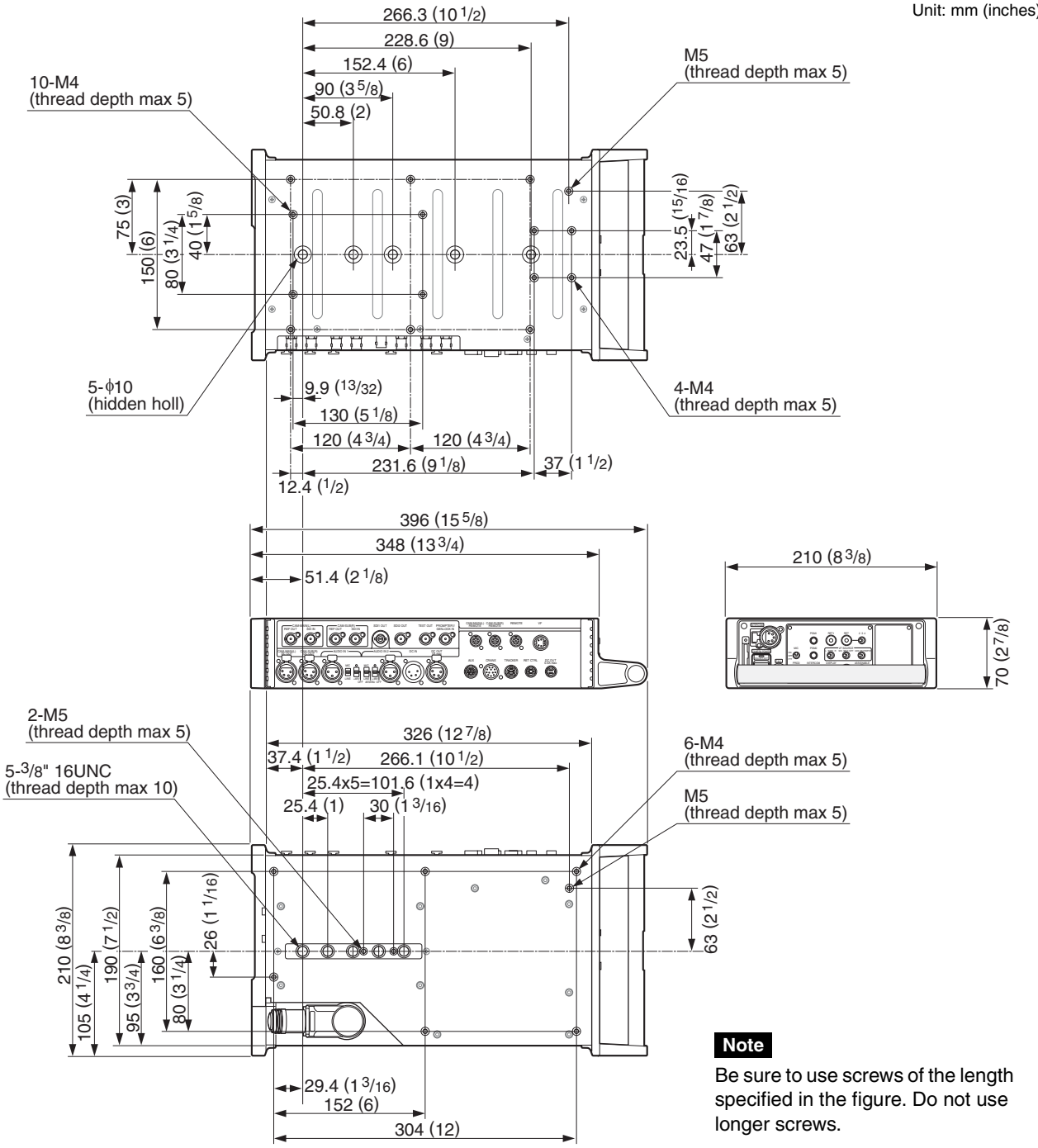
- LEMO® PUW.3K.93C.TLCC96 (an „CAMERA“-Anschluss an der Kamerasteuereinheit)
- LEMO® EDW.3K.93C.TLC (an „CCU“-Anschluss an einer HDFA-200)

Vorsichtsmaßregeln für optische/elektrische FBAS-Kabel:

Für Verbindung zwischen Kamerasteuereinheit und einer HDFA-200 verwenden Sie immer ein optisches/elektrisches FBAS-Kabel mit Steckern, wie in dieser Anleitung beschrieben, um die Grenzwerte der geltenden EMV-Vorschriften zu erfüllen.

Dimensions

Unit: mm (inches)



Note

Be sure to use screws of the length specified in the figure. Do not use longer screws.

Design and specifications are subject to change without notice.

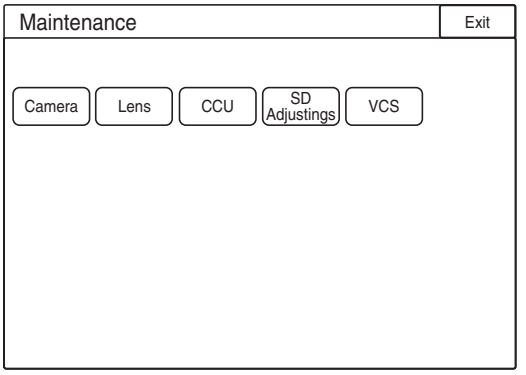
Note

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.

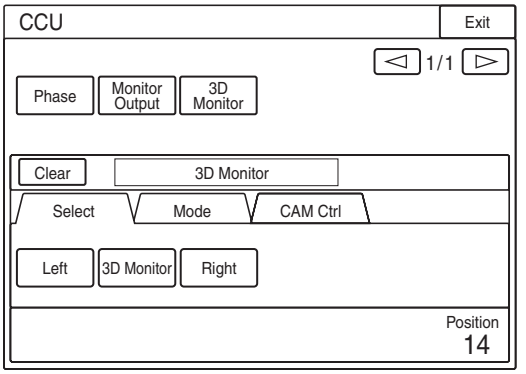
Additional Functions of an MSU-1000/1500 in 3D Operations

Operations of CCU 3D Monitor functions

1 Select CCU on the Maintenance menu screen.

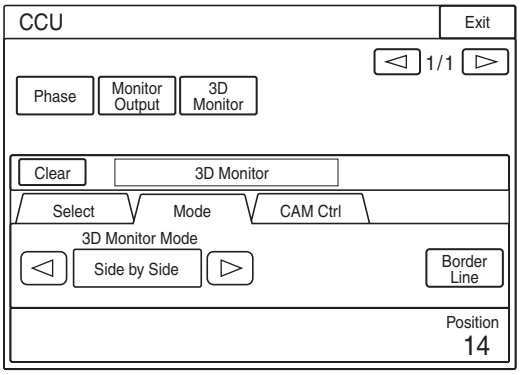


2 Select 3D Monitor.



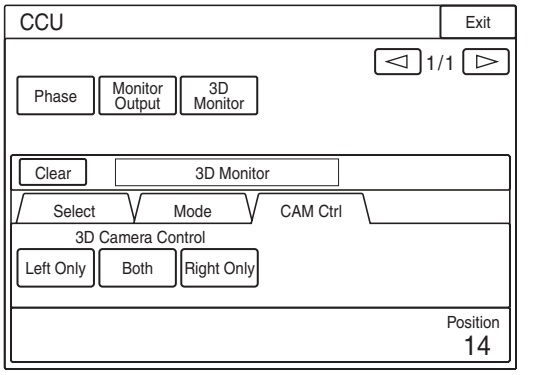
3 Select a signal to be output from the Monitor Output connector of a CCU on the Select tab.
For a CCU with an HKCU2005 3G Signal Link Interface Unit mounted, 3D Monitor can be selected.

4 Select a function to be used on the Mode tab.



5 Move the border line by pressing the Border Line if the Split or Mirror function is selected.

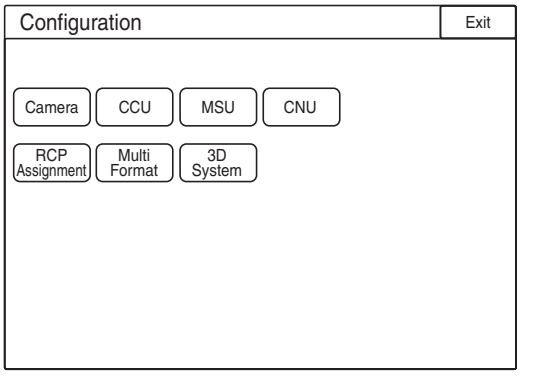
6 Select a camera to be controlled in 3D mode with the buttons of 3D Camera Control on the CAM Ctrl tab.



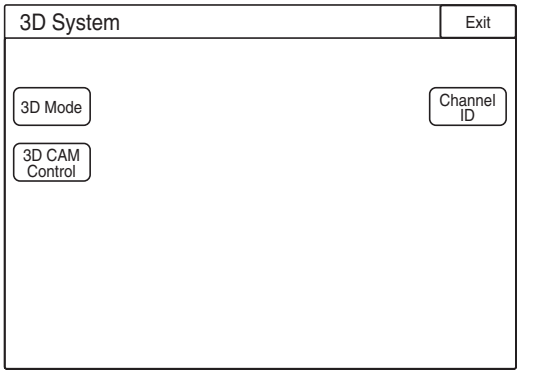
The same selection can be made on the 3D CAM Control page of the Configuration menu.

Setting the 3D Mode

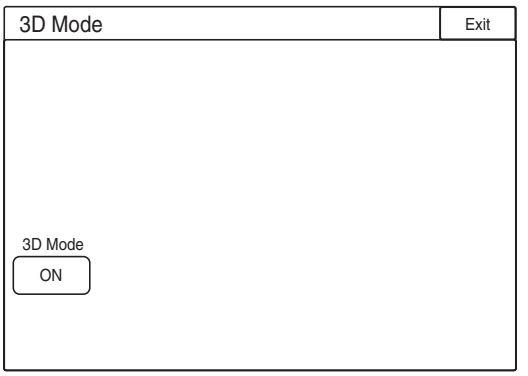
1 Select 3D System on the Configuration menu screen.



2 Select 3D Mode.



3 Set 3D Mode to ON.

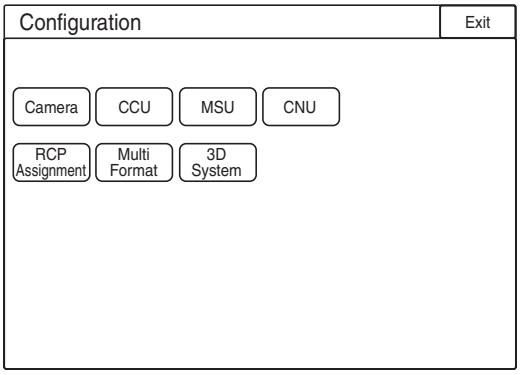


3D mode is set.

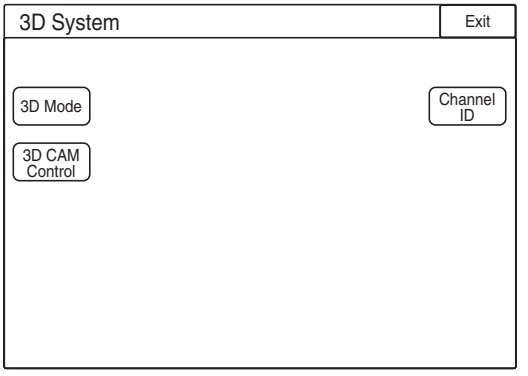
Setting the Channel ID

Channel ID is a function to display the identifier of the output signal to distinguish the two HD signals in Dual-Link or 3D-L/R connection.

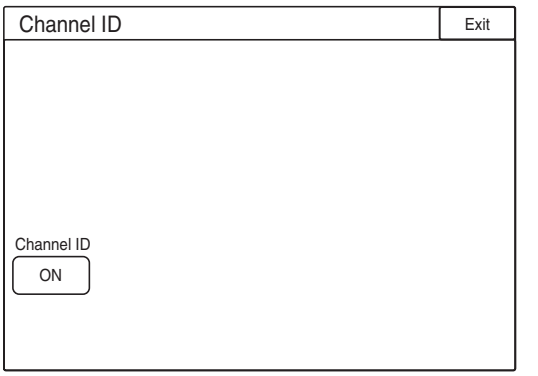
1 Select 3D System on the Configuration menu screen.



2 Select Channel ID.



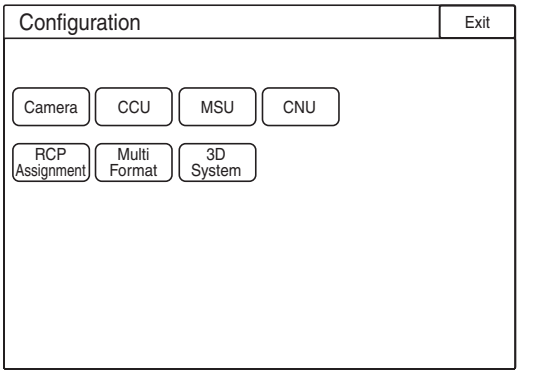
3 Set Channel ID to ON.



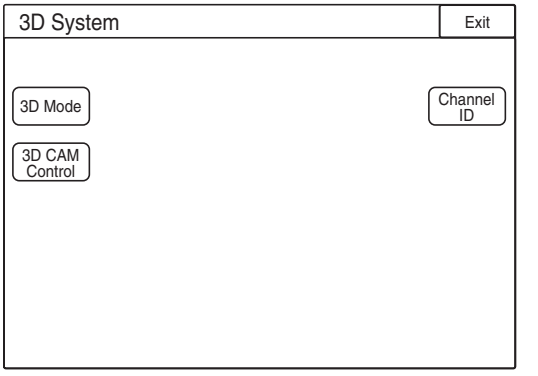
Setting the 3D Camera Control

When 3D Mode is set to ON, two cameras are normally controlled simultaneously. Some items for painting can be controlled separately to match the color tone between the two cameras. If Left Only or RIght Only is selected, specified items of the selected camera can be controlled.
The 3D Camera Control function enables setting the switches for this function on the panel.

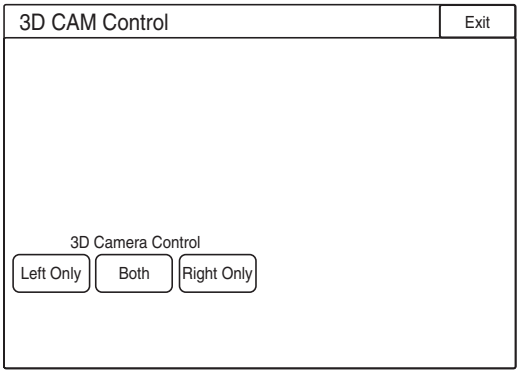
1 Select 3D System on the Configuration menu screen.



2 Select 3D CAM Control.



3 Select a camera to be controlled.



The same selection can be made with 3D Monitor on the CCU page of the Maintenance menu.

Menu Tree

OPERATION

- VF DISPLAY (01)
  - EX
  - ZOOM
    - DISP
  - FOCUS
  - ND
  - CC
  - 5600K
  - IRIS
  - GAIN
  - SHUTT
  - BATT
  - RETURN
  - TALK
  - MESSAG
- ' ! ' IND (02)
  - ND
  - CC
  - 5600K
  - SHUTT
  - FAN
  - EXT
  - FORMAT
- VF SOURCE (03)
  - CAM SEL
    - SPLIT
      - POSITION
    - MIX
    - DIFF
    - CAM-CHROMA
    - SPLIT LINE
    - MESSAGE
- VF MARKER (04)
  - MARKER
  - CENTER
  - SAFETY ZONE
  - EFFECT
  - ASPECT
    - MASK
    - SAFETY
- VF DETAIL (05)
  - VF DETAIL
    - CRISP
    - FREQUENCY
    - FAT MODE
    - FLICKER
    - AREA
    - ZOOM LINK
  - COLOR DETAIL
    - PEAK COLOR
    - CHROMA LEVEL
- FOCUS ASSIST (06)
  - INDICATOR
    - MODE
    - LEVEL
    - GAIN
    - OFFSET
  - AREA MARKER
    - SIZE
    - POSITION
    - POSITION H
    - POSITION V
- ZEBRA (07)
  - ZEBRA
  - ZEBRA1 LEVEL
    - WIDTH
  - ZEBRA2
- CURSOR (08)
  - CURSOR
    - BOX/CROSS
    - H POSITION
    - V POSITION
    - WIDTH
    - HEIGHT
- VF OUT (09)
  - VF OUT
  - RET MIX VF
  - MIX DIRECTION
  - MX VF MODE
  - MX VF LEVEL
  - VF SCAN
- SWITCH ASSIGN (10)
  - ASSIGN REAR
- HEAD SET (11)
  - INTERCOM MIC
    - LEVEL
    - POWER
    - UNBAL
- INTERCOM LEVEL (12)
  - SIDE TONE
- RECEIVE SEL1 (13)
  - INTERCOM RECEIVE SELECT
    - INTERCOM
    - ENG
    - PROD
    - PGM1
    - PGM2
    - TRACKER
- RECEIVE SEL2 (14)
  - TRACKER RECEIVE SELECT
    - INTERCOM
    - TALK
    - ENG
    - PROD
    - PGM1
    - PGM2
- OPERATOR FILE (15)
  - READ (MS→CAM)
  - WRITE (CAM→MS)
  - PRESET
  - FILE ID
  - CAM CODE
  - DATE

MAINTENANCE

- AUTO SETUP (M01)
  - AUTO BLACK
  - AUTO WHITE
  - AUTO LEVEL
  - AUTO BLACK SHADING
  - TEST
- AUTO IRIS (M02)
  - AUTO IRIS
  - WINDOW
  - IRIS LEVEL
  - APL RATIO
  - IRIS GAIN
  - IRIS CLOSE
- MIC GAIN (M03)
  - MIC1
  - MIC2
  - MIC POWER
    - MIC1
    - MIC2
- CALL/TALLY (M04)
  - CALL SETTING
    - CCU CALL
    - ADAPTER CALL
  - RELAY SETTING
    - CCU→CAM
    - ADAPTER→CAM
- ADAPTER MODE (M05)
  - 3D MODE
  - CAM1
    - REF OUT
    - COMMAND
  - CAM2
    - REF OUT
    - COMMAND
- OUTPUT FORMAT (M06)
  - CURRENT
  - ACTIVE LINE
- DOWN CONVERTER (M07)
  - OUTPUT SIGNAL
  - ASPECT
- TEST OUT (M08)
  - OUTPUT
    - (PWR SAVE)
  - VBS-OUT
    - CHARACTER
    - GAIN
    - CHROMA
    - SETUP
  - HD SYNC-OUT
    - V-PHASE
    - H-PHASE

- SDI OUT (M09)
  - SDI-1 OUT
  - SDI-2 OUT
    - (POWER SAVE)
  - CHARACTER
  - EMB AUDIO
    - (1-MIC1 2-MIC2)/(3-AES1 4-AES2)
    - (1-PGM1 2-PGM2)/(3-ENG 4-PROD)
- IMAGE INVERTER (M10)
  - (in 3D mode)
  - RIG
  - (in 2D mode)
  - H MIRROR
  - V MIRROR
  - (in 3D/2D mode)
  - V PHASE STATUS
    - CAM1 V STATUS
    - CAM2 V STATUS
- POWER SAVE (M11)
  - SDI-2 OUT
  - DOWN CONVERTER
- TRUNK (M12)
  - TRUNK
  - IF
- GENLOCK (M13)
  - REFERENCE
  - GENLOCK
    - STATUS
    - FORMAT
  - PHASE
    - V
    - HD H
    - SD H
- DATE (M14)
  - DATE/TIME
- BATTERY ALARM (M15)
  - BEFORE END
  - END
- OTHERS 1 (M16)
  - FAN MODE
  - CAM BARS
  - CAM MENU
- OTHERS 2 (M17)
  - DATE TYPE
  - FILTER WHT MEM
  - F NO. DISP

FILE

- OPERATOR FILE (F01)
  - READ (MS→CAM)
  - WRITE (CAM→MS)
  - PRESET
  - STORE PRESET FILE
  - FILE ID
  - CAM CODE
  - DATE
- SCENE FILE (F02)
  - 1/2/3/4/5
  - STORE
  - STANDARD
- REFERENCE (F03)
  - STORE FILE
  - STANDARD
    - ALL PRESET
- FILE CLEAR (F04)
  - PRESET OPERATOR
  - 10 SEC CLEAR
  - M.S. FORMAT

DIAGNOSIS

- OPTICAL LEVEL (D01)
  - CCU→CAM
  - CAM→CCU
- COM STATUS (D02)
  - CAM1
  - CAM2
  - RM
  - CCU
- BOARD STATUS (D03)
  - SY
  - SDI
  - DPR
- PLD VERSION (D04)
  - SY
  - SDI
  - DPR
- ROM VERSION (D05)
  - AT
- SERIAL NO. (D06)
  - MODEL
  - NO

产品中有害物质的名称及含量

使用环境条件：
参考使用说明书中的操作条件

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
实装基板	×	○	○	○	○	○
外壳	×	○	○	○	○	○
附属品	×	○	○	○	○	○

本表格依据SJ/T 11364 的规定编制。
○：表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。
×：表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。

W1-1

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http://www.sony.net/

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