SONY

HD CAMERA CONTROL UNIT

HSCU-300

OPERATION MANUAL English

1st Edition (Revised 1)

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.

THIS APPARATUS MUST BE EARTHED.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: THIS WARNING IS APPLICABLE FOR USA ONLY.

If used in USA, use the UL LISTED power cord specified below.
DO NOT USE ANY OTHER POWER CORD.

Plug Cap	Parallel blade with ground pin (NEMA 5-15P Configuration)
Cord	Type SJT, three 16 or 18 AWG wires
Length	Minimum 1.5 m (4 ft. 11in.), Less than 2.5 m (8 ft. 3 in.)
Rating	Minimum 10A, 125V

Using this unit at a voltage other than 120V may require the use of a different line cord or attachment plug, or both. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.

WARNING: THIS WARNING IS APPLICABLE FOR OTHER COUNTRIES.

1. Use the approved Power Cord (3-core mains lead)/ Appliance Connector/Plug with earthing-contacts that conforms to the safety regulations of each country if applicable.
2. Use the Power Cord (3-core mains lead)/Appliance Connector/Plug conforming to the proper ratings (Voltage, Ampere).

If you have questions on the use of the above Power Cord/ Appliance Connector/Plug, please consult a qualified service personnel.

For kundene i Norge

Dette utstyret kan kobles til et IT-strømfordelingssystem.

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.

For the customers in Europe

This product with the CE marking complies with both the EMC Directive and the Low Voltage Directive issued by the Commission of the European Community.
Compliance with these directives implies conformity to the following European standards:

- EN60950-1:Product Safety
- EN55103-1: Electromagnetic Interference (Emission)
- EN55103-2: Electromagnetic Susceptibility (Immunity)

This product is intended for use in the following Electromagnetic Environment: E4 (controlled EMC environment, ex. TV studio).

For the customers in Europe, Australia and New Zealand

WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

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.

This apparatus shall not be used in a residential area.

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

Table of Contents

Overview

The HSCU-300 Camera Control Unit connects to a Sony HSC-300/HXC-100[1)] HD color camera. It performs signal processing, provides an interface for external equipment, and supplies power to the camera.
The CCU features a down converter which converts HD signals[2)] from a camera to SD signals[3)], and a simplified return video up converter which converts SD signals to HD signals. It is compatible with both HD camera system and SD camera system formats, making it flexible to use.

1) An HXC-100 and HSCU-300 can be connected if both units are of version 1.10 or later.
2) HD (High Definition) signal: Name for 1125/750-line HDTV signals
3) SD (Standard Definition) signal: Name for NTSC/PAL, 525/625 component, and 525/625 composite signals

The CCU can be combined with an RCP-1000-series Remote Control Panel (optional) to form a camera control system. The CCU can also be combined with an MSU-1000/1500 Master Setup Unit (optional) over a LAN (Local Area Network) to form a multi-camera application system controlling multiple cameras.

Features

Multi-system input/output interface

The HSCU-300 is equipped with the following input and output signal connectors as standard equipment.

Video outputs

- SDI (main), 2-system (HD/SD selectable, embedded digital audio)
- SDI (monitor), 2-system (HD/SD selectable, embedded digital audio, superimposed character and marker display)
- Analog composite (VBS 2-system, PIX 1-system, WF 1-system)
- Analog component, 1-system (HD Y/Pb/Pr, HD R/G/B, SD Y/R-Y/B-Y, SD R/G/B 4-format selectable)
- Sync, 1-system (HD/SD selectable)

Video inputs

- Reference input (HD/SD selectable)
- SDI return input, 2-system (HD/SD selectable)
- VBS return input, 2-system
- VBS teleprompter input, 2-system

Note

When an HXC-100 is connected, 1-system of a VBS teleprompter input is available.

Audio input/outputs

- Microphone (analog) output, 2-system (XLR-3-pin)
- Intercom input/output, 2-system (D-sub 25-pin)
- PGM (program audio) input, 2-system (D-sub 25-pin)

Other input/outputs

- Tally (R/G)
- Microphone remote (D-sub 15-pin)
- WF (waveform monitor) remote output (D-sub 15-pin)
- WF (waveform monitor) mode output (4-pin)
- Trunk (D-sub 9-pin)
- REMOTE (8-pin)
- LAN (RJ-45, 8-pin)

External sync signals

The CCU can be locked to an external sync signal. Either an HD tri-level sync signal or an SD sync (black burst) signal can be used as the sync signal.

Digital triax transmission

The CCU and camera are connected using the industry-standard double-shielded triaxial camera cable (commonly referred to as triax). The camera and CCU are equipped with the latest Sony-developed digital transmission technology which can transmit high-resolution pictures between the camera and CCU, regardless of the cable length.

Built-in down converter

HD signals from the camera can be converted to high-resolution SD component SDI output signals using the wideband down converter. The output signal aspect ratio can be set to 4:3 edge crop, 16:9 squeeze, or letterbox. The down converted SD signal has independent image enhancement, gamma, and matrix functions that can be controlled externally.

Built-in simplified up converter

SD signal return video is displayed in the HD viewfinder using a simple up converter. The return video aspect ratio can be set to 4:3 edge crop, 16:9 squeeze, or letterbox.

Electric shock prevention

A safety function cuts the high-voltage supply from the CCU if the connection to the camera becomes unsafe.
When power is applied, low-voltage power is first supplied to the camera. After the connected camera is correctly identified using tone signal detection, the regular DC180 V high-voltage power is supplied to the camera. Power is not supplied to cameras not connected via the triax cable.
Alarm indicators are also fitted to indicate cable open-circuit and short-circuit conditions.

Wide range of audio functions

The CCU is fitted with two-channel microphone output, video signals with embedded audio, and PGM (program) audio input/output connectors. It also features an intercom system with two independent channels, and supports four-wire and RTS/Clear-Com intercom systems.

For information on support for RTS/Clear-Com systems, contact a Sony service or sales representative.

Microphone volume control

The camera's microphone volume can be controlled via the MIC REMOTE connector.

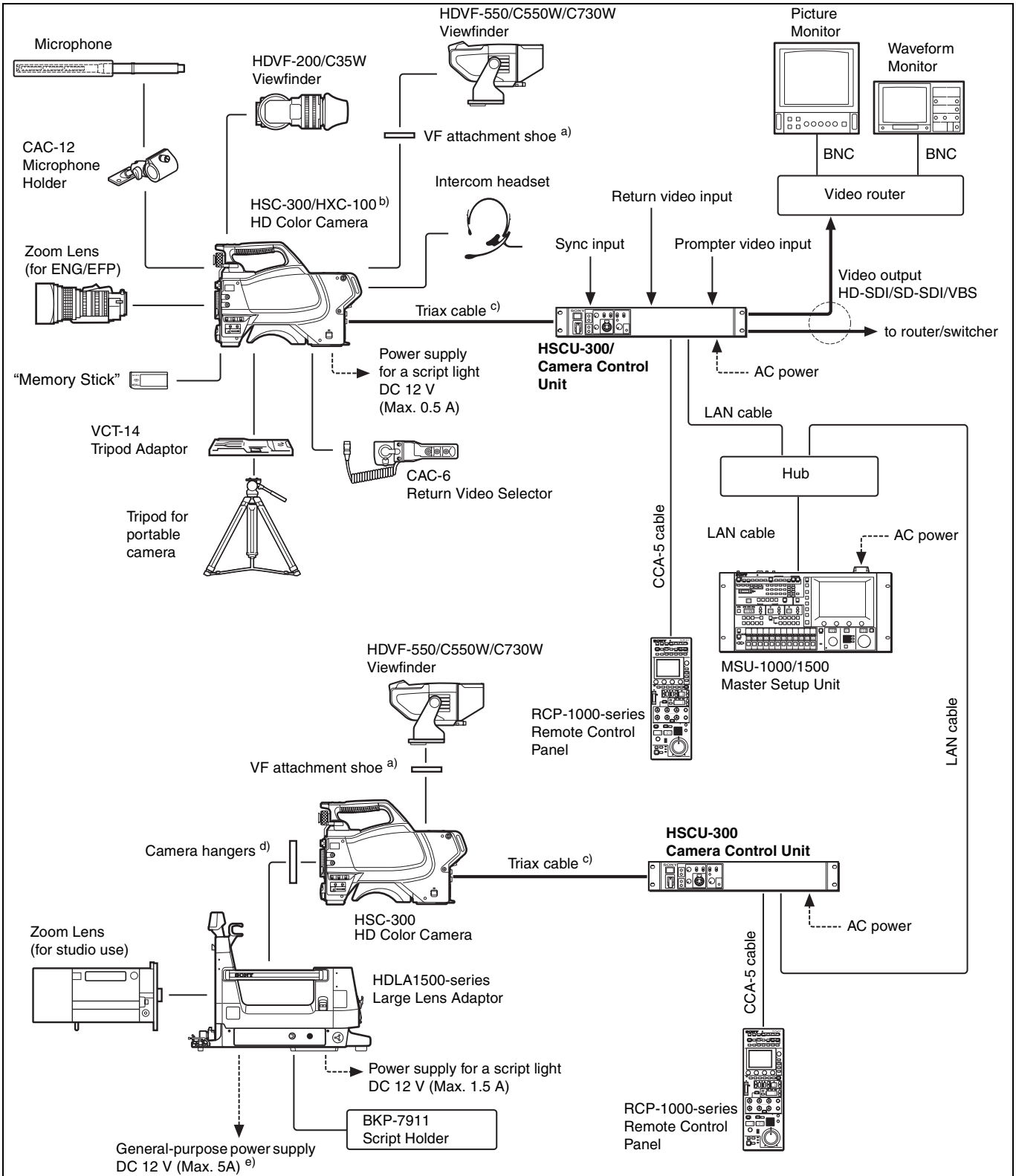
Character monitor signal output

The self-diagnosis status screens and setup menu can be output as a text character display on the video output signal. *See “Video outputs” on page 5*.

Rack mountable

The CCU can be installed in a standard EIA 19-inch rack. The height of the unit is 1.5U.

System Configuration Example



a) Supplied with the HDVF-550/C550W/C730W, Part No.: A-7612-405-E

b) An HXC-100 and HSCU-300 can be connected if both units are of version 1.10 or later.

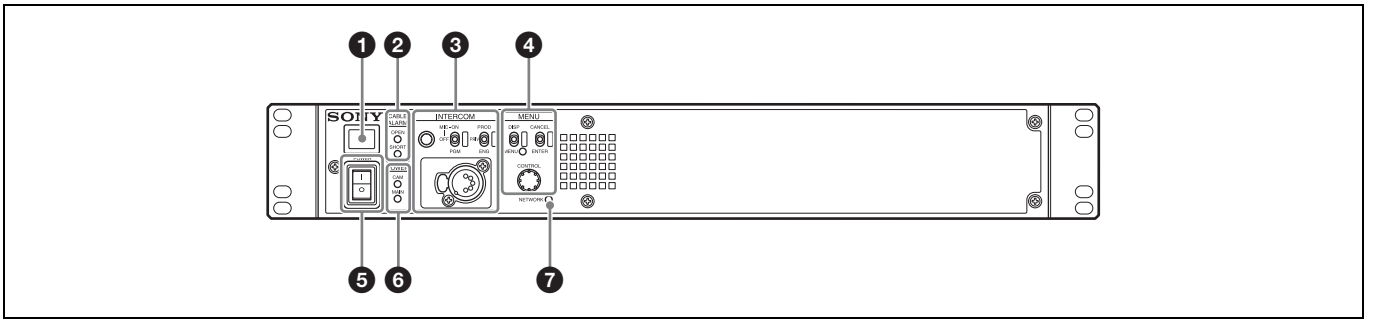
c) 900 m (2953 ft) when an HSC-300 is connected or 600 m (1969 ft) when an HXC-100 is connected at maximum and 50 m (164 ft) at minimum when using Fujikura 8.5-mm dia. cables.
For information of other cables, see "Triax transmission distances (when an HSC-300 is connected)" (page 24) or *"Triax transmission distances (when an HXC-100 is connected)" (page 24).*

d) Supplied with the HDLA1500/1505, Part No.: A-1128-405-A

e) For general-purpose DC 12 V output, the serial number must be the following or higher:
HDLA1500: 13001 or 43001, HDLA1503: 52001,
HDLA1505: 11001 or 41001 or 401001, HDLA1507: 401001

Locations and Functions of Parts

Front Panel

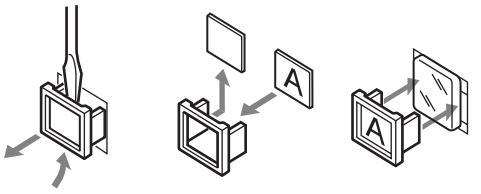


❶ Tally light

Turns on red to indicate a red tally signal is being received (such as when the picture from the camera connected to the CCU is being used). When the CALL button on the camera, the MSU-1000/1500 Master Setup Unit, or the RCP-1000-series Remote Control Panel is pressed, the light turns off if lit or turns on if not lit.

Turns on green to indicate a green tally signal is being received.

A number plate supplied with the CCU can be attached here (*see the following figure*).



❷ CABLE ALARM indicators

OPEN: Turns on when a camera is not connected (open circuit) to the CAMERA connector on the rear panel via a triax cable. While on, the CCU does not supply any power to the camera.

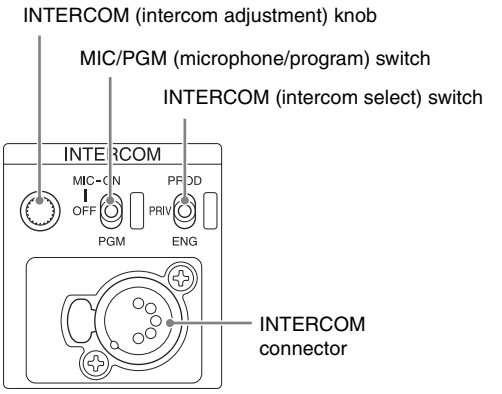
It flashes when there is a problem with the transmission between the camera and the CCU.

Note

It may also turn on when using the camera with an external DC supply.

SHORT: Turns on when there is an overcurrent condition (short circuit) on the triax cable. While on, the CCU does not supply any power to the camera.

❸ INTERCOM audio input/output and control block



- **INTERCOM (intercom adjustment) knob**

Adjusts the headset audio level.

- **MIC/PGM (microphone/program) switch**

ON: Turns the headset microphone on.

OFF: Turns the headset microphone off.

PGM: Selects program audio output. In this mode, the INTERCOM knob adjusts the headset program audio level.

- **INTERCOM (intercom select) switch**

Selects the intercom signal input/output connection source for the INTERCOM connector on the rear panel.

PROD: Connects the producer line.

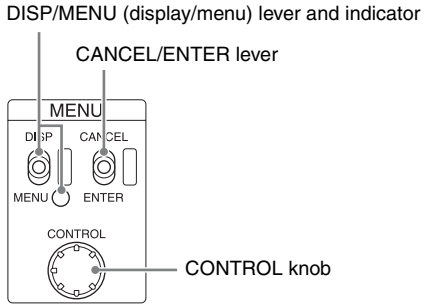
PRIV: Disconnects both the producer line and engineer line, allowing private communication between CCU and camera only.

ENG: Connects the engineer line.

- **INTERCOM connector (XLR 5-pin)**

Intercom headset connection.

❹ MENU control block



- **DISP/MENU (display/menu) lever and indicator**

Selects the status display or setup menu display. In setup menu mode, the indicator turns on.

- **CANCEL/ENTER lever**

In setup menu mode, used to cancel and enter settings.

- **CONTROL knob (rotary encoder)**

In status screen mode, used to change the displayed page. In setup menu mode, used to move the cursor on a page and to change menu settings. Pressing the CONTROL knob performs the same function as setting the CANCEL/ENTER lever to the ENTER position.

❺ POWER switch

Switches the power for the entire system on and off, including the CCU, camera, and the RCP-1000-series Remote Control Panel connected to the REMOTE connector on the rear panel. Pressing the "**I**" side turns the camera system on, and pressing the "○" side turns it off.

❻ POWER indicator

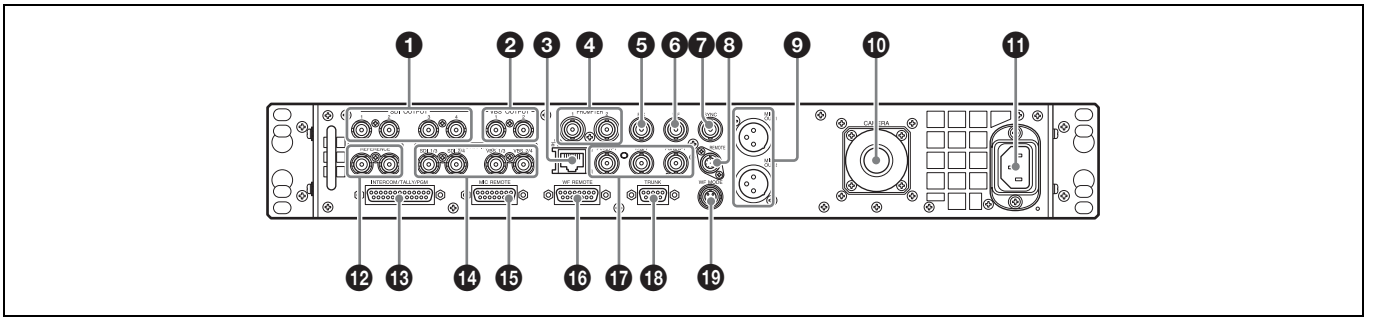
CAM: Turns on when power is supplied to the camera.
MAIN: Turns on when the CCU power supply is turned on. It flashes when there is a problem with the fan.

❼ NETWORK indicator

Displays the network system connection status.
On: Indicates that external control equipment (MSU-1000/1500 Master Setup Unit, RCP-1000-series Remote Control Panel, or other device) is connected.
Flashing: Indicates a connection problem with the external control equipment (MSU-1000/1500 Master Setup Unit, RCP-1000-series Remote Control Panel, or other device).
Off: Indicates that a LAN cable is not connected or that the network system connection parameters have not been set.

See "Network diagnostics" on page 12 and "NETWORK SETTINGS menu" on page 22.

Rear Panel



❶ SDI OUTPUT 1 to 4 connectors (BNC type)

Outputs the camera signals in HD SDI or SD SDI signal format.
The SDI OUTPUT 3 and SDI OUTPUT 4 connectors can also output signals with superimposed character or marker display.

❷ VBS OUTPUT 1, 2 (composite video signal 1, 2) connectors (BNC type)

Outputs (2-system) the camera signals in composite signal format.

❸ LAN jack (RJ-45, 8-pin)

Connects to a LAN hub (10BASE-T/100BASE-TX), when using a network connection, via a LAN cable (shielded type, category 5 or higher).

CAUTION

- For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to this port. Follow the instructions for this port.
- When you connect the LAN cable of the unit to peripheral device, use a shielded-type cable to prevent malfunction due to radiation noise.

❹ PROMPTER (teleprompter input 1, 2) connectors (BNC type)

Inputs the VBS signals for the teleprompter.

Note

When an HXC-100 is connected, only the PROMPTER 1 connector is enabled.

❺ PIX (picture monitor output) connector (BNC type)

Outputs a video signal for a picture monitor. It can also output a signal with superimposed character display.

❻ WF (waveform monitor output) connector (BNC type)

Outputs a video signal for a waveform monitor.

❼ SYNC (sync signal output) connector

Outputs a sync signal for connection to the sync signal input connector of a waveform monitor or picture monitor.

❽ REMOTE connector (8-pin)

Transmits and receives control signals from a MSU-1000/1500 Master Setup Unit, CNU-700 Camera Command Network Unit, or RCP-1000-series Remote Control Panel via a CCA-5 cable (optional). It also supplies power when connected to an RCP-1000-series Remote Control Panel.

⑨ MIC OUT1, MIC OUT2 (microphone output 1, 2) connectors (XLR 3-pin)
Outputs the camera microphone signals.

⑩ CAMERA connector (triax connector)
Connects to the camera via a triax cable. The camera sends all video and audio signals to the CCU, and the CCU sends control signals, return video and audio signals, as well as power, to the camera over a single triax cable.

⑪ AC supply input connector
Connects to the AC supply via the specified power cord (optional). A plug holder (optional) can be used to secure the power cord to the CCU.

⑫ REFERENCE (reference input) connectors (BNC type)
Inputs an HD tri-level reference sync signal or SD reference sync signal (black burst signal) on either of the two connectors. The input signal is output from the other connector as-is (loop-through output). If the loop-through output is not used, connect it to a 75 Ω terminator.

⑬ INTERCOM/TALLY/PGM (intercom/tally/program audio) connector (D-sub 25-pin)
Transmits and receives the various intercom, tally, and program audio signals. It connects to the intercom/tally/program audio connector of the intercom system.

⑭ RETURN INPUT (return video input) connector block

• SDI 1/3, 2/4 (SDI return video 1/3, 2/4 input) connectors (BNC type)

• VBS 1/3, 2/4 (VBS return video 1/3, 2/4 input) connectors (BNC type)
Inputs the HD SDI return video signals and SD SDI return video signals (2-system), and the VBS return video signals (2-system).
The SDI 1/3 and 2/4 connectors can also be set to function as an HD/SD SDI teleprompter input.

Note

When an HXC-100 is connected, an SDI teleprompter input cannot be used.

For information on the return video signal combinations, see "Return Signal Combinations" on page 25.

⑮ MIC REMOTE (microphone remote) connector (D-sub 15-pin)
Connects to an external control device, such as an audio mixer, which can select the camera microphone gain to one of five values (20/30/40/50/60 dB) in response to the audio conditions when shooting.
This connector can also output a red tally signal and green tally signal.

⑯ WF REMOTE (waveform monitor remote) connector (D-sub 15-pin)
Outputs signals for a waveform monitor when controlling the waveform monitor display remotely from the MSU-1000/1500 Master Setup Unit or RCP-1000-series Remote Control Panel. It connects to a recall-type waveform monitor.

For connection details, refer to the waveform monitor manual.

⑰ Pr/R/R-Y, Y/G/Y, Pb/B/B-Y (component signals) connectors (BNC type)
Outputs the HD component signals, SD component signals, HD RGB signals, or SD RGB signals from the corresponding connectors.

⑱ TRUNK connector (D-sub 9-pin, RS-422A standard)
Connects to an external device to provide a communication path via the CCU between that device and another external device connected to the REMOTE connector on the camera.

⑲ WF MODE (waveform monitor mode output) connector (4-pin)
Connects to a waveform monitor and is used when monitoring each of the 3 R/G/B waveforms simultaneously in sequential mode.
When the SEQ button on the MSU-1000/1500 Master Setup Unit or RCP-1000-series Remote Control Panel is pressed, the video signal output from the WF connector changes to a sequence signal.

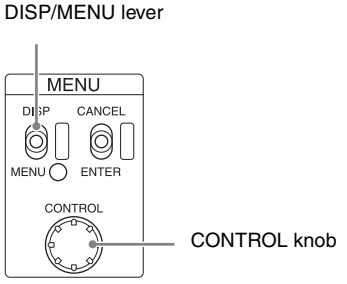
Status Display

The CCU system status can be monitored using a picture monitor connected to the PIX output.

For information on monitoring and changing settings, see “Setup Menu” on page 14.

Displaying the Status Screen

The status screen is controlled using the knob and levers in the MENU control block on the front panel.



To display the status screen

Set the DISP/MENU lever to the DISP position.
The most recently viewed status screen page is displayed (when first powered on, the camera settings page is displayed).
Turning the CONTROL knob changes the displayed page.

To exit the status screen display

In status screen display mode, set the DISP/MENU lever to the DISP position.

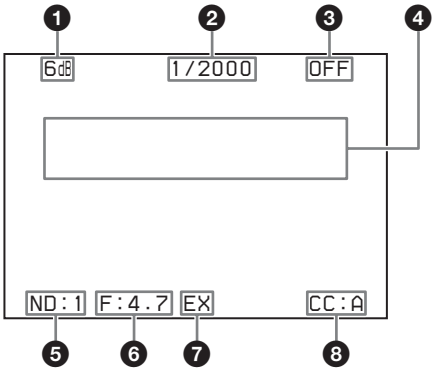
Status Display Screen

The following information is displayed on the status display screen.

- Camera settings
- System status
- CCU hardware diagnostics
- Camera system diagnostics
- Network diagnostics
- CCU SY board diagnostics
- CCU DPR board diagnostics
- Camera hardware diagnostics
- ROM version information for major components

Camera settings

Page 1



❶ Master gain value
Video output signal gain (dB units)

❷ Shutter speed/Clear scan frequency
Shutter speed value. When ECS is on, the clear scan frequency is displayed.

❸ Shutter/ECS
Shutter/ECS on/off indicator

❹ Camera auto control information area
Top: Displays the Auto Setup category and execution status
Bottom: Displays the execution item

❺ ND filter
Current ND filter selection

❻ F-stop value
Lens f-stop value (iris value)

❼ EX (lens extender)
Lens extender indicator

❽ CC filter
Current CC filter selection

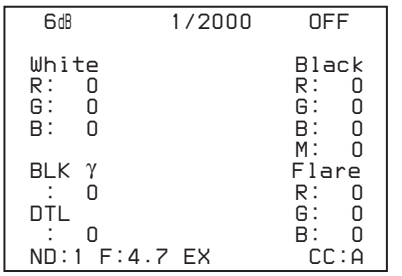
Note

When an HXC-100 is conncted, a.“-” mark is displayed for the CC filter.

Notes

- Items that are turned off using the <DISPLAY> page settings of the CCU CONFIGURATION menu are not displayed.
- A “-” mark is displayed for each item when a camera is not connected.

Page 2



White: White balance R/G/B value
Black: Black balance R/G/B/Master value
BLK γ: Black gamma value

Flare: Flare balance R/G/B value
DTL: Detail level

Note

The items along the bottom edge are common to both pages 1 and 2.

System status

```
*System Status*      1/12

HSC-300     1080/59.94I
Reference:Free Lock
SDI-1/2   :1080/59.94I
SDI-3/4   :525/59.94I
Component:SD YCD
Return1   :1080/59.94I
Return2   :525/59.94I
Return3   :NTSC
Return4   :NTSC
```

The camera model name and signal format are displayed at the top of the page (a "-" mark is displayed instead when a camera is not connected).
Reference: Reference signal format and lock status
SDI-1/2: SDI OUTPUT 1/2 connector output format setting
SDI-3/4: SDI OUTPUT 3/4 connector output format setting
Component: Component signal connector output format setting
Return1: Return 1 return signal format setting
Return2: Return 2 return signal format setting
Return3: Return 3 return signal format setting
Return4: Return 4 return signal format setting

CCU hardware diagnostics

```
*Diagnosis*          2/12


  DPR   :OK    SDI   :OK
  SY    :OK    VIF   :OK
```

The camera Auto Setup category, and the corresponding setup item and status are displayed at the top of the page.
DPR: DPR board status
SDI: SDI board status
SY: SY board status
VIF: VIF board status

Camera system diagnostics

Page 1

```
*System Diag 1/3*   3/12

 TRIAX Type  Digital
       Cable Connect
       Comp. Auto
       Step  4

Fan Power OK
Timer     96H
CCU Power AC  OK

SerialNo    100001
```

TRIAX Type: Triax transmission mode
TRIAX Cable: CCU triax cable connection status
TRIAX Comp.: Triax cable compensation mode selection
TRIAX Step: Triax cable compensation step (internal circuit step display)
Fan Power: CCU power supply fan status
Timer: Elapsed time since power-on
CCU Power: CCU power supply type and status
SerialNo: CCU serial number

Page 2

```
*System Diag 2/3*   4/12

  CAMERA  Cable Connect
          Data  OK
          Power OK
          Tone  Detect
  REMOTE  Cable Connect
          Data  OK
          Power OK
```

CAMERA Cable: Camera cable connection status
CAMERA Data: Camera data transmission status
CAMERA Power: Camera power supply status
CAMERA Tone: Camera identification tone detection status
REMOTE Cable: Remote device cable connection status
REMOTE Data: Remote device data transmission status
REMOTE Power: Remote device power supply status

Page 3

```
*System Diag 3/3*   5/12

 Intercom
   CCU         Private
   CAMERA CH1 ENG
              MIC OFF
          CH2 ENG
              MIC OFF

 CAM MIC Gain Local
          CH1 60dB
          CH2 60dB
```

Intercom CCU: CCU intercom selection
Intercom CAMERA CH1: Camera intercom channel 1 selection and microphone status
Intercom CAMERA CH2: Camera intercom channel 2 selection and microphone status
CAM MIC Gain: Camera microphone circuit control selection
CAM MIC CH1: Camera microphone channel 1 amplifier gain
CAM MIC CH2: Camera microphone channel 2 amplifier gain

Network diagnostics

Page 1

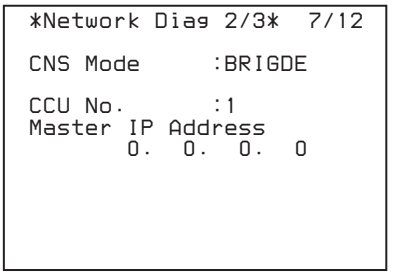
```
*Network Diag 1/3*  6/12

MacAddress:000000-000000
Auto Negotiation: ON
Auto MDI/MDIX   : ON
Connection Speed:100M
Duplex Mode     :HALF
MDI/MDIX        :MDIX

Link Status     :OK
```

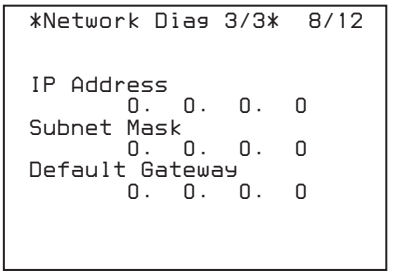
MacAddress: MAC address stored in CCU EEPROM
Auto Negotiation: Auto negotiation setting
Auto MDI/MDIX: Auto-MDIX setting
Connection Speed: Connection speed setting
Duplex Mode: Communication method setting
MDI/MDIX: Communications port wiring configuration selection
Link Status: Network connection status

Page 2



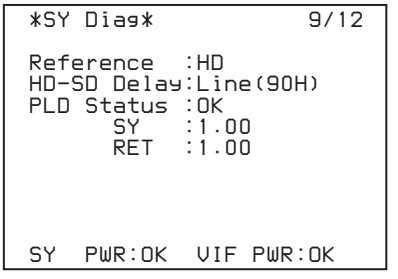
CNS Mode: REMOTE and LAN connectors mode setting
CCU No.: CCU number setting
Master IP Address: MCS-mode master device IP address

Page 3



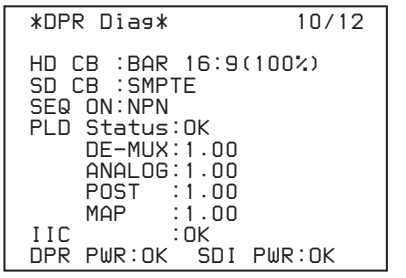
IP Address: CCU IP address setting
Subnet Mask: CCU subnet mask setting
Default Gateway: CCU default gateway setting

CCU SY board diagnostics



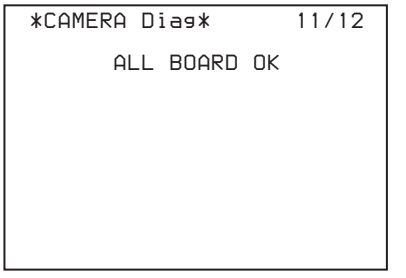
Reference: Reference signal setting
HD-SD Delay: HD to SD delay setting
PLD Status: PLD status
PLD SY: SY-PLD version
PLD RET: RET-PLD version
SY PWR: SY board power supply status
VIF PWR: VIF board power supply status

CCU DPR board diagnostics



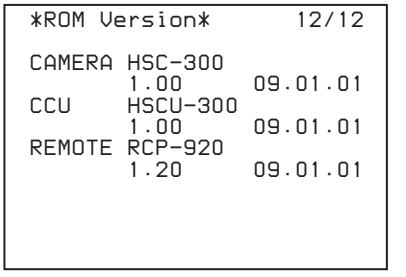
HD CB: HD color bar setting
SD CB: SD color bar setting
SEQ ON: SEQ ON polarity
PLD Status: PLD status
PLD DE-MUX: DEMUX-PLD version
PLD ANALOG: ANALOG-PLD version
PLD POST: POST-PLD version
PLD MAP: MAP-PLD version
IIC: IIC bus control status
DPR PWR: DPR board power supply status
SDI PWR: SDI board power supply status

Camera hardware diagnostics



Displays the camera hardware status.

ROM Version Information



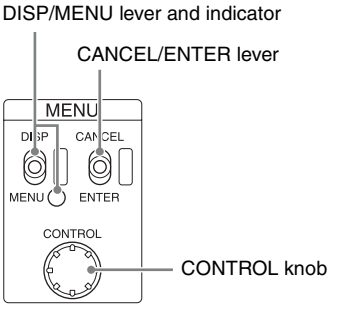
CAMERA: Camera model name and ROM version
CCU: CCU model name and ROM version
REMOTE: REMOTE connector device model name and ROM version

Setup Menu

The CCU system and peripheral settings can be modified using a picture monitor connected to the PIX output.

Changing Menu Item Settings

The menu screen is controlled using the knob and levers in the MENU control block on the front panel.
Setting the CANCEL/ENTER lever to the ENTER position and pressing the CONTROL knob perform the same function.



To display a menu page

Set the DISP/MENU lever to the MENU position.
When first powered on, the CCU MENU page is displayed.

To display the CCU MENU page

In menu display mode, turn the CONTROL knob to move the ➡ arrow to TOP in the upper right corner of the menu page, then press the CONTROL knob.
The CCU MENU showing the menu configuration is displayed.

```
** CCU MENU **

➔SYSTEM OPERATION
 CCU CONFIGURATION
 NETWORK SETTINGS
```

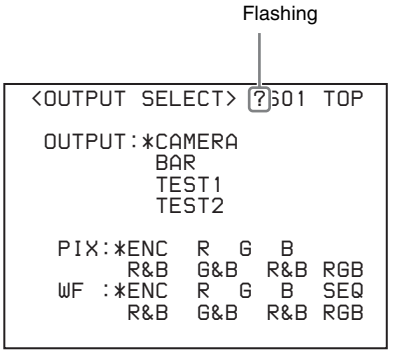
Menu name	Description
SYSTEM OPERATION	Input/output signal format and system-related settings
CCU CONFIGURATION	CCU configuration settings
NETWORK SETTINGS	Network-related settings

To select an item in the CCU MENU

Turn the CONTROL knob to move the ➡ arrow up/down to the desired menu item, then press the CONTROL knob.
The most recently viewed page in the selected menu is displayed.

To change the displayed page

1 Turn the CONTROL knob to move the ➡ arrow to the page number, then press the CONTROL knob.
The ➡ arrow changes to a flashing ? question mark.



2 Turn the CONTROL knob to change the displayed page to the desired page, then press the CONTROL knob.
The ? question mark changes back to the ➡ arrow. Items on the page can now be selected and changed.

To change a menu item setting

If a ? question mark is displayed beside the page number, press the CONTROL knob to restore the ➡ arrow. Items on the page can now be selected and changed.

1 Turn the CONTROL knob to move the ➡ arrow to the desired item, then press the CONTROL knob.
The ➡ arrow changes to a flashing ? question mark.

2 Turn the CONTROL knob to change the setting.

To cancel a changed setting
Set the CANCEL/ENTER lever to the CANCEL position before pressing the CONTROL knob. The item is restored to its current setting.

To suspend menu changes
Set the DISP/MENU lever to the MENU position to exit the menu screen.
The DISP/MENU lever can be set to the MENU position again to restart the operation.

3 Press the CONTROL knob.
The ? question mark changes back to the ➡ arrow, and the item setting is registered.

4 Repeat steps 1 to 3 to change other settings on the same page.

To change a menu item with multiple input fields

Some menus have items with multiple input fields.
Moving the ➡ arrow to an item with multiple input fields and pressing the CONTROL knob displays the input fields. Each field needs to be set separately. Turning the CONTROL knob moves the cursor between input fields.
The following menu item has multiple input fields:

- NETWORK SETTINGS menu → <CNS SETTINGS> page → MASTER IP ADDRESS

1 **Turn the CONTROL knob to move the ➡ arrow to the desired item, then press the CONTROL knob.**
The ➡ arrow changes to a flashing ∗ asterisk. The input fields are displayed. A second ➡ arrow is displayed for the input fields.

2 **Turn the CONTROL knob to move the ➡ arrow to the desired input field, then press the CONTROL knob.**
The ➡ arrow changes to a flashing ? question mark.

3 **Turn the CONTROL knob to change the setting.**

To cancel a changed input field setting
Set the CANCEL/ENTER lever to the CANCEL position before pressing the CONTROL knob. The field is restored to its current setting. Other changed input fields are not restored to their previous setting.

To suspend menu changes
Set the DISP/MENU lever to the MENU position to exit the menu screen.
The DISP/MENU lever can be set to the MENU position again to restart the operation.

4 **Press the CONTROL knob.**
The ? question mark changes back to the ➡ arrow, and the input field setting is registered.

5 **Repeat steps 2 to 4 to change other input fields.**

6 **Turn the CONTROL knob to move the ➡ arrow to END, then press the CONTROL knob.**
The ∗ asterisk changes back to the ➡ arrow, and all item input field settings are registered.

To cancel all changed item settings
Turn the CONTROL knob to move the ➡ arrow to ESC, then press the CONTROL knob.
The ∗ asterisk changes back to the ➡ arrow, and all changes are discarded.

To enter a character string

Some menu items require a character string input.
Moving the ➡ arrow to an item with a character string input and pressing the CONTROL knob displays a rectangular cursor and a list of selectable characters. Turning the CONTROL knob moves the cursor between characters.
The following menu item has character strings:

- CCU CONFIGURATION menu → <BAR CHARACTER> page → BAR CHARACTER

1 **Move the text cursor to the input position, then press the CONTROL knob.**
A second cursor is displayed in the character list.

2 **Turn the CONTROL knob to move the cursor to the desired character, then press the CONTROL knob.**
Repeat steps **1** and **2** to enter other characters.
- Select INS to insert a space character at the cursor position.
- Select DEL to delete the character at the cursor position.
- Select RET to return to step **1** without changing the string.
- Entering the maximum number of characters (up to the right edge) moves the cursor to ESC on the lower right of the character list.

3 **Turn the CONTROL knob to move the cursor to END, then press the CONTROL knob.**
The new input string is registered.

To cancel the character string setting
Turn the CONTROL knob to move the cursor to ESC, then press the CONTROL knob.

To exit the menu display

In menu display mode, set the DISP/MENU lever to the MENU position.

Menu List

Note

The following conventions are used in the menu list table.
Settings column values (e.g. **ON**, **OFF**, **0**): Default settings
ENTER to execute: Press the CONTROL knob or move the CANCEL/ENTER lever to the ENTER position to execute.

SYSTEM OPERATION menu

Page name Page No.	Item	Settings
<OUTPUT SELECT> S01	OUTPUT Output signal selection	**CAMERA**, BAR, TEST1, TEST2 TEST1 and TEST2 are not selectable if there is no communication with the camera.
	PIX PIX connector output signal selection	**ENC**, R, G, B, R&G, G&B, R&B, RGB
	WF WF connector output signal selection	**ENC**, R, G, B, SEQ, R&G, G&B, R&B, RGB
<GENLOCK PHASE> S02	REFERENCE	(NONE), (EXT IN) Reference signal input status (read only)
	GENLOCK External reference signal lock mode selection, lock status, and signal format	HD, **SD**
		(OK), (NG) External reference signal lock status (read only) (OK): Locked (NG): Unlocked
		External reference signal format Displayed only when a reference signal is present (read only)
	Reference signal lock phase adjustments	
	H STEP	When GENLOCK is HD: –3.01 to 3.45 µs **0.00** When GENLOCK is SD: –8.29 to 9.48 µs **0.00**
	COARSE	–99 to 99 **0**
	SC PHASE	**0** to 359
	V PHASE	**0** to 7
	SYNC OUT SYNC connector output signal selection	HD SYNC, **SD SYNC**
<MULTI FORMAT> S03 **Note** FREQUENCY or CAMERA FORMAT mode setting changes take effect only after the CCU power supply is turned off and then on again.	FREQUENCY Operating frequency selection	
	HD	1.001, 1.000 **Note** The default setting is different among the sales areas. United States and Canada: 1.001 Other areas: 1.000
	SD	(525 NTSC), (625 PAL) (Read only) When FREQUENCY HD is 1.001: (525 NTSC) When FREQUENCY HD is 1.000: (625 PAL) **Note** The default setting is different among the sales areas. United States and Canada: (525 NTSC) Other areas: (625 PAL)
	CAMERA FORMAT Transmission format selection	When FREQUENCY HD is 1.001: 1080/59.94i, 720/59.94P When FREQUENCY HD is 1.000: 1080/50i, 720/50P **Note** The default setting is different among the sales areas. United States and Canada: 1080/59.94i Other areas: 1080/50i

Page name Page No.	Item	Settings
<OUTPUT FORMAT> S04	SLOT NO	
	1-1&2 SDI OUTPUT 1/2 connector output format selection Sequence of format options: 1: HD 2: SD	When CAMERA FORMAT is 1080/59.94i: 1080/59.94i, 525/59.94i When CAMERA FORMAT is 720/59.94P: 720/59.94P, 525/59.94i When CAMERA FORMAT is 1080/50i: 1080/50i, 625/50i When CAMERA FORMAT is 720/50P: 720/50P, 625/50i **Note** The default setting is different among the sales areas. United States and Canada: 1080/59.94i Other areas: 1080/50i
	3&4 SDI OUTPUT 3/4 connector output format selection Sequence of format options: 1: HD 2: SD	When CAMERA FORMAT is 1080/59.94i: M1080/59.94i, M525/59.94i When CAMERA FORMAT is 720/59.94P: M720/59.94P, M525/59.94i When CAMERA FORMAT is 1080/50i: M1080/50i, M625/50i When CAMERA FORMAT is 720/50P: M720/50P, M625/50i **Note** The default setting is different among the sales areas. United States and Canada: M525/59.94i Other areas: M625/50i
	COMPONENT Component signal connector output format selection	HD RGB, HD YPbPr, SD RGB, **SD YCD**
	HD-SD DELAY HD signal to SD signal delay mode selection	When CAMERA FORMAT is 1080 system format: **0-Delay**, Line (90H), Frame (1F) When CAMERA FORMAT is 720 system format: 0-Delay, Line (120H), Frame (2F)
		When GENLOCK is HD: **0** to –71.1 µs When GENLOCK is SD: **0** to –51.7 µs

Page name Page No.	Item	Settings
<SD ASPECT> S05	SD ASPECT SD output aspect selection	SQUEEZE, **EDGE CROP**, LETTER BOX
	SD LB SEL LETTER BOX aspect ratio selection	**16:9**, 15:9, 14:9, 13:9
	H POSITION Horizontal position setting	–99 to 99, (–99) to (99) **0** ( ) displayed when SD ASPECT is SQUEEZE or LETTER BOX (read only)
	CENTER Horizontal centering selection	**ON**, OFF, (ON), (OFF) ( ) displayed when SD ASPECT is SQUEEZE or LETTER BOX (read only)
	V POSITION Vertical position setting	–99 to 99, (–99) to (99) **(0)** ( ) displayed when SD ASPECT is SQUEEZE or EDGE CROP (read only)
	CENTER Vertical centering selection	ON, OFF, **(ON)**, (OFF) ( ) displayed when SD ASPECT is SQUEEZE or EDGE CROP (read only)
	H INTERP Down converter horizontal filter selection	**A**, B, C, D, E
	V INTERP Down converter vertical filter selection	**A**, B, C, D, E

Page name Page No.	Item	Settings
<RETURN FORMAT> S06 The RET1 to 4 signal outputs support 16 combinations. *See "Return Signal Combinations" on page 25.*	RET1 Return 1 signal format, aspect, and letterbox aspect ratio selection Sequence of format options: 1: HD SDI 2: SD SDI 3: VBS	When CAMERA FORMAT is 1080/59.94i: **1080/59.94i**, 525/59.94i, NTSC When CAMERA FORMAT is 720/59.94P: 720/59.94P, 525/59.94i, NTSC When CAMERA FORMAT is 1080/50i: 1080/50i, 625/50i, PAL When CAMERA FORMAT is 720/50P: 720/50P, 625/50i, PAL
		SQUEEZE, EDGE CROP, LETTER BOX Not displayed for HD SDI signals
		16:9, 15:9, 14:9, 13:9 Not displayed for HD SDI signals
	RET2 Return 2 signal format, aspect, and letterbox aspect ratio selection Sequence of format options: 1: HD SDI 2: SD SDI 3: VBS	When CAMERA FORMAT is 1080/59.94i: **1080/59.94i**, 525/59.94i, NTSC When CAMERA FORMAT is 720/59.94P: 720/59.94P, 525/59.94i, NTSC When CAMERA FORMAT is 1080/50i: 1080/50i, 625/50i, PAL When CAMERA FORMAT is 720/50P: 720/50P, 625/50i, PAL
		SQUEEZE, EDGE CROP, LETTER BOX Not displayed for HD SDI signals
		16:9, 15:9, 14:9, 13:9 Not displayed for HD SDI signals
	RET3 Return 3 signal format, aspect, and letterbox aspect ratio selection Sequence of format options: 1: HD SDI 2: SD SDI 3: VBS	When CAMERA FORMAT is 1080/59.94i: 1080/59.94i, 525/59.94i, **NTSC** When CAMERA FORMAT is 720/59.94P: 720/59.94P, 525/59.94i, NTSC When CAMERA FORMAT is 1080/50i: 1080/50i, 625/50i, PAL When CAMERA FORMAT is 720/50P: 720/50P, 625/50i, PAL
		SQUEEZE, EDGE CROP, LETTER BOX Not displayed for HD SDI signals
		16:9, 15:9, 14:9, 13:9 Not displayed for HD SDI signals

Page name Page No.	Item	Settings
<RETURN FORMAT> S06 The RET1 to 4 signal outputs support 16 combinations. *See "Return Signal Combinations" on page 25.*	RET4 Return 4 signal format, aspect, and letterbox aspect ratio selection Sequence of format options: 1: HD SDI 2: SD SDI 3: VBS	When CAMERA FORMAT is 1080/59.94i: 1080/59.94i, 525/59.94i, **NTSC** When CAMERA FORMAT is 720/59.94P: 720/59.94P, 525/59.94i, NTSC When CAMERA FORMAT is 1080/50i: 1080/50i, 625/50i, PAL When CAMERA FORMAT is 720/50P: 720/50P, 625/50i, PAL
		SQUEEZE, EDGE CROP, LETTER BOX Not displayed for HD SDI signals
		16:9, 15:9, 14:9, 13:9 Not displayed for HD SDI signals
	SD RET ASPECT SD return signal aspect selection	AUTO, **MANUAL** AUTO: Automatically follows the SD output aspect setting MANUAL: Set manually, independent of SD output aspect setting

CCU CONFIGURATION menu

Page name Page No.	Item	Settings
<COLOR BAR> C01	HD BAR	
	HD output color bar settings	
	SEL	**BAR 16:9 (100%)**, BAR 16:9 (75%), SMPTE 16:9 (BLACK), SMPTE 16:9 (–I/Q), BAR 4:3 (100%), BAR 4:3 (75%), SMPTE 4:3 (BLACK), SMPTE 4:3 (–I/Q), MF-ARIB (75%), MF-ARIB (100%), MF-ARIB (+I), MF-SMPTE (–I,Q), MF-SMPTE (75%,Q), MF-SMPTE (100%,Q), MF-SMPTE (+I,Q), HD-CUSTOM, SDI CHECK FIELD, Y -RAMP, Y/C-RAMP, HD-CUSTOM2
	MF CB	**MODIFY**, EVEN
	SLOPE	**WIDE**, NARROW
	SD BAR SD output color bar setting	For NTSC: **SMPTE**, EIA, FULL, 95%, NTSC100%, Y/C-RAMP, Y -RAMP, DISABLE For PAL: **SMPTE**, EIA, EBU, 95%, PAL100%, Y/C-RAMP, Y -RAMP, DISABLE DISABLE: Down conversion output of HD color bar signal
	BAR CHARA Character superimposed on color bar signal	ON, **OFF**
	GRAY	**ON**, OFF ON: Gray screen output when camera power supply is off OFF: Color bar signal output when camera power supply is off
<BAR CHARACTER> C02	BAR CHARACTER	Settings for strings 1 to 11 that are superimposed on the color bar signal
	<ALL CLEAR>	ENTER to execute Execute to clear all character strings
<MONITOR 1> C03	CHARACTER	
	WHITE LEVEL	0.0 to 107.0% **71.5**
	BLACK LEVEL	**0.0** to 107.0%
	PIX CHARACTER	
	WHITE LEVEL	**75.0** to 107.0%
	BLACK LEVEL	**0.0** to 25.0%

Page name Page No.	Item	Settings
<MONITOR 2> C04	LEVEL GATE	---, 1&2, 1, 2, **OFF** ---: Displayed when camera not connected, video output not set to CAMERA, or video output is set to CAMERA and GATE MARKER is ON (read only)
	Y LEVEL1	0 to 108% **49** **61**
	Level gate 1 minimum and maximum detection levels and zebra range settings	–99 to 99 **–25**
	Y LEVEL2	0 to 108% **74** **108**
	Level gate 2 minimum and maximum detection levels and zebra range settings	–99 to 99 **–25**
	GATE MARKER Gate signal display on/off and signal level setting	---, ON, **OFF** ---: Displayed when camera not connected (read only)
		–99 to 99 **0**
	MODULATION 4:3 aspect ratio mask function on/off when EDGE CROP is ON, and mask video level setting	---, ON, **OFF** ---: Displayed when camera not connected (read only)
		–99 to 99 **0**
	MARKER Marker signal on/off and superimposed signal selection	ON, **OFF** **4:3**, 13:9, 14:9, EU VISTA, VISTA, CINEMA, FOLLOW DC

Page name Page No.	Item	Settings
<MIC/AUDIO> C05	CAM MIC GAIN	(REMOTE), (LOCAL) (REMOTE): MIC REMOTE source (LOCAL): Not MIC REMOTE source
	CH1	---, 20, 30, 40, 50, **60** dB ---: Displayed when camera not connected (read only)
	CH2	---, 20, 30, 40, 50, **60** dB ---: Displayed when camera not connected (read only)
	MIC REMOTE MIC REMOTE gain control method	**MIC 1&2**, MIC 1.2 MIC 1&2: MIC 1, 2 common gain control MIC 1.2: MIC 1, 2 independent gain control
	MIC OUT	
	DELAY MIC OUT 1,2 delay setting	**0** to 3328 Fs
	MIC1 LEVEL	–20, **0** dBu
	MIC2 LEVEL	–20, **0** dBu
<INCOM/PGM> C06	SYSTEM INTERFACE	
	ENGINEER Engineer line intercom system selection	CLEAR COM, RTS, **(4W)** (4W): Displayed when the internal hardware switch is set to 4-Wire (read only)
	PRODUCER Producer line intercom system selection	CLEAR COM, RTS, **(4W)** (4W): Displayed when the internal hardware switch is set to 4-Wire (read only)
	PGM1 LEVEL	–20, **0**, +4 dBu
	PGM2 LEVEL	–20, **0**, +4 dBu

Page name Page No.	Item	Settings
<FRONT INCOM> C07	CCU front panel MIC/PGM switch position (read only)	(MIC ON), (OFF), (PGM ON)
	CCU front panel INTERCOM switch position (read only)	(PRIVATE), (PROD), (ENG)
	INCOM MIC Headset microphone type connected to INTERCOM on the front panel	CARBON, ECM, **DYNAMIC** CARBON: Carbon microphone (power supply, 20 dB gain) ECM: Electret condenser microphone (power supply, 40 dB gain) DYNAMIC: Dynamic microphone (no power supply, 60 dB gain)
	MIC TYPE Headset microphone type connected to INTERCOM on the front panel	BALANCE, **UNBALANCE** BALANCE: Balanced microphone UNBALANCE: Unbalanced microphone
	MIC GAIN Input gain setting	–6dB, **0dB**, +6dB
	SIDE TONE	0 to 99 **50**
	PGM MIX	**OFF**, INCOM+PGM, L-INCOM/R-PGM
	PGM SEL	**PGM1**, PGM2, PGM1+PGM2
	PGM1 LVL	0 to 99 **50**
	PGM2 LVL	0 to 99 **50**

Page name Page No.	Item	Settings
<PROMPTER> C08	MODE Video resolution mode switch	**NORMAL**, LOW LATENCY NORMAL: Color picture transmitted as-is in standard resolution with delay of approximately 5 frames LOW LATENCY: SD B&W picture transmitted as low resolution simplified images on the VBS Y line only with delay less than 1 frame
	TRANSFER	**VBS**, SDI, (VBS Y Only) VBS: VBS signal from PROMPTER connector sent to camera as teleprompter SDI: Digital signal from RETURN INPUT connector sent to camera as teleprompter (disabled when an HXC-100 is connected) (VBS Y Only): Displayed when MODE is LOW LATENCY (read only)
	INPUT HD SDI/SD SDI switch Displayed when TRANSFER is set to SDI Disabled when an HXC-100 is connected	**RET SDI1**, RET SDI2 RET SDI1: HD/SD determined by settings assigned to RETURN INPUT SDI 1/3 connector RET SDI2: HD/SD determined by settings assigned to RETURN INPUT SDI 2/4 connector
<VIDEO SETUP> C09	SETUP	ON, **OFF**, -- --: Displayed when format is PAL (read only)
	Q FILTER Q FILTER bandwidth setting	**NARROW**, WIDE, -- --: Displayed when format is PAL (read only)
	SD G/Y SYNC SD RGB component signal Gch-SYNC or SD YCD component signal Ych-SYNC on/off	**ON**, OFF
	WF SYNC WF signal SYNC on/off	**ON**, OFF

Page name Page No.	Item	Settings
<VIDEO ADJUST> C10	VBS	
	LEVEL	–99 to 99 **0**
	CHROMA	–99 to 99 **0**
	PIX	
	LEVEL	–99 to 99 **0**
	CHROMA	–99 to 99 **0**
	WF	
	LEVEL	–99 to 99 **0**
	CHROMA	–99 to 99 **0**
	G/Y LEVEL	–99 to 99 **0**
	B/B-Y LEVEL	–99 to 99 **0**
	R/R-Y LEVEL	–99 to 99 **0**
<MENU SETTINGS> C11	RESUME In menu mode, resume display of previously displayed page function	**ON**, OFF
	RE DIRECTION CONTROL knob operating mode settings	
	CATEGORY	**STD**, RVS STD: CONTROL knob clockwise rotation moves the CCU MENU ➡ arrow down RVS: CONTROL knob counterclockwise rotation moves the CCU MENU ➡ arrow down
	PAGE	**STD**, RVS STD: CONTROL knob clockwise rotation displays the next page in the menu RVS: CONTROL knob counterclockwise rotation displays the next page in the menu
	ITEM	**STD**, RVS STD: CONTROL knob clockwise rotation moves the ➡ arrow down to the next item on the page RVS: CONTROL knob counterclockwise rotation moves the ➡ arrow down to the next item on the page
	DATA	**STD**, RVS STD: CONTROL knob clockwise rotation selects the next data option RVS: CONTROL knob counterclockwise rotation selects the next data option

Page name Page No.	Item	Settings
<DISPLAY> C12 Camera messages and switch settings on/off. Displayed on the camera diagnostics screen.	MESSAGE	**ALL**, WARNING, OFF ALL: Displays all messages WARNING: Displays system warning messages and menu control messages OFF: Displays only menu control messages
	ALARM JUMP In menu mode, jump to display page if an error occurs function	ON, **OFF**
	MASTER GAIN	**ON**, OFF
	ECS/SHUTTER	**ON**, OFF
	ND FILTER	**ON**, OFF
	CC FILTER	**ON**, OFF
	IRIS	**ON**, OFF
	EXTENDER	**ON**, OFF
<DATE> C13	DATE/TIME Date and time settings	20YY/MM/DD hh:mm Time displayed in 24-hour format
	TIME ZONE Time zone setting	hh:mm –11h59m to +11h59m
<OTHERS> C14	REAR PREVIEW REMOTE device preview operation switching	**MOMENTARY**, TOGGLE MOMENTARY: Display preview while PREVIEW button on REMOTE device is pressed TOGGLE: Toggle preview on/off when the PREVIEW button on REMOTE device is pressed
	CAM POWER REMOTE	**NORMAL**, BACKUP NORMAL: When CCU power is applied, power is supplied to camera BACKUP: When CCU power is applied, camera supply remains in state when CCU power was last turned off.

NETWORK SETTINGS menu

Page name Page No.	Item	Settings
<TCP/IP SETTING> N01	IP ADDRESS	**0.0.0.0** to 255.255.255.255
	SUBNET MASK	**0.0.0.0** to 255.255.255.255
	DEFAULT GATEWAY	**0.0.0.0** to 255.255.255.255
	SET	ENTER to execute A “SET OK?” message is displayed. Press ENTER again to confirm the change.
<LAN SETTINGS> N02	AUTO NEGOTIATION	**ON**, OFF
	AUTO MDI/MDIX	**ON**, OFF
	CONNECTION SPEED	10M, **100M**
	DUPLEX MODE	HALF, **FULL**
	MDI/MDIX	**MDI**, MDIX
	LINK CONDITION	(DOWN), (UP) (Read only)
	SET	ENTER to execute A “SET OK?” message is displayed. Press ENTER again to confirm the change.

Page name Page No.	Item	Settings
<CNS SETTINGS> N03	CNS MODE Network connection mode selection	**LEGACY**, BRIDGE, MCS LEGACY: External controller connected using CCA-5 cable only BRIDGE: External controller connected using point-to-point LAN cable MCS: Multi-camera system configuration of multiple network-capable devices. Requires 1 MSU-1000/1500 Master Setup Unit in the system as master device
	CCU NO	Default: **0** When CNS MODE is LEGACY or BRIDGE: 1 to 96, A to Z When CNS MODE is MCS: 1 to 24
	MASTER IP ADDRESS	**0.0.0.0** to 255.255.255.255
	SET	ENTER to execute A “SET OK?” message is displayed. Press ENTER again to confirm the change.
<NETWORK RESET> N04	ALL RESET	ENTER to execute A “NET SETTINGS RESET OK?” message is displayed. Press ENTER again to reset NETWORK SETTINGS menu items to factory default values.

Appendix

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 (operating temperature: +5 to +40 °C (41 to 104 °F)). 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 POWER switch on the CCU 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.

Digital Triax Transmission

Digital transmission between camera and CCU with powerful error correction function built-in. However, some errors, for example errors due to external noise in long-distance transmission, may be corrected by partial image interpolation of images in frame store.

In digital triax transmission, the following video delay in transmission may occur.

- The video delay in transmission between the camera and the CCU is approximately 9 to 12 ms.
- A delay of about 1 frame occurs on the viewfinder display if a camera image is sent back from the CCU to the camera as a return signal.
- A delay of about 5 frames occurs on the teleprompter video in standard mode (standard mode or low-latency mode using simplified images can be selected on the CCU).
- An appropriate delay is applied to the MIC 1 and 2 audio signals from the CCU to match the video delay.
- A certain time is required for the video signal transmitted between the camera and the CCU to stabilize after power is applied. This is not a malfunction.

Triax transmission distances (when an HSC-300 is connected)

The maximum and minimum transmission distances allowed for triax cable connections are shown in the table below. The distances may vary according to the conditions, such as the total power requirements (including the power supply to the camera from the CCU) and cable degradation.

Allowable transmission range when using triax cables with the following characteristics:

Attenuation: 3.8 to 68.4 dB at 100 MHz (including the connector loss)

Cable (for example)		Max. distance[1)]	Min. distance
Fujikura	8.5 mm dia.	900 m (2953 ft.)[2)]	50 m (164 ft.)
Fujikura	14.5 mm dia.	1800 m (5906 ft.)	100 m (328 ft.)
Belden 9232	13.2 mm dia.	1300 m (4265 ft.)	75 m (246 ft.)

1) If the transmission distance exceeds approximately 7/9 of the maximum transmission distance, the teleprompter transmitted image quality starts to deteriorate.

2) The maximum distance is 650 m (2133 ft) when the total power for the lens, viewfinder and utility outputs is between 100 and 120 W.

Triax transmission distances (when an HXC-100 is connected)

The maximum and minimum transmission distances allowed for triax cable connection are shown in the table below. The distances may vary according to the conditions, such as cable degradation.

Allowable transmission range when using triax cables with the following characteristics:

Attenuation: 3.8 to 45.6 dB at 100 MHz (including the connector loss)

Cable (for example)		Max. distance	Min. distance
Fujikura	8.5-mm dia.	600 m (1969 ft)	50 m (164 ft)
Fujikura	14.5-mm dia.	1200 m (3937 ft)	100 m (328 ft)
Belden 9232	13.2-mm dia	850 m (2789 ft)	75 m (246 ft)

Error Messages

When an error is detected in the CCU or the camera, the ALARM indicator turns on and an error message is displayed on the CCU.

Error message	Indication
CCU: GEN LOCK NG	External reference sync error
CCU: DPR NG	Front DPR board power supply, PLD error
CCU: SDI NG	Rear SDI board power supply error
CCU: PS FAN NG	Power supply block fan error
CCU: PS CABLE SHORT	CAMERA connector triax cable short circuit error
CCU: PS CABLE OPEN	CAMERA connector triax cable open circuit error

Error message	Indication
CCU: PS RCP PWR SUPPLY NG	Remote control panel (connected to REMOTE connector) power supply error
CCU: VIF NG	Rear VIF board power supply error
CCU: SY NG	Front SY board power supply, PLD error
CCU:RX WARNING	Transmission error between camera and CCU

Return Signal Combinations

The return signals are grouped into the following 16 combinations. The number of the return signal (RET 1 to 4) on the RETURN INPUT connectors is set on the <RETURN FORMAT> page in the SYSTEM OPERATION menu.

SDI 1/3	SDI 2/4	VBS 1/3	VBS 2/4
RET1 HD SDI	RET2 HD SDI	RET3 VBS	RET4 VBS
RET1 HD SDI	RET2 SD SDI	RET3 VBS	RET4 VBS
RET1 SD SDI	RET2 HD SDI	RET3 VBS	RET4 VBS
RET1 SD SDI	RET2 SD SDI	RET3 VBS	RET4 VBS
RET1 HD SDI	RET4 HD SDI	RET3 VBS	RET2 VBS
RET1 HD SDI	RET4 SD SDI	RET3 VBS	RET2 VBS
RET1 SD SDI	RET4 HD SDI	RET3 VBS	RET2 VBS
RET1 SD SDI	RET4 SD SDI	RET3 VBS	RET2 VBS
RET3 HD SDI	RET2 HD SDI	RET1 VBS	RET4 VBS
RET3 HD SDI	RET2 SD SDI	RET1 VBS	RET4 VBS
RET3 SD SDI	RET2 HD SDI	RET1 VBS	RET4 VBS
RET3 SD SDI	RET2 SD SDI	RET1 VBS	RET4 VBS
RET3 HD SDI	RET4 HD SDI	RET1 VBS	RET2 VBS
RET3 HD SDI	RET4 SD SDI	RET1 VBS	RET2 VBS
RET3 SD SDI	RET4 HD SDI	RET1 VBS	RET2 VBS
RET3 SD SDI	RET4 SD SDI	RET1 VBS	RET2 VBS

License Declarations

The CCU teleprompter video circuit uses MPEG-2 technology.

MPEG-2 Video Patent Portfolio License

ANY USE OF THIS PRODUCT OTHER THAN CONSUMER PERSONAL USE IN ANY MANNER THAT COMPLIES WITH THE MPEG-2 STANDARD FOR ENCODING VIDEO INFORMATION FOR PACKAGED MEDIA IS EXPRESSLY PROHIBITED WITHOUT A LICENSE UNDER APPLICABLE PATENTS IN THE MPEG-2 PATENT PORTFOLIO, WHICH LICENSE IS AVAILABLE FROM MPEG LA, L.L.C., 250 STEELE STREET, SUITE 300, DENVER, COLORADO 80206.

“PACKAGED MEDIA” means any storage media storing MPEG-2 video information such as DVD movie which are sold/distributed to general consumers. Disc replicators or sellers of the PACKAGED MEDIA need to obtain licenses for their own business from MPEG LA. Please contact MPEG LA for any further information. MPEG LA. L.L.C., 250 STEELE STREET, SUITE 300, DENVER, COLORADO 80206
http://www.mpegla.com

Specifications

HSCU-300

General	
Power supply	AC 100 to 240 V, 50/60 Hz
Current consumption	4.5 A (max)
Peak inrush current	(1) Power ON, current probe method: 43 A (240 V) (2) Hot switching inrush current, measured in accordance with European standard EN55103-1: 8 A (230 V)
Operating temperature	5 to 40 °C (41 to 104 °F)
Storage temperature	–20 to +60 °C (–4 to +140 °F)
Weight	Approx. 8.3 kg (18 lb 5 oz)
Input/output connectors	
CAMERA	Triax (1) United States and Canada: Kings type Other areas: Fischer type
INTERCOM	XLR 5-pin (1)
INTERCOM/TALLY/PGM	D-sub 25-pin, female (1) • INCOM (PROD/ENG), 4W/RTS/CC, 0 dBu • TALLY (R, G) • PGM 2 systems, –20/0/+4 dBu
REMOTE	8-pin multiconnector (1)
TRUNK	D-sub 9-pin, female (1), RS-422A 1 system
LAN	8-pin (1)
Input connectors	
AC IN	(1), AC 100 to 240 V
SERIAL RETURN INPUT	BNC type (2) HD SDI: SMPTE 292M, 0.8 Vp-p, 75 Ω, 1.485/1.4835 Gbps bit rate SD SDI: SMPTE 259M, 270 Mbps bit rate
VBS RETURN INPUT	BNC type (2), 1.0 Vp-p, 75 Ω
REFERENCE INPUT	BNC type (2), loop-through output HD: SMPTE 274M, tri-level sync, 0.6 Vp-p, 75 Ω SD: Black burst (NTSC: 0.286 Vp-p, 75 Ω; PAL: 0.3 Vp-p, 75Ω)
PROMPTER INPUT	BNC type (2), VBS signal, 1.0 Vp-p, 75 Ω, 2 systems
MIC REMOTE	D-sub 15-pin, female (1) (JAE DA-C1-J10 series recommended)
Output connectors	
SDI OUT	BNC type (2) HD SDI: SMTPE 292M, 0.8 Vp-p, 75 Ω, 1.485/1.4835 Gbps bit rate SD SDI: SMPTE 259M, 0.8 Vp-p, 75 Ω, 270 Mbps bit rate HD SDI/SD SDI selectable

SDI OUT (MONITOR)	BNC type (2) HD SDI: SMTPE 292M, 0.8 Vp-p, 75 Ω, 1.485/1.4835 Gbps bit rate SD SDI: SMPTE 259M, 0.8 Vp-p, 75 Ω, 270 Mbps bit rate HD SDI/SD SDI selectable
Pr/R/R-Y, Y/G/Y, Pb/B/B-Y	BNC type (3)
	• HD component video Y (100% white): 0.7 Vp-p Pr/Pb (75% color bar): 0.7 Vp-p, 75 Ω
	• HD RGB video R/G/B (100% white): 0.7 Vp-p, 75 Ω
	• SD RGB video R/G/B (100% white): 0.7 Vp-p, 75 Ω
	• SD component video Y (100% white): 0.714 Vp-p Pr/Pb (75% color bar): 0.756 Vp-p, 75 Ω
VBS OUT	BNC type (2), VBS 1.0 Vp-p, 75 Ω
PIX OUT	BNC type (1), VBS/R/G/B (VBS 1.0 Vp-p, 75 Ω)
WF OUT	BNC type (1), VBS/R/G/B/SEQ (VBS 1.0 Vp-p, 75 Ω)
SYNC OUT	BNC type (1) HD: BTA-S001A, tri-level sync, 0.6 Vp-p, 75 Ω SD: composite sync, 0.3 Vp-p, 75 Ω HD SYNC/SD SYNC selectable
MIC OUT	XLR 3-pin, male (2), 0/–20 dBu
WF REMOTE	D-sub 15-pin, female (1) (JAE DA-C1-J10 series recommended)
WF MODE	4-pin (1)

Supplied accessories

Number plates (1 set)

Operation manual (1)

CD-ROM (1)

Optional accessories

United States and Canada: Plug holder B (2-990-242-01)

Other areas: Plug holder C (3-613-640-01)

United States and Canada: Power cord set (1-551-812-XX)

Other areas: Power cord set (1-782-929-XX)

CCA-5-3 (3 m), CCA-5-10 (10 m) connection cables

Extension board

Maintenance manual

Related equipment

HD Color Camera

HSC-300

HXC-100

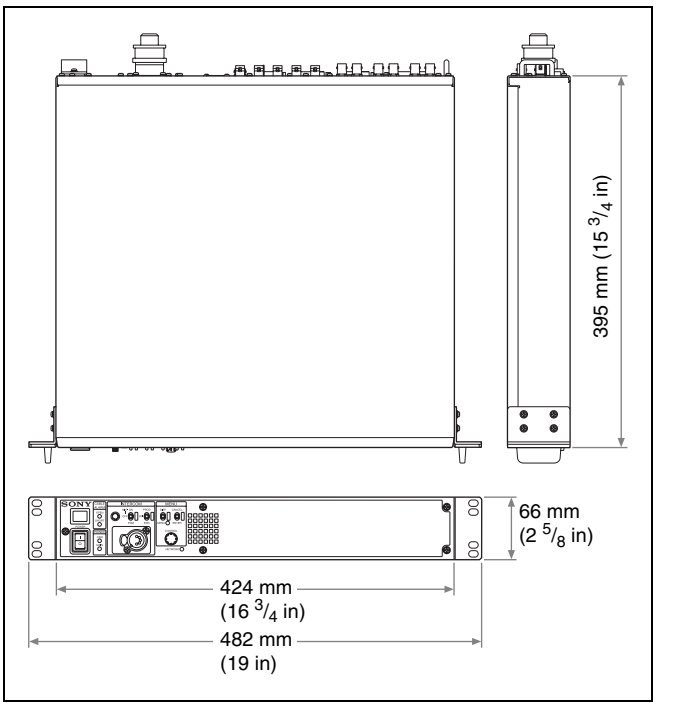
RCP-1000-series Remote Control Panel

MSU-1000/1500 Master Setup Unit

VCS-700 Video Selector

CNU-700 Camera Command Network Unit

Dimensions



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.

Sony Corporation

HSCU-300 (UC/CE)
4-140-410-**02** (1)

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