SONY

HD CAMERA CONTROL UNIT

HDCU1700

3G/HD SDI OUTPUT EXPANSION UNIT

HKCU2007

SD ENCODER UNIT

HKCU1001

MULTI INTERFACE UNIT

HKCU1003

Digital HDVS

OPERATION MANUAL English

1st Edition

4439357010

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

For the HDCU1700

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. 11 in.), less than 2.5 m (8 ft. 3 in.)
Rating	Minimum 10 A, 125 V

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.

This HD Camera Control Unit is classified as a CLASS 1 LASER PRODUCT.

Dieses HD-Kamera-Steuergerät ist als LASERPRODUKT DER KLASSE 1 eingestuft.

Tämä HD-kameraohjausyksikkö on luokiteltu 1. LUOKAN LASERTUOTTEEKSI.

Den här kontrollenheten för HD-kamera 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.

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 the EMC Directive issued by the Commission of the European Community.
Compliance with this directive implies conformity to the following European standards:

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

This product is intended for use in the following Electromagnetic 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, 108-0075 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 the 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

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.

CET APPAREIL DOIT ÊTRE RELIÉ À LA TERRE.

AVERTISSEMENT

1. Utilisez un cordon d'alimentation (câble secteur à 3 fils)/fiche femelle/fiche mâle avec des contacts de mise à la terre conformes à la réglementation de sécurité locale applicable.
2. Utilisez un cordon d'alimentation (câble secteur à 3 fils)/fiche femelle/fiche mâle avec des caractéristiques nominales (tension, ampérage) appropriées.

Pour toute question sur l'utilisation du cordon d'alimentation/ fiche femelle/fiche mâle ci-dessus, consultez un technicien du service après-vente qualifié.

Pour les clients au Canada

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

Pour les clients en Europe

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

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

Ce produit est prévu pour être utilisé dans l'environnement électromagnétique suivant: E4 (environnement EMC contrôlé, ex. studio de télévision).

Pour les clients en Europe, Australie et Nouvelle-Zélande

AVERTISSEMENT

Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

Pour les clients en Europe

Le fabricant de ce produit est Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japon.
Le représentant autorisé pour EMC et la sécurité des produits est Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327

Stuttgart, Allemagne. Pour toute question concernant le service ou la garantie, veuillez consulter les adresses indiquées dans les documents de service ou de garantie séparés.

Ne pas utiliser cet appareil dans une zone résidentielle.

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.

DIESES GERÄT MUSS GEERDET WERDEN.

WARNUNG

1. Verwenden Sie ein geprüftes Netzkabel (3-adriges Stromkabel)/einen geprüften Geräteanschluss/einen geprüften Stecker mit Schutzkontakten entsprechend den Sicherheitsvorschriften, die im betreffenden Land gelten.
2. Verwenden Sie ein Netzkabel (3-adriges Stromkabel)/ einen Geräteanschluss/einen Stecker mit den geeigneten Anschlusswerten (Volt, Ampere).

Wenn Sie Fragen zur Verwendung von Netzkabel/ Geräteanschluss/Stecker haben, wenden Sie sich bitte an qualifiziertes Kundendienstpersonal.

Für Kunden in Europa

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

- EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)
- EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit)

Für die folgende elektromagnetische Umgebung: E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

Für Kunden in Europa, Australien und Neuseeland

WARNUNG

Dies ist eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

Für Kunden in Europa

Der Hersteller dieses Produkts ist Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan.
Der autorisierte Repräsentant für EMV und Produktsicherheit ist Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Deutschland. Bei jeglichen Angelegenheiten in Bezug auf Kundendienst oder Garantie wenden Sie sich bitte an die in den separaten Kundendienst- oder Garantiedokumenten aufgeführten Anschriften.

Dieser Apparat darf nicht im Wohnbereich verwendet werden.

For the HKCU1001/HKCU1003

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 with the CE marking complies with the EMC Directive issued by the Commission of the European Community.
Compliance with this directive implies conformity to the following European standards:

- EN55103-1: Electromagnetic Interference(Emission)

• EN55103-2: Electromagnetic Susceptibility(Immunity)
This product is intended for use in the following Electromagnetic Environments: E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors), E4 (controlled EMC environment, ex. TV studio).

Pour les clients en Europe

Ce produit portant la marque CE est conforme à la Directive sur la compatibilité électromagnétique (EMC) émise par la Commission de la Communauté européenne.
La conformité à cette directive implique la conformité aux normes européennes suivantes :
• EN55103-1 : Interférences électromagnétiques (émission)
• EN55103-2 : Sensibilité électromagnétique (immunité)
Ce produit est prévu pour être utilisé dans les environnements électromagnétiques suivants : E1 (résidentiel), E2 (commercial et industrie légère), E3 (urbain extérieur) et E4 (environnement EMC contrôlé, ex. studio de télévision).

Für Kunden in Europa

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie der EG-Kommission.
Angewandte Normen:
• EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)
• EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit)
Für die folgenden elektromagnetischen Umgebungen: E1 (Wohnbereich), E2 (kommerzieller und in beschränktem Maße industrieller Bereich), E3 (Stadtbereich im Freien) und E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

For the customers in Europe

The manufacturer of this product is Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan.
The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany.

Pour les clients en Europe

Le fabricant de ce produit est Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japon.
Le représentant autorisé pour EMC et la sécurité des produits est Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Allemagne.

Für Kunden in Europa

Der Hersteller dieses Produkts ist Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan.
Der autorisierte Repräsentant für EMV und Produktsicherheit ist Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Deutschland.

For the HKCU2007

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 with the CE marking complies with the EMC Directive issued by the Commission of the European Community.
Compliance with this directive implies conformity to the following European standards:
• EN55103-1: Electromagnetic Interference(Emission)
• EN55103-2: Electromagnetic Susceptibility(Immunity)
This product is intended for use in the following Electromagnetic Environment: E4 (controlled EMC environment, ex. TV studio).

Pour les clients en Europe

Ce produit portant la marque CE est conforme à la Directive sur la compatibilité électromagnétique (EMC) émise par la Commission de la Communauté européenne.
La conformité à cette directive implique la conformité aux normes européennes suivantes:
• EN55103-1: Interférences électromagnétiques (émission)
• EN55103-2: Sensibilité électromagnétique (immunité)
Ce produit est prévu pour être utilisé dans l'environnement électromagnétique suivant: E4 (environnement EMC contrôlé, ex. studio de télévision).

Für Kunden in Europa

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie der EG-Kommission.
Angewandte Normen:
• EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)

- EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit)

Für die folgende elektromagnetische Umgebung: E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

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.

Pour les clients en Europe, Australie et Nouvelle-Zélande

AVERTISSEMENT

Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

Für Kunden in Europa, Australien und Neuseeland

WARNUNG

Dies ist eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

For the customers in Europe

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Für Kunden in Europa

Der Hersteller dieses Produkts ist Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan.
Der autorisierte Repräsentant für EMV und Produktsicherheit ist Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Deutschland.

This apparatus shall not be used in the residential area.

Ne pas utiliser cet appareil dans une zone résidentielle.

Dieser Apparat darf nicht im Wohnbereich verwendet werden.

Table of Contents

Overview

The HDCU1700 Camera Control Unit is connected to a Sony HDC1700 high-definition video camera. It carries out signal processing and provides an interface for external equipment.

This unit may be combined with an MSU-1000 series Master Setup Unit (optional) or an RCP-1000 series Remote Control Panel (optional) to form a camera control system. Further, a system capable of controlling multiple video cameras can be configured by adding a CNU-700 Camera Command Network Unit.

The HDCU1700 has the following major features.

Front panel for increased usefulness

The HDCU1700 features a design that places menu operation switches and status LEDs related to optical transmission, etc., on the front panel. These were moved from under the cover of the HDCU1000/1500's front panel, providing even greater convenience.

Multiple video inputs and outputs

The HDCU1700 features the following standard-feature signal input/output ports.

- Four SDI outputs (HD/SD switchable outputs)
- Three HD-SDI/SD-SDI/SD analog return inputs
- One teleprompter input

In addition, a variety of input/output interfaces are offered via optional installable boards.

HKCU2007 3G/HD SDI Output Expansion Unit

This provides four 3G/HD-SDI outputs.
With multiple boards of this type installed, the HDCU1700 outputs up to eight HD-SDI signals.

Note

The HDCU1700 does not support 3G digital optical output.

HKCU1001 SD Encoder Unit

Installing this board makes it possible to output SD analog composite signals (NTSC/PAL), SD picture monitor signals and SD waveform monitor signals.

HKCU1003 Multi Interface Unit

This board consists of 3 types of VDA boards, and makes the following input/output signals possible:

- Frame reference input and output to lock 2-3 pull-down sequence
- SD analog component signal (RGB or Y/R-Y/B-Y) or SD analog composite signal output
- SD analog composite signal (NTSC/PAL) output, SD picture monitor signal output, SD waveform monitor signal output

External reference signals

The HDCU1700 can be locked to an external reference signal. Either an HD tri-level sync signal or an SD sync (black burst) signal may be used as the reference signal.

Built-in down converter

When the system is operating at a 59.94/50 Hz field frequency, HD signals can be converted to SD component SDI signals using the down converter. The output signal aspect ratio may be set to 4:3 edge crop, 16:9 squeeze, or letter box. The down converter has image enhancement, gamma control, and matrix ON/OFF features, and can be controlled externally.

Built-in simplified up converter

The HDCU1700 has a simplified up converter to allow monitoring of SD signal return video using an HD viewfinder. The aspect ratio of the return video signal may be set to 4:3 edge crop, 16:9 squeeze, or letter box.

Digital Optical Transfer

The HDCU1700 may be connected to a camera using an optical fiber cable (two single-mode optical fiber lines, two power lines and two control lines) for the transmission of digital video, audio, and control signals. By connecting together optical fiber cables, signals may be transmitted up to a maximum of 2,000 meters (6,600 feet). The maximum length of the cable supplying power varies with the camera system configuration and with the type of optical fiber cable.
The HDCU1700 supports standard digital optical transfer, and when used with an HDC1700 camera, can support 1080/50I, 59.94I recording and more via just one optical cable.

Safety-oriented power supply

The HDCU1700 is designed for safety. When the power is turned on, a low voltage is supplied at first. Only after it has been verified that an appropriate camera is attached, the normal 180 V DC power supply is activated. The power is not supplied unless a camera is connected via an optoelectric cable.
Also, the HDCU1700 is equipped with an alarm indicator to warn of open or short circuits in the cable.

Wide range of audio functions

This unit has connectors for two-channel analog audio outputs and a program audio input. Further, the HDCU1700 can use 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.

Remote control

The level and phases of this unit's output signals can be controlled remotely by an MSU-1000 series Master Setup Unit.

Microphone volume control

The camera's microphone volume can be controlled via the MIC REMOTE/MSU/RCP connectors.

Character monitor signal output

The results of the HDCU1700 self-diagnosis and setup menu can be obtained with a text display by character signal output.

Rack mountable

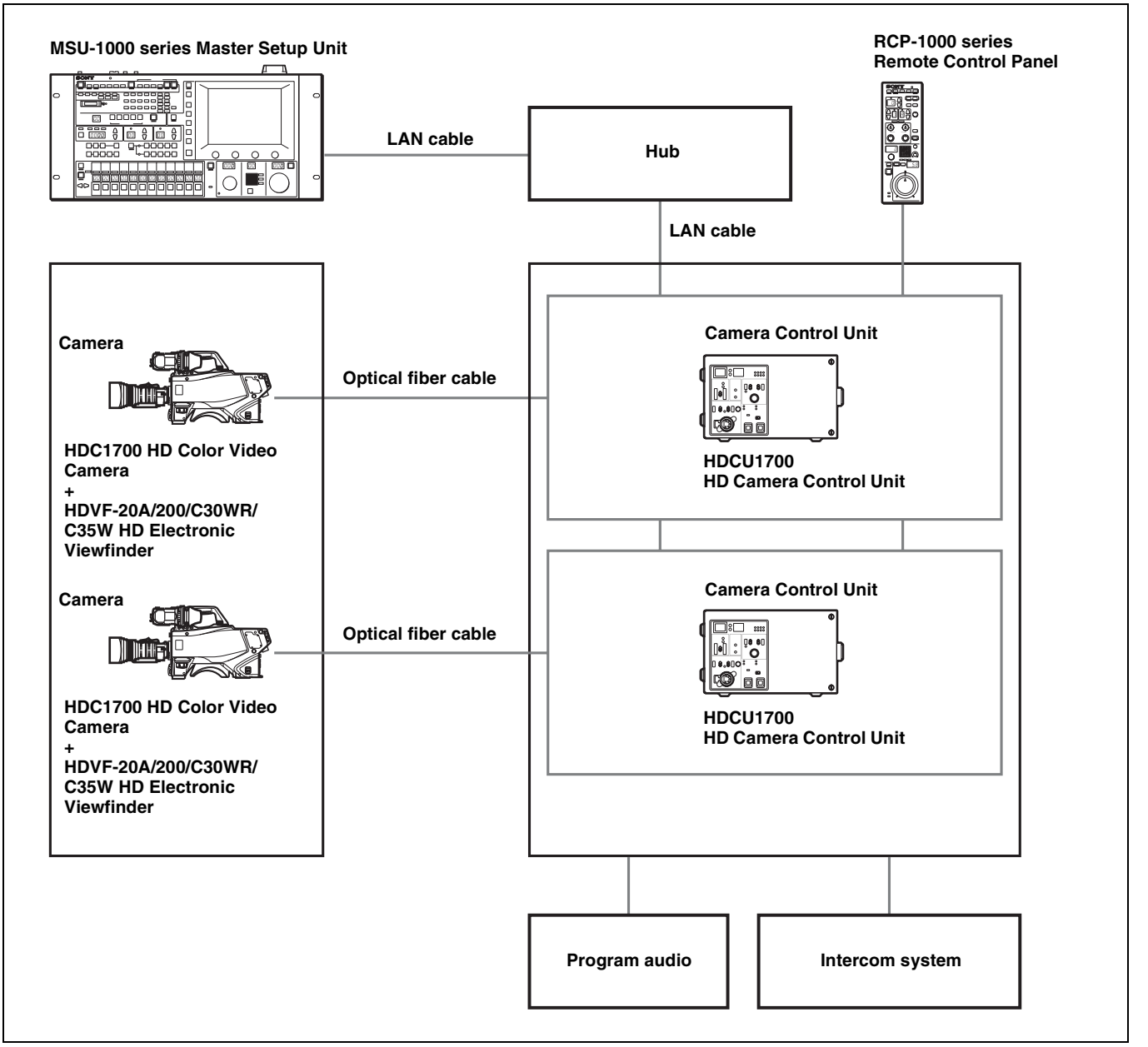
This unit may be installed in a standard EIA 19-inch rack (three units high). (The HDCU1700 needs the RMM-301 Rack Mount Adaptor (optional).)

Plug-in unit configuration

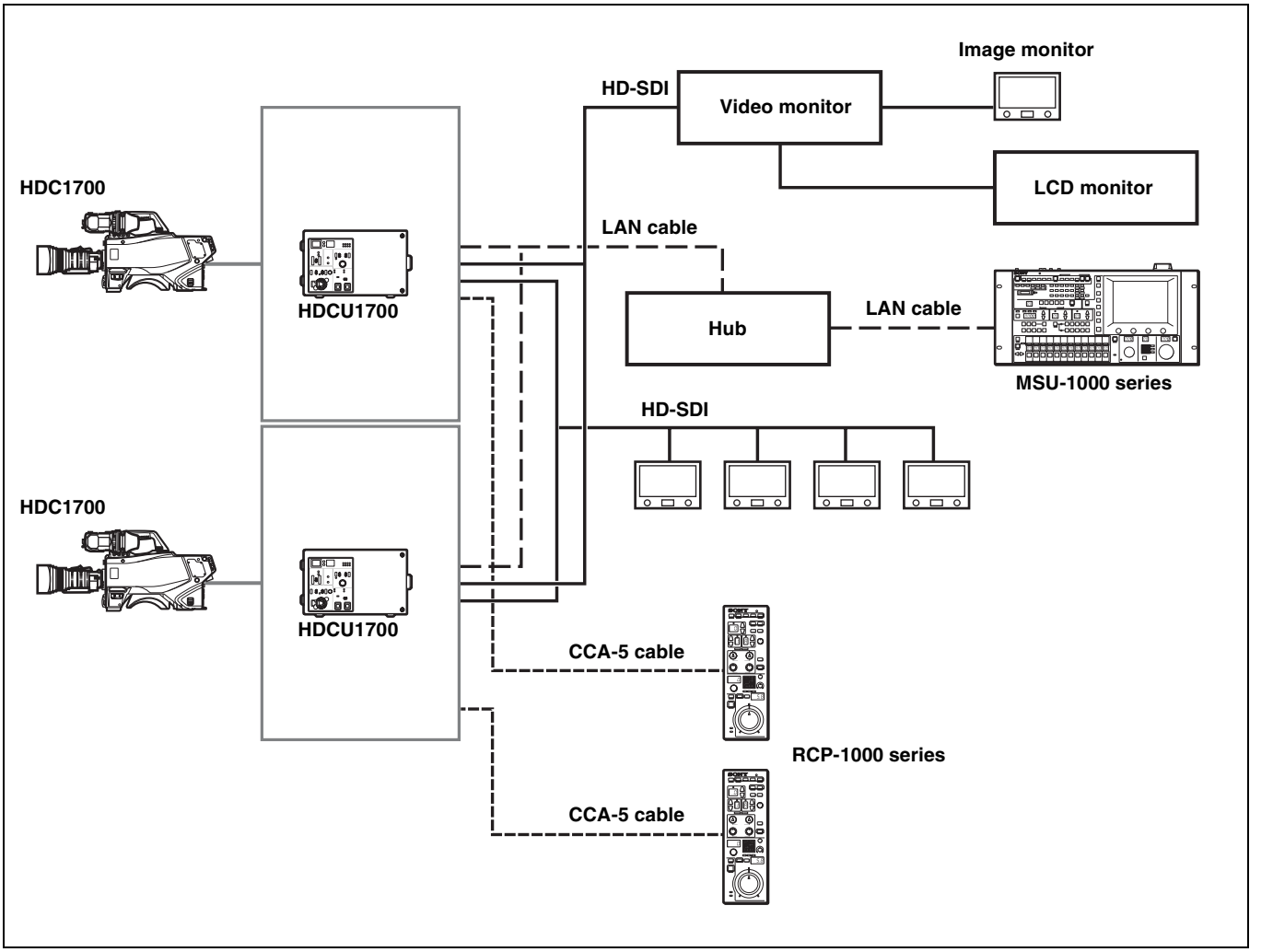
Internal printed circuit boards are designed for easy plug-in and removal, which makes it easy to inspect and maintain the unit.

System Configuration

Basic System Components

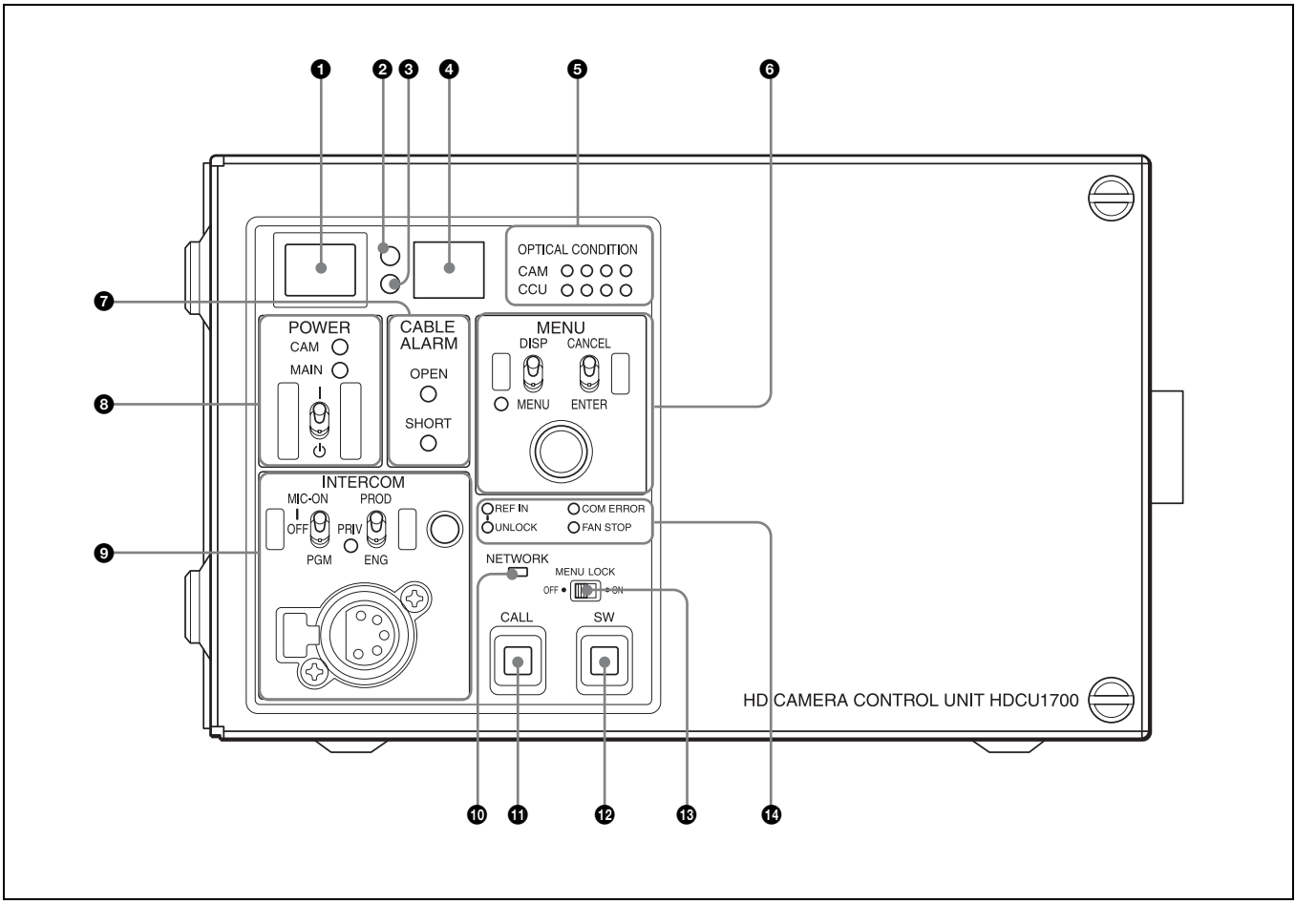


System Operation Example

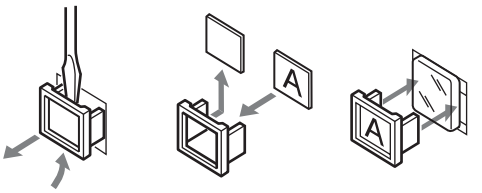


Locations and Functions of Parts

Front Panel



❶ Red tally indicator
Lights in red when this unit receives a red tally signal. When the CALL button on the MSU-1000 series Master Setup Unit, RCP-1000 series Remote Control Panel, etc., is pressed, this indicator will go out if previously lit, and light up if previously off. You can attach the supplied number plate here.



❷ Yellow tally indicator
Lights in yellow when this unit receives a yellow tally signal.

❸ Green tally indicator
Lights in green when this unit receives a green tally signal.

❹ CCU number display
The camera number set via the CCU menu is displayed.

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

❺ Optical signal reception status indicator
This indicates the camera and CCU's optical signal reception status when performing optical transmissions.

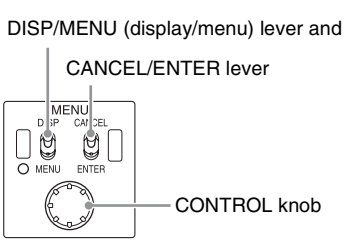
When the two lamps on the right (green) are lighted:
Reception status is excellent.

When the second lamp from the right (green) is lighted:
Reception status is good.

When the second lamp from the left (yellow) is lighted:
Reception status is low.

When the lamp on the left (red) is lighted: Reception status is at the lowest level.

❻ MENU control block



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.

❼ CABLE ALARM indicators

OPEN (red): Lights in red when a camera isn't connected to the CAMERA connector on the rear panel of this unit via an optical fiber cable. Flashes when the connection status of an optical fiber cable is bad.

SHORT (red): Lights in red when the power supply cord of an optical fiber cable is short to external, or two power supply cords are short. Power isn't input to the camera when this indicator lights.

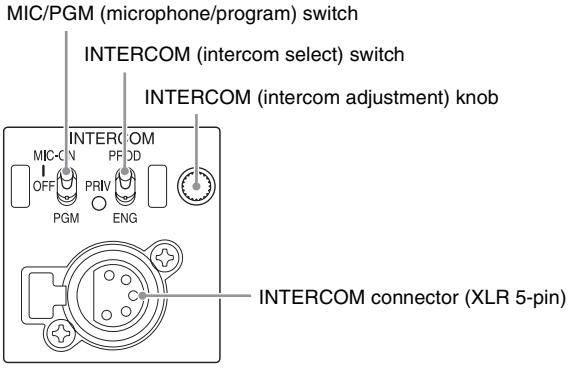
❽ POWER switch and indicators

Turns the entire system on and off, including this unit, the video camera, and the RCP-1000 series Remote Control Panel connected to the REMOTE connector of this unit. The MAIN indicator and the CAM indicator light when the power switch is turned on. Pressing the CAM PW button of the master setup unit and the remote control panel turns off the video camera only, and only the CAM indicator turns off.

Note

In order for the power supply to supply the unit with the necessary power to start up, energy is consumed even when this switch is set to OFF.

❾ INTERCOM audio input/output and control block



• **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 front panel.

PROD: Connects the producer line.

PRIV: Blocks the connection to the producer line or engineer line, allowing private intercom talk between the CCU and the camera.

ENG: Connects the engineer line.

• **PRIV (Private) indicator**

Lights when the intercom is in private mode.

• **INTERCOM (intercom adjustment) knob**

Adjusts the receiver audio level of the intercom.

• **INTERCOM connector (XLR 5-pin)**

Connects the intercom headset.

To use a headset with a plug other than an XLR 5-pin plug, consult a Sony service or sales representative.

❿ Network indicator

Displays the network system connection status.

On: When CNS SETTING in the NETWORK SETTING menu is set to either BRIDGE or MCS, this indicates that external control equipment (MSU-1000/1500 Master Setup Unit, RCP-1000-series Remote Control Panel, or other device) is connected.

Flashing: When CNS SETTING in the NETWORK SETTING menu is set to either BRIDGE or MCS, this 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: When CNS SETTING in the NETWORK SETTING menu is set to either BRIDGE or MCS, this indicates that a LAN cable is not connected or that the network system connection parameters have not been set.
When the CNS SETTING in the NETWORK SETTING menu is set to LEGACY, this remains turned off.

⓫ Call button

When pressed, this outputs a call signal to the camera and external control device (the RCP-1000 series, etc.) that are connected to this unit. Use this when you want to call and speak with the camera operator or external control device operator via intercom.

⓬ Menu lock switch

This locks out operation of the front panel menu operation area.

⓭ Assignable button

You can set a function for this button via the CCU menu.

⓮ Status display indicator

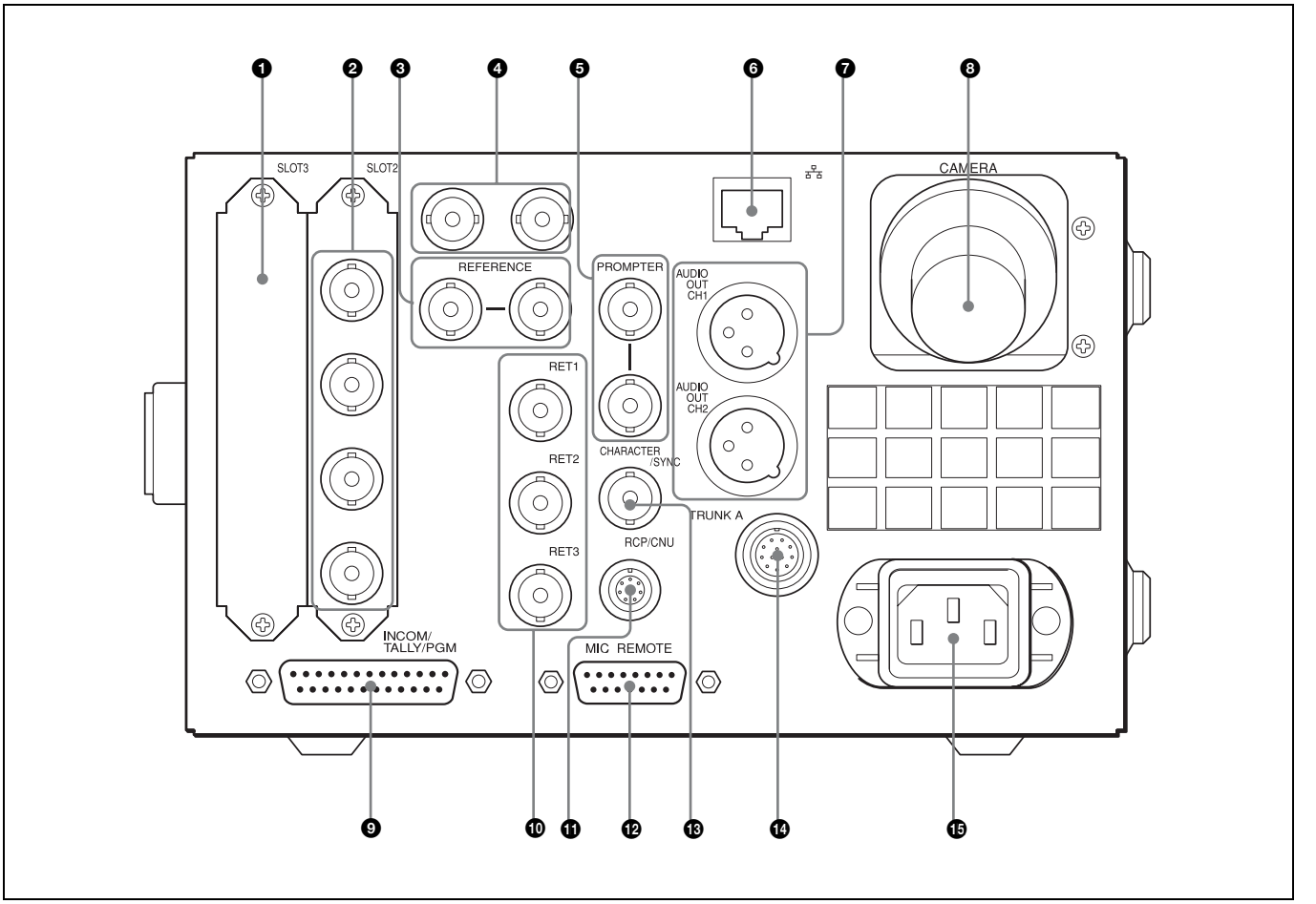
REF IN (Green): REFERENCE is being input.

UNLOCK (Red): The input REFERENCE is not locked.

COM ERROR (Red): There is a communication failure with the camera or other external control equipment (such as the RCP-1000 series Remote Control Panel).

FAN STOP (Red): The power fan is stopped.

Rear Panel



❶ Expansion slots
For installation of an optional HKCU2007 3G/HD SDI Output Expansion Unit, HKCU1001 SD Encoder Unit, or HKCU1003 Multi Interface Unit.

Note

The HDCU1700 does not support 3G digital optical output.

For details on installation, contact a Sony service or sales representative.

❷ HD/SD SDI OUTPUT (SDI output connectors) area (BNC-type)
The signal from the video camera may be output as two HD-SDI signals or two SD-SDI signals. The signals output from the OUTPUT3 and OUTPUT4 connectors can be superimposed character and marker signals.
Signals of the same format are output from the SDI 1 and SDI 2 connectors; similarly, signals of another format can be output from the SDI 3 and SDI 4 connectors.

For details on settings, contact a Sony service or sales representative.

❸ REFERENCE connectors (BNC-type)
Input an HD tri-level reference sync signal or SD reference sync signal (black burst signal, or black burst signal with 10 Field ID) to either of the two connectors.
The input signal is output from the other connector as is (loop-through output). If loop-through output is not used, terminate the unused connector at 75 ohms.
The type of reference signal is selected using the setup menu, or using the MSU-1000 series Master Setup Unit.

For details on the setup menu, contact a Sony service or sales representative.

Note

To use the VBS signal of the HKCU1001 SD Encoder Unit or the HKCU1003 Multi Interface Unit (when SC phase lock is required), use an SD reference sync signal (black burst signal).
When black burst signal with 10 Field ID is input, REF 10F BB of OTHERS (C17) must be set to ON.

❹ SPARE connector (BNC-type)
Reserved for future use.

❺ PROMPTER (tele-prompter) connectors (BNC-type)
Input a teleprompter signal to either of the two connectors. The input signal is output from the other connector as is (loop-through output). If loop-through output is not used, terminate the unused connector at 75 ohms. If the signal used is a 1.0 Vp-p, 75-ohm signal, it may be output from the PROMPTER OUT connector of the video camera with a frequency bandwidth of 5 MHz, regardless of signal format.

RET4 (return video input 4)
When required, either of the PROMPTER connectors can be assigned for the fourth return video input, exclusively for analog VBS signals.

For details on settings, contact a Sony service or sales representative.

❻ (LAN) connector (RJ-45 8-pin)
For LAN connection. Connect a LAN HUB (10BASE-T/100BASE-TX), using a LAN cable (shielded type of category 5 or more).

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.

ATTENTION

Par mesure de sécurité, ne raccordez pas le connecteur pour le câblage de périphériques pouvant avoir une tension excessive à ce port. Suivez les instructions pour ce port.

VORSICHT

Aus Sicherheitsgründen nicht mit einem Peripheriegerät-Anschluss verbinden, der zu starke Spannung für diese Buchse haben könnte. Folgen Sie den Anweisungen für diese Buchse.

❼ AUDIO OUT CH1, CH2 (audio output 1, 2) connectors (XLR 3-pin)
Used for output of the audio signal to the AUDIO IN connectors of the video camera.

❽ CAMERA connector (optical fiber connector)
Used to connect a video camera, using an optical fiber cable. All video camera signals, including power supply, control, video, and audio, are sent and received over one optical fiber cable.

Note

Dust on the connection surface of the optical fiber cable may result in transmission errors. When not connected, always cover the end of the connector with the supplied cap.

❾ INTERCOM/TALLY/PGM (intercom/tally/program audio) connector (D-sub 25-pin)
Used for input and output of intercom, tally, and program audio signals. Connect to the intercom/tally/program audio connector of the intercom system.

❿ RET1, RET2, RET3 (return video input 1, 2, 3) connectors (BNC-type)

- Three different return video input signals may be received independently.
- The selection of the return video input signal is made by the return video switch of the video camera.
- The input signal may be set to HD-SDI, SD-SDI, or analog VBS, using the setup menu, or using the MSU-1000 series Master Setup Unit.

For details on the setup menu, contact a Sony service or sales representative.

Refer also to the Master Setup Unit manual.

⓫ RCP/CNU connector (round 8-pin)
Used to connect to an MSU-1000 series Master Setup Unit, CNU-700 Camera Command Network Unit, or RCP-1000 series Remote Control Panel via a CCA-5 Connection Cable. Control signals are sent and received via this connector. When using an RCP-1000 series unit, power is also supplied.

⓬ MIC REMOTE (microphone remote) connector (D-sub 15-pin)
Using this connector, the video camera's microphone input level may be set by external equipment such as an audio mixer, in five level (–60, –50, –40, –30, and –20 dB). When shooting, set the volume to a level appropriate for the audio conditions. This connector also outputs red, yellow and green tally signals.
When DSUB-15 in the CCU CONFIGURATION menu is set to WF REMOTE and an MSU-1000 series Master Setup Unit or an RCP-1000 series Remote Control Panel is used to remotely control a waveform monitor display, use a connector that is compatible with recall-type waveform monitors. On the recall-type waveform monitor, set/preset the display mode to waveform monitor, and then select (recall) that mode externally.

The microphone input level may also be set using the setup menu. For details on the setup menu, contact a Sony service or sales representative.

⓭ CHARACTER/SYNC connector (BNC-type)
Outputs the self-diagnostic results or the setup menu as an SD monochrome analog video signal.
When CHARA/SYNC in the CCU CONFIGURATION menu is set to SYNC, this can also be used as a SYNC connector. SD composite sync or an HD3 synchronous signal will be output from the internal sync signal generator. (The default is set to SD composite sync.)

For details on signal selection, contact a Sony service or sales representative.

⓮ TRUNK A connector (round 12-pin)
Used to connect to the CCU connector on a video camera via an RS-232C or RS-422A interface. Communication with up to two channels is available.

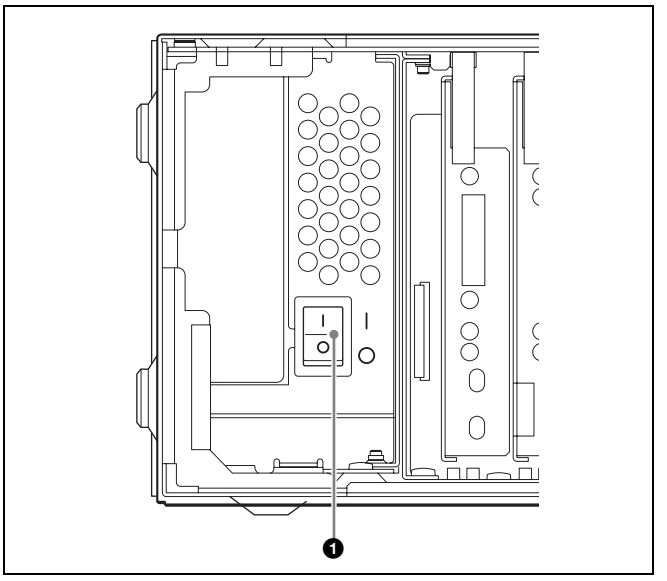
⓯ AC IN (AC power input) connector
Use the specified AC power cord to connect to an AC power supply. The AC power cord can be secured to this unit, using the plug holder (optional).

Internal Switches

Note

To reduce the risk of electric shock, fire or injury, do not open the cabinet. To adjust the internal settings, refer to qualified service personnel.

The following switches are located inside the unit, behind the front panel:



1 Internal main power switch
When an abnormality has occurred, and power cannot be cut off with the POWER switch on the front panel, you may turn off the unit using the internal main power switch. When the switch is set to OFF, setting the POWER switch on the front panel to ON doesn't turn on the unit.

HKCU2007 3G/HD SDI Output Expansion Unit (optional)

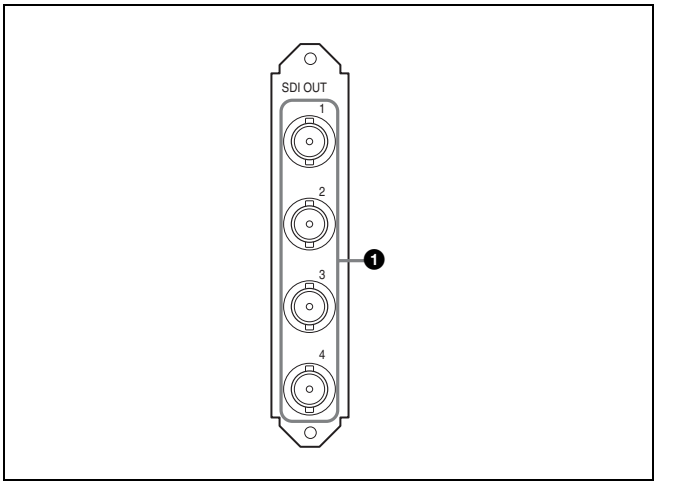
Notes

- To reduce the risk of electric shock, fire or injury, do not open the cabinet. To adjust the internal settings, refer to qualified service personnel.
- The HDCU1700 does not support 3G digital optical output.

The HKCU2007 3G/HD SDI Output Expansion Unit consists of a DRX front board and an HIF rear board.
When these boards are installed in the front and rear expansion slots of the unit, the number of HD-SDI output connectors increases by four. These can also be installed on HDCU1700's expansion slots.
The format of SDI signals output via each upper/lower pair of connectors on the HIF board can be set.

For details on installation, contact a Sony service or sales representative.

HIF-57 Board



1 SDI OUT 1, 2, 3, 4 (HD serial digital interface output 1-4) connectors (BNC-type)
The signal from the video camera may be output as four HD-SDI signals.

HKCU1001 SD Encoder Unit (optional)

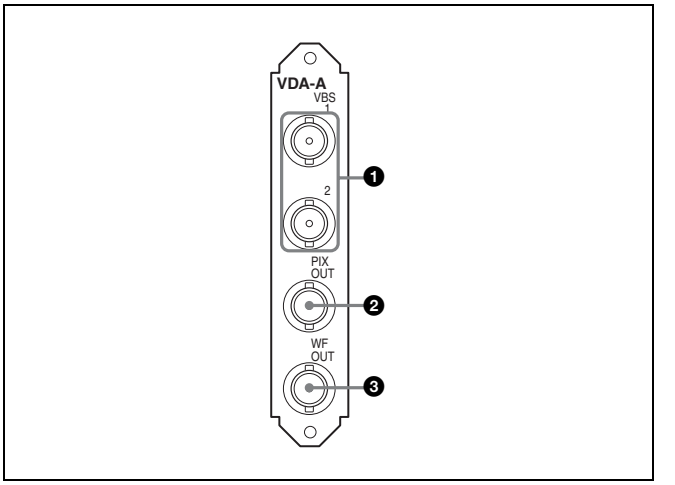
Note

To reduce the risk of electric shock, fire or injury, do not open the cabinet. To adjust the internal settings, refer to qualified service personnel.

The HKCU1001 consists of an EN-A front board and a VDA-A rear board.
When these boards are installed in the front and rear expansion slots of the unit, the unit outputs SD composite signals, waveform monitor output signals, and picture monitor output signals through the VDA-A board's connectors.

For details on installation, contact a Sony service or sales representative.

VDA-A Board



❶ VBS 1, 2 (composite video output 1, 2) connectors (BNC-type)

The signal from the video camera may be output as two analog composite signals.

❷ PIX OUT (picture monitor output) connector (BNC-type)

Outputs the video signal for a picture monitor selected with the PICTURE MONITOR button of an RCP-1000 series Remote Control Panel or MSU-1000 series Master Setup Unit. Character signals or marker signals can be superimposed on the video signal output through this connector.

For details on these operations, refer to the Master Setup Unit or Remote Control Panel manuals.

❸ WF OUT (waveform monitor output) connector (BNC-type)

Outputs the video signal for a waveform monitor selected with the WF MONITOR button of an RCP-1000 series Remote Control Panel or MSU-1000 series Master Setup Unit.

For details on these operations, refer to the Master Setup Unit or Remote Control Panel manuals.

HKCU1003 Multi Interface Unit (optional)

Note

To reduce the risk of electric shock, fire or injury, do not open the cabinet. To adjust the internal settings, refer to qualified service personnel.

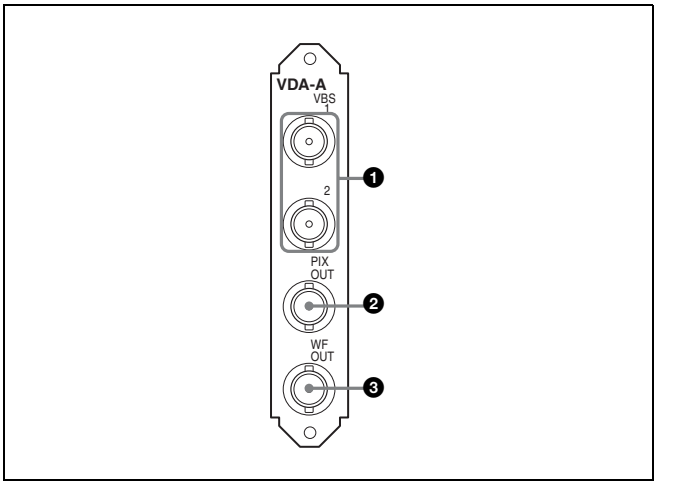
The HKCU1003 consists of an EN-B front board and three VDA rear boards (A/B/C).
When the EN-B board and one of the VDA rear boards are installed in the front and rear expansion slots of the unit, the unit inputs or outputs the following signals.

- Outputs SD composite signals, waveform monitor output signals, and picture monitor output signals through a VDA-A board.
- Inputs/outputs the frame sequence signal when operating a 24P system through a VDA-B board.
- Outputs analog component signals or analog composite signals through a VDA-C board.

When you use either the VDA-A board or the VDA-B board, insert the EN-B board in the corresponding expansion slot on the front of the HDCU1700. When either the VDA-A board or the VDA-B board is installed, you can insert the VDA-C board in an expansion slot on the rear panel of the HDCU1700. Don't insert any board in the corresponding expansion slot on the front of the HDCU1700.

For details on installation, contact a Sony service or sales representative.

VDA-A Board



❶ VBS 1, 2 (composite video output 1, 2) connectors (BNC-type)

The signal from the video camera may be output as two analog composite signals.

❷ PIX OUT (picture monitor output) connector (BNC-type)

Outputs the video signal for a picture monitor selected with the PICTURE MONITOR button of an RCP-1000 series Remote Control Panel or MSU-1000 series Master Setup Unit. Character signals or marker signals can be superimposed on the video signal output through this connector.

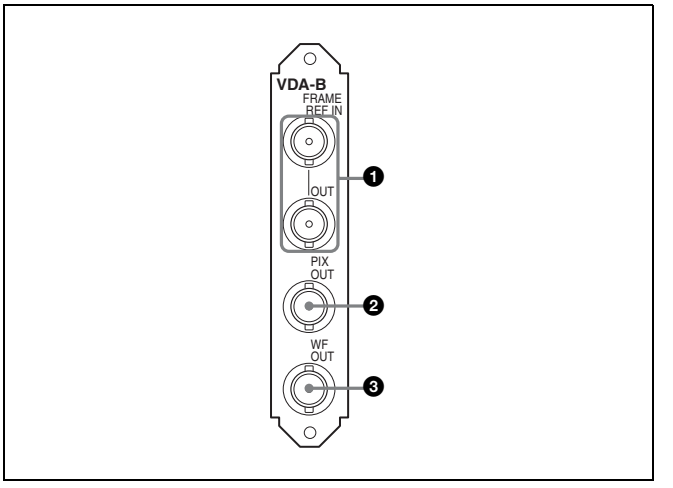
For details on these operations, refer to the Master Setup Unit or Remote Control Panel manuals.

❸ WF OUT (waveform monitor output) connector (BNC-type)

Outputs the video signal for a waveform monitor selected with the WF MONITOR button of an RCP-1000 series Remote Control Panel or MSU-1000 series Master Setup Unit.

For details on these operations, refer to the Master Setup Unit or Remote Control Panel manuals.

VDA-B Board



❶ FRAME REF IN, OUT (frame reference input/output) connectors (BNC-type)

Input an HD tri-level reference sync signal or SD reference sync signal (black burst signal) for the sequence-lock between the camera control units, to the upper of the two connectors. The input signal is output from the lower connector as is (loop-through output).

When not using the OUT connector, terminate it at 75 ohms.

❷ PIX OUT (picture monitor output) connector (BNC-type)

Outputs the video signal for a picture monitor selected with the PICTURE MONITOR button of an RCP-1000 series Remote Control Panel or MSU-1000 series Master Setup Unit.

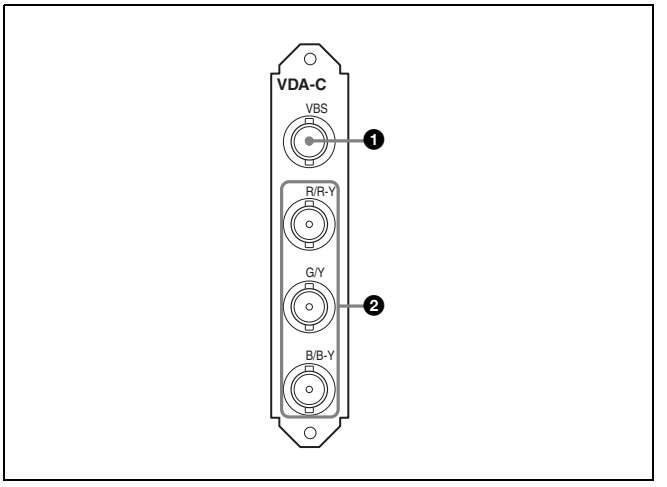
For details on these operations, refer to the Master Setup Unit or Remote Control Panel manuals.

❸ WF OUT (waveform monitor) connector (BNC-type)

Outputs the video signal for a waveform monitor selected with the WF MONITOR button of an RCP-1000 series Remote Control Panel or MSU-1000 series Master Setup Unit.

For details on these operations, refer to the Master Setup Unit or Remote Control Panel manuals.

VDA-C Board



❶ VBS (composite video signal output) connector (BNC-type)

The signal from the video camera may be output as an analog composite signal.

❷ R/R-Y, G/Y, B/B-Y (component video signal output) connectors (BNC-type)

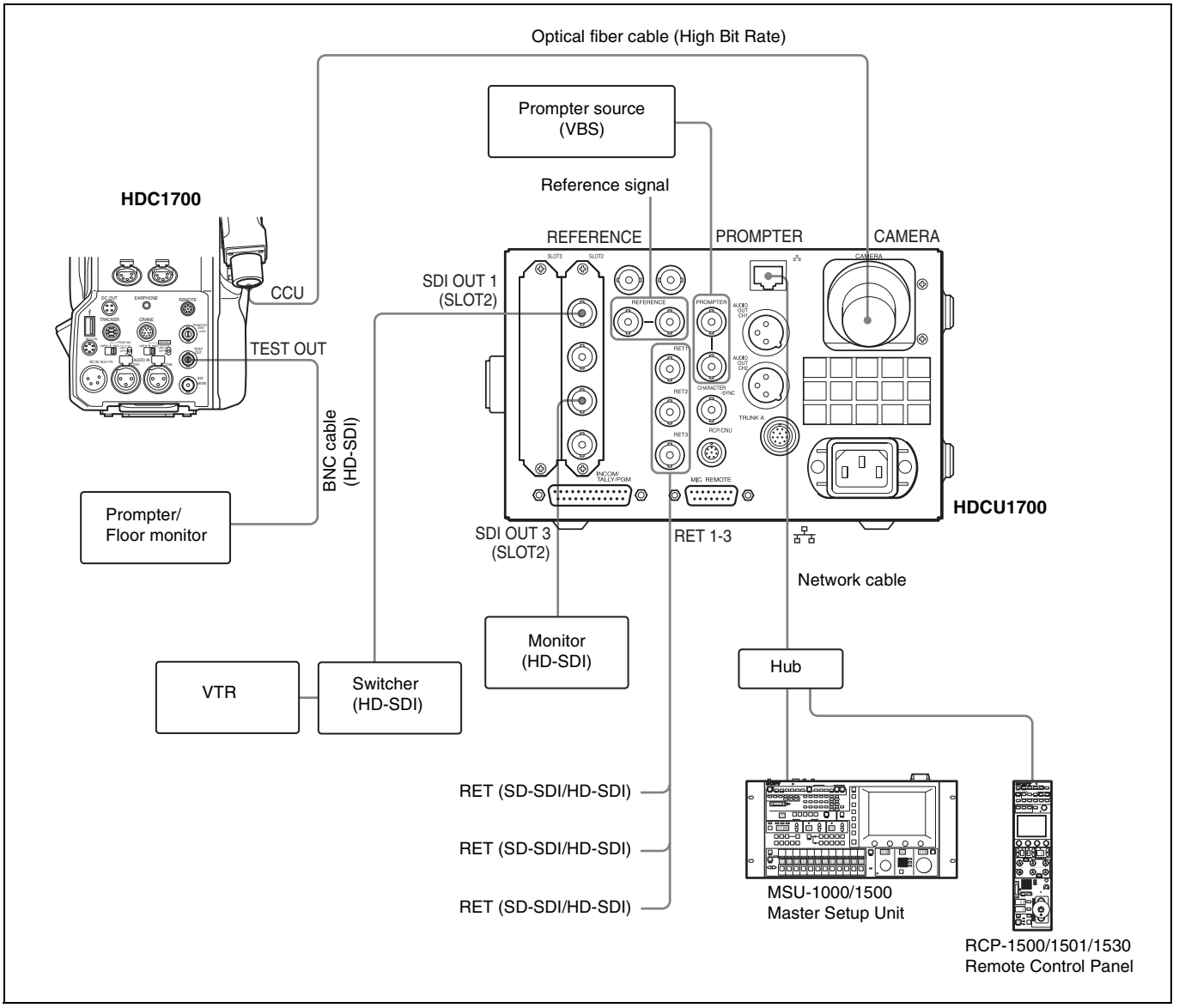
The signal from the video camera may be output as a R/R-Y, G/Y, B/B-Y component signal or an RGB component signal.

Connections and Settings

Fiber Transmission System

The camera and the camera control unit are connected via a single optical fiber cable, and transmission is achieved at “High Bit Rate.”

Connection example



Settings

Camera control unit

Format: Select a Dual Link format of 1080/59.94P or 1080/50P.

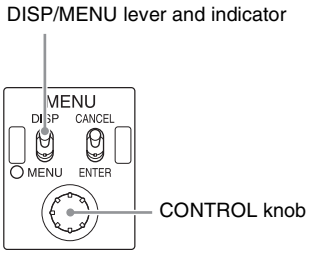
Status Display

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 24.

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.

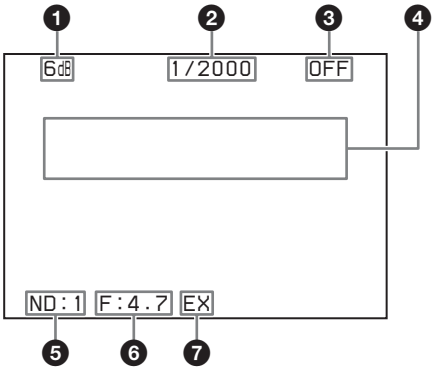
Status Display Screen

The following information is displayed on the status display screen.

- Camera settings
- System status
- CCU hardware diagnostics
- Camera system diagnostics
- Network diagnostics
- CCU AT board diagnostics
- CCU AVP board diagnostics
- CCU DTX board diagnostics
- Status of the boards inserted in Slot1 to 6
- CCU SDP 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

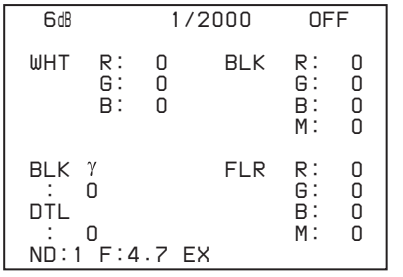
❻ F-stop value
Lens F-stop value (iris value)

❼ EX (lens extender)
Lens extender indicator

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



WHT: White balance R/G/B value
BLK: Black balance R/G/B/Master value
BLK γ: Black gamma value
FLR: Flare balance R/G/B/Master value
DTL: Detail level

Page 3

```
 EC   0 H:A V:A γ: 0

SD Matrix: ON
CC Reduction: ON
 Coring: 0 Level : 35
SD Detail: ON
 Level : 0 Comb  :  0
 Limit : 0 Lim-w :  0
 Crisp : 0 Lim-b :  0
 LDKnee: 0 LDGain:  0
 Ratio : 0
 Freq  : 0
```

The setting status for CCU SD signals is displayed.

SD Matrix: Linear matrix correction for down converter output setting

SD Detail: Contour correction function for down converter output setting

Note

Items with no explanation are the same as those listed under "*Page 1*" in "*"Camera settings"*" above.

System status

```
*System Status*     1/17

Ref:HD       Lock
Camera :HDC1700(HB)
 1080/59.94I
HD Main:1080/59.94I
HD Conv:-------------
SD Conv:525/59.94I
RET1:1080/59.94I(PsF)
RET2:1080/59.94I(PsF)
RET3:1080/59.94I(PsF)
RET4:1080/59.94I(PsF)
```

The model name of the camera connected to the unit, the format setting, CCU output format setting, external reference setting and return signal format setting are displayed.

Ref: Reference signal format and lock status

Camera: Model name of the connected camera

HD Main: Return signal format

HD Conv: HD up convert setting status

SD Conv: SD up convert setting status

RET1: Return 1 return format selection status

RET2: Return 2 return format selection status

RET3: Return 3 return format selection status

RET4: Return 4 return format selection status

CCU hardware diagnostics

```
                      2/17




** Diagnosis **
A:AT   :OK   1:
B:AVP  :OK   2:DRX   OK
C:DTX  :OK   3:RC    OK
```

The name of the board connected to the unit's front panel and that board's self-diagnostic results are displayed.

Slot A to C
Slot 1 to 3

Camera system diagnostics

Page 1

```
*System Diag 1/3*   3/17

Optical Condition

 CAMERA    OK
 CCU       OK

 Fan Power OK
 Timer     56H
 CCU Power AC  OK

SerialNo 00002002
```

CAMERA: Camera light sensor level

CCU: CCU light sensor level

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*   4/17

  CAMERA  Cable Connect
          Data  OK
          Power OK
  RCP/CNU Cable Connect
          Data  OK
          Power OK
```

CAMERA Cable: Camera cable connection status

CAMERA Data: Camera data transmission status

CAMERA Power: Camera power supply status

RCP/CNU Cable: This unit's REMOTE connector cable connection status

RCP/CNU Data: Data transmission status from a device connected to this unit's REMOTE connector

RCP/CNU Power: Power supply status to a device connected to this unit's REMOTE connector

Page 3

```
*System Diag 3/3*   5/17

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

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

Intercom CCU: CCU intercom selection status
Intercom CAMERA CH1: Camera intercom 1 selection status and camera microphone status (When 1CH is selected via the INTERCOM menu (C07), the PROD setting cannot be changed.)
Intercom CAMERA CH2: Camera intercom 2 selection status and camera microphone status
CAM MIC Gain: Camera microphone circuit control status
CAM MIC CH1: Camera microphone circuit 1 amp gain status
CAM MIC CH2: Camera microphone circuit 2 amp gain status

Network diagnostics

Page 1

```
*Network Diag 1/3*  6/17

MacAddress 00014A-xxxxxx
Auto Negotiation:  ON
Auto MDIX       :  ON
Connect Speed   :  100M
Duplex Mode     :  FULL
MDI/MDIX Select :  MDIX

Link Status     :OK
```

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

Page 2

```
*Network Diag 2/3*  7/17

CNS Mode  : MCS

CCU No.   : (1)
Master IP Address
     192.168.  0.100
```

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

Page 3

```
*Network Diag 3/3*  8/17


IP Addr :192.168.  0.101
NetMask :255.255.255.  0
Def GW  :192.168.  0.254
```

IP Addr: CCU IP address setting status
NetMask: CCU subnet mask setting status
Def GW: CCU default gateway setting status

CCU AT board diagnostics

```
*AT Diag*           9/17

System Frequency:1.001
CAM Format Setting
       1080/59.94P

Reference   :HD Remote
Line Delay  :Line(90H)
Power Supply:OK
PLD Version :4.00 Done

VIF Power   :OK
```

System Frequency: System frequency
CAM Format Setting: Camera format setting status
Reference: Reference signal setting status
Line Delay: HD-SD delay setting status
Power Supply: Status of power supply to the AT board
PLD Version: AT board PLD version
VIF Power: Status of power supply to the VIF board

CCU AVP board diagnostics

```
*AVP Diag*          10/17




Front Power:OK

PLD Version:1.00  Done

ADO Power  :OK
```

Front Power: Status of power supply to the AVP board
PLD Version: AVP board PLD version
ADO Power: Status of power supply to the ADO board

CCU DTX board diagnostics

```
*DTX Diag*          11/17

Return Delay  :F/S
Active Ret CH :2CH
Front Power:OK
PLD Version:1.00  Done
Rear:SDI      Power:OK
```

Return Delay: Return delay setting status
Active Ret CH: The selected RET channel
Front Power: Status of power supply to the DTX board
PLD Version: DTX board PLD version
Rear: Name of the board installed in the rear expansion slot
Power: Status of power supply to the board installed in the rear expansion slot

Status of the board inserted in Slot1

```
*Slot1 Diag*        12/17



Front:None


Rear :--------
```

This display is not used.

Status of the board inserted in Slot2

```
*Slot2 Diag*        13/17

1&2: 1080/59.94I
3&4:M1080/59.94I
HD CB:BAR 16:9(100%)
SD CB:SMPTE

Front:RC        Power:OK

PLD Version:1.00  Done

Rear :HIF       Power:OK
```

1 & 2: Output format of Output 1 & 2
3 & 4: Output format of Output 3 & 4
HD CB: The output color bar signal
Front: Status of power supply to the board installed in option slot 2 and the board name
PLD Version: PLD version of the board installed in option slot 2 and the board name
Rear: Status of power supply to the rear board and board name

Note

The items displayed differ depending on board connected to the expansion slot.

Status of the board inserted in Slot3

```
*Slot3 Diag*        14/17



Front:None      Power:OK
PLD Version:1.00  Done
Rear :HIF       Power:OK
```

The setting status of the board installed in Slot3 (front/rear) is displayed.

Note

The items displayed differ depending on board connected to the expansion slot.

CCU SDP board diagnostics

```
*SDP Diag*          15/17



Power:OK
PLD Version:1.00  Done
```

Power: Status of power supply to the SDP board
PLD Version: SDP board PLD version

Camera hardware diagnostics

```
*CAMERA Diag*       16/17

       ALL BOARD OK
```

Displays the camera hardware status.

ROM version information for major components

```
*ROM Version*       17/17

CAMERA HDC1700
       1.00     11.12.20
CCU    HDCU1700
       1.00     11.12.20
```

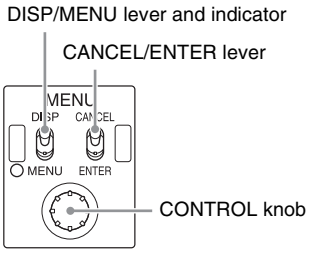
CAMERA: ROM version of the camera connected to this unit
CCU: ROM version of this unit

Setup Menu

The CCU system and peripheral settings can be checked and 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 pointer (➡) 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

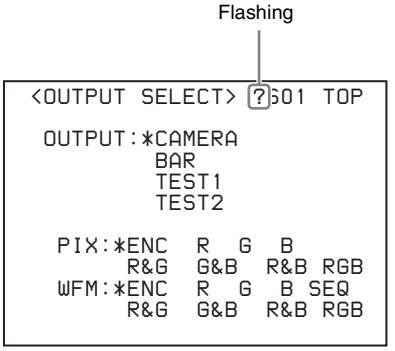
To select an item in the CCU MENU

Turn the CONTROL knob to move the pointer (➡) 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 pointer (➡) to the page number, then press the CONTROL knob.

The pointer (➡) 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 pointer (➡). 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 pointer (➡). Items on the page can now be selected and changed.

1 Turn the CONTROL knob to move the pointer (➡) to the desired item, then press the CONTROL knob.
The pointer (➡) 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 pointer (➡), and the item setting is registered.

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

To enter a character string

Some menu items require a character string input.
Moving the pointer (➡) 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.

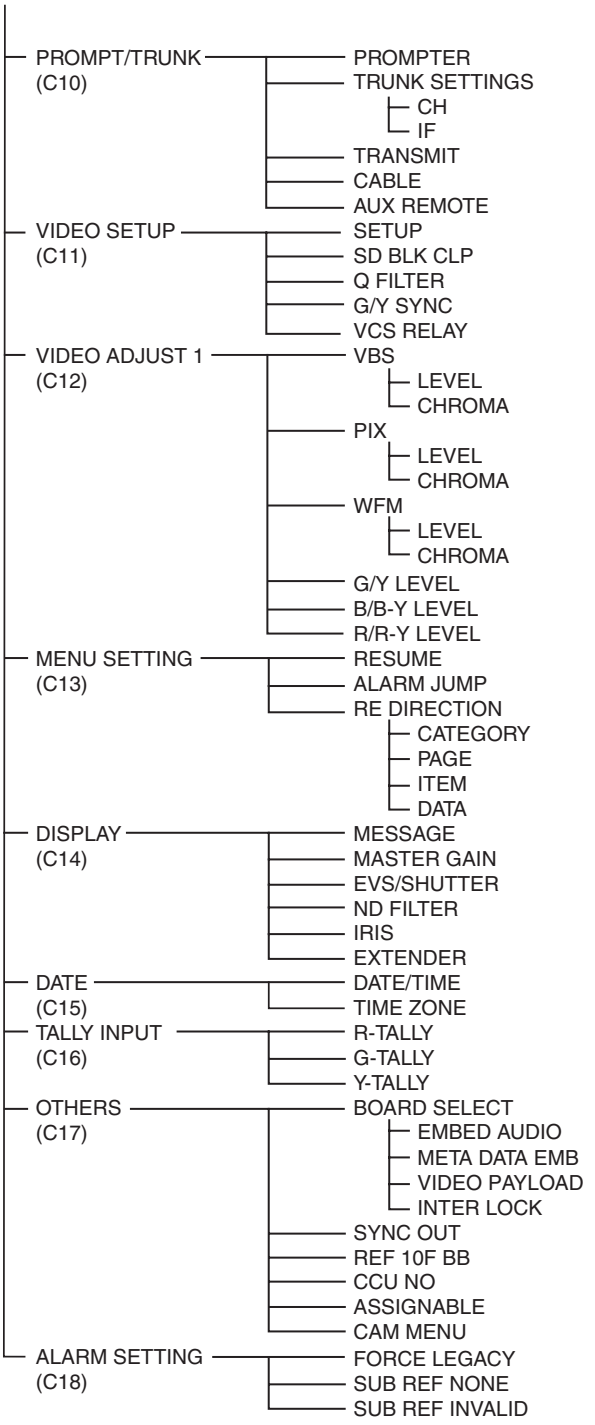
Menu Tree

SYSTEM OPERATION menu

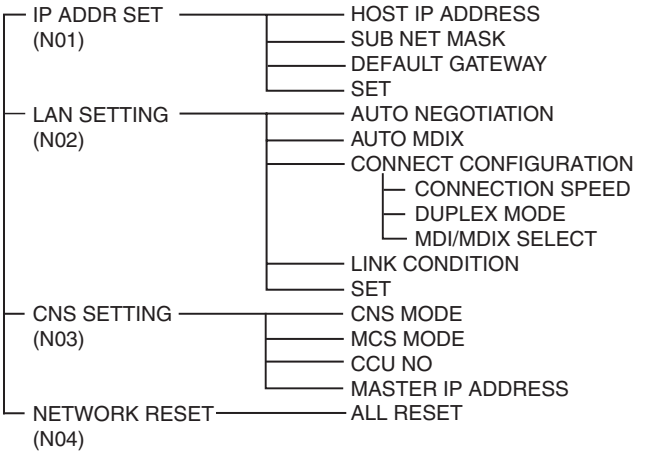
- OUTPUT SELECT (S01)
  - OUTPUT
  - PIX
  - WFM
- GENLOCK PHASE (S02)
  - CONTROL
  - REFERENCE
  - GENLOCK
    - H STEP
    - COARSE
    - V PHASE
    - SUB-REF
- MULTI FORMAT (S03)
  - FREQUENCY
    - HD
    - SD
  - CAMERA FORMAT
  - FRAME CONVERT DELAY
  - HD-SD DELAY
  - COMPONENT
- OUTPUT FORMAT (S04)
  - CAMERA TRANSMIT
  - SLOT2
    - 1&2
    - 3&4
  - SLOT3
- SD ASPECT (S05)
  - SD ASPECT
  - SD LB SEL
  - H-POSITION
    - CENTER
  - V-POSITION
    - CENTER
  - H-INTERP
  - V-INTERP
- RETURN FORMAT (S06)
  - RET1
  - RET2
  - RET3
  - RET4
  - AUTO SCAN
  - LINK TO MAIN
- RETURN SETUP (S07)
  - FRAME SYNCHRO
  - SD-RETURN
    - MATRIX
    - LB LINE
    - ASPECT
- CCU VIDEO (S08)
  - VBS-CHROMA
  - MONO-COLOR
    - PHASE
    - SATURATION

CCU CONFIGURATION menu

- COLOR BAR (C01)
  - HD-BAR
    - SEL
    - MF CB
    - SLOPE
  - SD-BAR
  - BAR-CHARA
  - GRAY
- BAR CHARACTER (C02)
  - BAR CHARACTER
  - ALL CLEAR
- MONITOR 1 (C03)
  - CHARACTER
    - WHITE-LEVEL
    - BLACK-LEVEL
  - PIX CHARACTER
    - WHITE-LEVEL
    - BLACK-LEVEL
- MONITOR 2 (C04)
  - LEVEL GATE
    - Y-LEVEL1
    - Y-LEVEL2
  - GATE-MARKER
  - MODULATION
  - MARKER
- I/F SETUP (C05)
  - BOARD
  - SLOT1
  - SLOT2
  - SLOT3
  - DSUB-15
  - CHARA/SYNC
  - REAR PREVIEW
- MIC GAIN (C06)
  - CAM MIC GAIN
    - CH1
    - CH2
- AUDIO OUT (C07)
  - DELAY
  - ANALOG OUT
  - CH1 LEVEL
    - ADJUST
  - CH2 LEVEL
    - ADJUST
- INTERCOM (C08)
  - INTERCOM CH
  - SYSTEM INTERFACE
  - PRODUCER
    - CANCEL LVL
    - TERMINATION
  - ENGINEER
    - CANCEL LVL
    - TERMINATION
  - PGM1 INPUT
  - PGM2 INPUT
- FRONT INCOM (C09)
  - INCOM MIC
    - MIC TYPE
    - MIC GAIN
  - SIDE TONE
  - PGM MIX
  - PGM SEL
    - PGM1 LVL
    - PGM2 LVL



NETWORK SETTINGS menu



Menu List

Note

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

SYSTEM OPERATION menu

SYSTEM OPERATION			
Page name Page No.	**Item**	**Settings**	**Description**
<OUTPUT SELECT> S01	OUTPUT	CAMERA, **BAR**, TEST1, TEST2	Selects the output signal. TEST1 and TEST2 are not selectable if there is no communication with the camera.
	PIX	**ENC**, R, G, B, R&G, G&B, R&B, RGB	Selects the PIX connector output signal.
	WFM	**ENC**, R, G, B, SEQ, R&G, G&B, R&B, RGB	Selects the WFM connector output signal.
<GENLOCK PHASE> S02	CONTROL	(REMOTE), (LOCAL)	
	REFERENCE	(NONE), (EXT IN)	Displays the status of the reference signal input.
	GENLOCK	HD, **SD**	This unit's GEN LOCK mode: displays the lock status and format. **HD**: HD **SD**: SD
		(OK), (NG)	Sets the lock status of the external reference signal. **(OK)**: Locked **(NG)**: Unlocked
		External reference signal format	Displayed only when a reference signal is present.
	H STEP	When GENLOCK mode is HD: –3.01 to 3.45 µsec **0.00** When GENLOCK mode is SD: –8.29 to 9.48 µsec **0.00**	Horizontal phase (STEP) Displays the sub-reference signal format.
	COARSE	–99.9 to 99.9 **0**	Horizontal phase Displays the sub-reference signal format.
	V PHASE	**0** to 7	Vertical phase (line) Displays the sub-reference signal format.
	SUB-REF	(NONE), (EXT IN)	Displayed only when a sub-reference signal is present.
	Note Displayed only when HKCU1003 is connected	(UNKNOWN), (Frame Gate), (HD), (SD)	Sub-reference signal format display

SYSTEM OPERATION			
Page name Page No.	**Item**	**Settings**	**Description**
<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		
	HD	**1.001**, 1.000	Selects the operating frequency.
	SD	**(525NTSC)**, (625PAL)	
	CAMERA FORMAT	When FREQUENCY is set to 1.001: **1080/59.94I**, 1080/29.97PsF, 1080/23.98PsF, 720/59.94P When FREQUENCY is set to 1.000: 1080/50I, 1080/25PsF, 1080/24PsF, 720/50P	Selects the transmission format. **Note** Selectable items differ depending on the camera's supported format.
	FRAME CONVERT DELAY	0.8, 1.2, **1.6**	Sets the output delay for framerate-converted signals. (Displayed only when FREQUENCY HD is set to 1.001.)
	HD-SD DELAY	**Line**, Frame (1F), 0-Delay	Sets the phase output for SD signals down converted from this unit's HD signals.
	COMPONENT	RGB, **YCD**	Selects the component signal connector's output format. (Displayed only when HKCU1003 is installed.)
<OUTPUT FORMAT> S04	CAMERA TRANSMIT	When FREQUENCY HD is set to 1.001: **1080/59.94I**, 1080/29.97PsF, 1080/23.98PsF, 720/59.94P When FREQUENCY HD is set to 1.000: 1080/50I, 1080/25PsF, 1080/24PsF, 720/50P	Selects the output format. This setting works in conjunction with CAMERA FORMAT. **Note** Selectable items differ depending on the camera's supported format.
	SLOT2 (board name)		
	1&2	Output format*	Selects the output format for expansion slot 2's SDI OUT1/2 connector.
	3&4	Output format*	Selects the output format for expansion slot 2's SDI OUT3/4 connector.
	SLOT3 (board name)	Output format*	Selects the output format for expansion slot 3's SDI OUT connector.

* Use the charts on the following as an example of how to configure these settings. The settings differ depending on the boards connected to the expansion slots.

	1080/59.94I	**1080/29.97PsF**	**1080/23.98PsF**	**720/59.94P**
Slot2 1&2	1080/59.94I	1080/29.97PsF	1080/59.94I	720/59.94P
Slot2 3&4	M1080/59.94I	M1080/29.97PsF	M1080/59.94I	M720/59.94P
Slot3 1&2	525/59.94I	525/29.97PsF	525/59.94I	525/59.94I
Slot3 3&4	M525/59.94I	M525/29.97PsF	M525/59.94I	M525/59.94I

	1080/50I	**1080/25PsF**	**1080/24PsF**	**720/50P**
Slot2 1&2	1080/50I	1080/25PsF	1080/50I	720/50P
Slot2 3&4	M1080/50I	M1080/25PsF	M1080/50I	M720/50P
Slot3 1&2	625/50I	625/25PsF	625/50I	625/50I
Slot3 3&4	M625/50I	M625/25PsF	M625/50I	M625/50I

An "M" next to the output format indicates that a cable's character will be output with the signal.

SYSTEM OPERATION			
Page name Page No.	**Item**	**Settings**	**Description**
<SD ASPECT> S05	SD ASPECT	SQUEEZE, **EDGE CROP**, LETTER BOX	Selects the SD output aspect.
	SD LB SEL	**16:9**, 15:9, 14:9, 13:9	Selects the LETTER BOX aspect ratio.
	H-POSITION	–99 to 99, (–99) to (99) **0**	Sets the horizontal position. Settings in ( ): Displayed when SQUEEZE or LETTER BOX is selected in SD ASPECT. (Display only)
	CENTER	**ON**, OFF, (ON), (OFF)	Sets the horizontal centering position. Settings in ( ): Displayed when SQUEEZE or LETTER BOX is selected in SD ASPECT. (Display only)
	V-POSITION	–99 to 99, (–99) to (99) **0**	Sets the vertical position. Settings in ( ): Displayed when SQUEEZE or EDGE CROP is selected in SD ASPECT. (Display only)
	CENTER	ON, OFF, **(ON)**, (OFF)	Sets the vertical centering position. Settings in ( ): Displayed when SQUEEZE or EDGE CROP is selected in SD ASPECT. (Display only)
	H-INTERP	**A**, B, C, D, E	Selects the down converter horizontal filter.
	V-INTERP	**A**, B, C, D, E	Selects the down converter vertical filter.
<RETURN FORMAT> S06	RET1 RET2 RET3	When 1.001 is selected for FREQUENCY HD: **1080/59.94I (PsF)**, 1080/23.97PsF, 720/59.94P, 525/59.94I (PsF), NTSC	Sets the return signal input format. Sets input format, aspect ratio, and letterbox mode. The following shows selectable RETURN FORMAT settings at various OUTPUT FORMAT settings. **Note** RET4 is locked to NTSC or PAL.
	RET4	When 1.000 is selected for FREQUENCY HD: **1080/50I (PsF)**, 1080/24PsF, 720/50P, 625/50I (PsF), PAL When 525/59.94I (PsF), NTSC, 625/50I (PsF) or PAL are selected, the following settings are available: **SQUEEZE**, EDGE CROP, LETTER BOX, **16:9**, 15:9, 14:9, 13:9	
	AUTO SCAN	Execute via EXEC.	Automatically detects the return signal input format, and then executes. **Note** If the automatically detected result is invalid, the previous setting flashes for 5 seconds, and then the previous setting is maintained.
	LINK TO MAIN	**MANUAL**/AUTO	Sets the mode for linking the return signal to this signal.

OUTPUT FORMAT	RETURN FORMAT
1080/59.94I	1080/59.94I (PsF), 525/59.94I (PsF), NTSC
1080/29.97PsF	
1080/23.98PsF	1080/23.98PsF, 1080/59.94I (PsF), 525/59.94I (PsF), NTSC
720/59.94P	720/59.94P, 525/59.94I (PsF), NTSC
1080/50I	1080/50I (PsF), 625/50I (PsF), PAL
1080/25PsF	
1080/24PsF	1080/24PsF, 1080/50I (PsF), 625/50I (PsF), PAL
720/50P	720/50P, 625/50I (PsF), PAL

SYSTEM OPERATION			
Page name Page No.	**Item**	**Settings**	**Description**
<RETURN SETUP> S07	FRAME SYNCHRO	OFF, **ON**	Set the FRAME SYNCHRO function for the return signal to on/off.
	SD-RETURN		
	MATRIX	OFF, **ON**	Turn the HD matrix to the SD return signal on/off.
	LB LINE	360, **364**	Set the effective line setting for letterbox.
	ASPECT	**MANUAL**, AUTO	Sets the auto-linking function for this unit's aspect setting.
<CCU VIDEO> S08	VBS-CHROMA	OFF, **ON**	Turns the VBS output signal's cross signal on/off.
	MONO-COLOR	**OFF**, ON	Sets the MONO COLOR function on/off.
	PHASE	0 to 358, **0**	Adjusts the color phase for the MONO COLOR function.
	SATURATION	–99 to 99, **0**	Adjusts the color saturation for the MONO COLOR function.

CCU CONFIGURATION menu

CCU CONFIGURATION			
Page name Page No.	**Item**	**Settings**	**Description**
<COLOR BAR> C01	HD-BAR		
	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	Sets an HD output color bar.
	MF CB	**MODIFY**, EVEN	Sets a multi-format color bar.
	SLOPE	**WIDE**, NARROW	Sets the chroma band for a color bar.
	SD-BAR	For NTSC: **SMPTE**, EIA, FULL, 95%, NTSC100%, Y/C-RAMP, Y-RAMP For PAL: **SMPTE**, EIA, EBU, 95%, PAL100%, Y/C-RAMP, Y-RAMP	Sets SD output for a color bar.
		DSB, **ENB**	**DSB:** Down convert and display the HD color bar. **ENB:** Display the set SD color bar.
	BAR-CHARA	ON, **OFF**	Turns the signal for characters superimposed on a color bar 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		Sets strings 1 to 12 that are superimposed on the color bar signal.
	ALL CLEAR		Execute to clear all character strings. (Execute via ENTER.)

CCU CONFIGURATION			
Page name Page No.	**Item**	**Settings**	**Description**
<MONITOR 1> C03	CHARACTER		Sets the MONITOR output bar character.
	WHITE-LEVEL	0.0 to 107.0% **71.5**	Sets the MONITOR output bar character level.
	BLACK-LEVEL	**0.0** to 107.0%	Sets the MONITOR output bar character border black level.
	PIX CHARACTER		Sets the PIX output bar character. (Displayed only when HKCU1001/1003 is installed.)
	WHITE-LEVEL	0.0 to 107.0%, **75.0**	Sets the PIX output bar character level.
	BLACK-LEVEL	**0.0** to 107.0%	Sets the PIX output bar character border black level.
<MONITOR 2> C04	LEVEL GATE	**---**, 1&2, 1, 2, OFF	**1&2:** Displays level gate 1 & 2. **1:** Displays level gate 1. **2:** Displays level gate 2. **---:** Displayed when camera not connected, video output not set to CAMERA, or video output is set to CAMERA and GATE MARKER is ON. (Display only)
	Y-LEVEL1	0 to 108% **49** **61**	Sets the level gate 1 minimum and maximum detection level.
		–99 to 99 **–25**	Sets the level gate 1 zebra range.
	Y-LEVEL2	0 to 108% **74** **108**	Sets the level gate 2 minimum and maximum detection level.
		–99 to 99 **–25**	Sets the level gate 2 zebra range.
	GATE-MARKER	---, ON, **OFF**	Sets the gate signal display to ON/OFF. ---: Displayed when a camera is not connected.
		–99 to 99 **0**	Sets the gate signal level.
	MODULATION	---, ON, **OFF**	Sets the 4:3 aspect ratio mask function to ON/OFF when EDGE CROP is set to ON. ---: Displayed when a camera is not connected.
		–99 to 99 **0**	Sets the mask video level.
	MARKER	ON, **OFF**	Sets the marker signal to ON/OFF.
		4:3, 13:9, 14:9, EU VISTA, VISTA, CINEMA, FOLLOW DC	Selects a superimposed marker signal.
<I/F SETUP> C05	BOARD	FRONT, REAR	Display only
	SLOT1	(NONE) => (NONE)	Display only
	SLOT2	BOARD NAME DISPLAY	Detects and displays the boards installed to the front/rear of the CCU. (Display only)
	SLOT3	BOARD NAME DISPLAY	
	DSUB-15	**MIC-REMOTE**, WF-REMOTE	Sets the output for the MIC REMOTE connector.
	CHARA/SYNC	**CHARACTER**, SYNC	Sets the output for the CHARACTER/SYNC connector.
	REAR PREVIEW	**MOMENTARY**, TOGGLE	Selects the REAR PREVIEW output operating mode.
<MIC GAIN> C06	CAM MIC GAIN		Sets the microphone gain.
	CH1	---, 20, 30, 40, 50, **60** dB	Settings vary depending on microphones. **---:** Displayed when a camera is not connected. (Display only)
	CH2	---, 20, 30, 40, 50, **60** dB	
<AUDIO OUT> C07	DELAY	**0** to 3840FS	Sets the camera's microphone output phase.
	ANALOG OUT	**MIC 1/2**, AES, EBU	Selects the MIC OUT ANALOG output.
	CH1 LEVEL	**0**, +4, –20	Sets the AUDIO CH1 output level.
	ADJUST	–99 to 99 **0**	
	CH2 LEVEL	**0**, +4, –20	Sets the AUDIO CH2 output level.
	ADJUST	–99 to 99 **0**	

CCU CONFIGURATION			
Page name Page No.	**Item**	**Settings**	**Description**
<INTERCOM> C08	INTERCOM CH	1CH, **2CH**	Selects the intercom channel number.
	SYSTEM INTERFACE		
	PRODUCER	**4WIRE**, RTS, CLEAR COM	Sets the producer line intercom system.
	CANCEL LVL	–99 to 99 **0**	Sets the side tone cancel level.
	TERMINATION	**(OFF)**, ON	Connects to a 200 Ω terminator, if ON is selected while 2-wire intercom interface (RTS or CLEAR COM) is used. **(OFF):** Displayed when 4WIRE is selected in SYSTEM I/F. (Display only)
	ENGINEER	**4WIRE**, RTS, CLEAR COM	Sets the engineer line intercom system.
	CANCEL LVL	–99 to 99 **0**	Sets the side tone cancel level.
	TERMINATION	**(OFF)**, ON	Connects to a 200 Ω terminator, if ON is selected while 2-wire intercom interface (RTS or CLEAR COM) is used. **(OFF):** Displayed when 4WIRE is selected in SYSTEM I/F. (Display only)
	PGM1 INPUT	–20, **0**, +4 dBu	Sets the PGM1 input level.
	PGM2 INPUT	–20, **0**, +4 dBu	Sets the PGM2 input level.
<FRONT INCOM> C09		(MIC ON), (MIC OFF), (PGM ON)	CCU front panel MIC/PGM switch position. (Display only)
		(PROD), (ENG), (PRIVATE)	CCU front panel INTERCOM switch position. (Display only)
	INCOM MIC	CARBON, ECM, **DYNAMIC**	Sets the headset microphone connected to the INTERCOM connector on the front panel. **CARBON:** Carbon microphone (power supply, 20dB gain) **ECM:** Electret condenser microphone (power supply, 40dB gain) **DYNAMIC:** Dynamic microphone (no power supply, 60dB gain)
	MIC TYPE	BALANCE, **UNBALANCE**	Sets the headset microphone connected to the INTERCOM connector on the front panel. **BALANCE:** Balanced microphone **UNBALANCE:** Unbalanced microphone
	MIC GAIN	–6dB, **0dB**, +6dB	Sets the input gain.
	SIDE TONE	0 to 99 **50**	Sets the side tone level.
	PGM MIX	**OFF**, INCOM+PGM, L-INCOM/R-PGM	**OFF:** Signals are not mixed. **INCOM+PGM:** INCOM and PGM signals are mixed. **L-INCOM/R-PGM:** Outputs an INCOM signal through the left channel and a PGM signal through the right.
	PGM SEL	**PGM1**, PGM2, PGM1 + PGM2	Selects the PGM type.
	PGM1 LVL	0 to 99 **50**	Sets the PGM1 level.
	PGM2 LVL	0 to 99 **50**	Sets the PGM2 level.

CCU CONFIGURATION			
Page name Page No.	**Item**	**Settings**	**Description**
<PROMPT/TRUNK> C10	PROMPTER	1CH	Displays the number of prompter lines.
	TRUNK SETTINGS	(38Kbps), (19Kbps)	Displays the TRUNK line. (Display only)
	CH	1CH, **2CH**	Sets the number of channels to be used.
	IF	**232C**, 422A	Sets the communication line mode.
	TRANSMIT	**(HD-SDI)**	Sets the optical transmission rate between the camera and CCU.
	CABLE	**CAMERA CABLE**, COAX	Sets the transmission format between the camera and CCU.
	AUX REMOTE	**DISABLE**, ENABLE	Sets whether or not AUX REMOTE is used.
<VIDEO SETUP> C11	SETUP	**ON**, OFF, ---	**ON:** Adds a setup signal to VBS and SD YCD component signal Ych-SYNC. **OFF:** No setup signal is added. **---:** Displayed when the format is PAL. (Display only)
	SD BLK CLP	OFF, **ON**	Y signals from SD SDI output that are less than 0% are clipped at 0%.
	Q FILTER	**WD**, NA	Sets the Q filter bandwidth. (Displayed only when HKCU1001 or HKCU1003 is installed.)
	G/Y SYNC	**OFF**, ON	Sets the R/G/B component signal's G ch-SYNC to on/off. (Displayed only when HKCU1001 or HKCU1003 is installed.)
	VCS RELAY	OFF, **ON**	Sets the PIX/WFM connector output. (Displayed only when HKCU1001 or HKCU1003 is installed.)
<VIDEO ADJUST 1> C12 (Available when a HKCU1001 or HKCU1003 board is installed)	VBS		
	LEVEL	–99 to 99, **0**	Adjusts the VBS output video level.
	CHROMA	–99 to 99, **0**	
	PIX		
	LEVEL	–99 to 99, **0**	Adjusts the PIX output video level.
	CHROMA	–99 to 99, **0**	
	WFM		
	LEVEL	–99 to 99, **0**	Adjusts the WFM output video level.
	CHROMA	–99 to 99, **0**	
(Available when yet another VDA board from the HKCU1003 is installed to the option slot)	G/Y LEVEL	–99 to 99, **0**	Adjusts the G/Y output video level.
	B/B-Y LEVEL	–99 to 99, **0**	Adjusts the B/B-Y output video level.
	R/R-Y LEVEL	–99 to 99, **0**	Adjusts the R/R-Y output video level.

CCU CONFIGURATION			
Page name Page No.	**Item**	**Settings**	**Description**
<MENU SETTING> C13	RESUME	**ON**, OFF	Turns ON/OFF the menu mode resume page display function.
	ALARM JUMP	ON, **OFF**	Turns ON/OFF the error-related page display function for when an error occurs while in menu mode.
	RE DIRECTION		CONTROL knob operating mode settings
	CATEGORY	**STD**, RVS	**STD:** CONTROL knob clockwise rotation moves the CCU MENU pointer (➡) down. **RVS:** CONTROL knob counterclockwise rotation moves the CCU MENU pointer (➡) 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 pointer (➡) down to the next item on the page. **RVS:** CONTROL knob counterclockwise rotation moves the pointer (➡) 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.
<DISPLAY> C14 Turn camera messages and switch settings ON/OFF for the camera's 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.
	MASTER GAIN	**ON**, OFF	Displays or hides the master gain indication.
	EVS/SHUTTER	**ON**, OFF	Displays or hides the ECS/shutter indication.
	ND FILTER	**ON**, OFF	Displays or hides the ND filter indication.
	IRIS	**ON**, OFF	Displays or hides the IRIS indication.
	EXTENDER	**ON**, OFF	Displays or hides the EXTENDER indication.
<DATE> C15	DATE/TIME	20YY/MM/DD hh:mm	Sets the date and time.
	TIME ZONE	hh:mm –11h59m to +11h59m	Sets the time zone.
<TALLY INPUT> C16	R-TALLY	**CONTACT**, POWER (24V), POWER (TTL)	RED tally input setting
	G-TALLY	**CONTACT**, POWER (24V), POWER (TTL)	GREEN tally input setting
	Y-TALLY	**CONTACT**, POWER (24V), POWER (TTL)	YELLOW tally input setting

CCU CONFIGURATION			
Page name Page No.	**Item**	**Settings**	**Description**
<OTHERS> C17	BOARD SELECT	**DRX1**, DRX2, DRX3, DRX4, RC	Selects the board to set.
	EMBED AUDIO	**ON**, OFF	Sets superimposition of audio data to ON/OFF.
	META DATA EMB	**OFF**, ON	Sets superimposition of metadata to ON/OFF.
	VIDEO PAYLOAD	**NEW**, OLD	Sets the VIDEO ID.
	INTER LOCK	**OFF**, ON	SDI output (3, 4) format linking function
	SYNC OUT	**SD SYNC**, HD SYNC	Sets the SYNC OUT connector.
	REF 10F BB	**OFF**, ON	Sets the 10F BB function.
	CCU NO	**0**, 0 to 96, A to Z	Sets the CCU number.
	ASSIGNABLE	**NONE**, BARS, CLEAN, CAM POWER, FORCE LEGACY, REF LOCAL HD, REF LOCAL SD	Sets the function for the assignable button. **NONE:** No assignment. **BARS:** Sets the color bar output to ON/OFF. **CLEAN:** Sets character superimposition for all output slots to ON/OFF. **CAM POWER:** Sets camera power to ON/OFF. **FORCE LEGACY:** Forces the communication mode to LEGACY mode. **REF LOCAL HD:** Sets GENLOCK to LOCAL HD. **REF LOCAL SD:** Sets GENLOCK to LOCAL SD.
	CAM MENU	**OFF**, ON	Displays the Camera menu. **Notes** • If CAM MENU is set to ON, CCU CONFIGURATION menu operations cannot be performed because only Camera menu operations are available. • The Camera menu is not displayed when SD signal is output.
<ALARM SETTING> C18	FORCE LEGACY	OFF, **ON**	Set to OFF to not display the FORCE LEGACY alarm.
	SUB REF NONE	OFF, **ON**	Set to OFF to not display the REF NONE alarm.
	SUB REF INVALID	OFF, **ON**	Sets to OFF to not display the REF INVALID alarm.

NETWORK SETTINGS menu

NETWORK SETTINGS			
Page name Page No.	**Item**	**Settings**	**Description**
<IP ADDR SET> N01	HOST IP ADDRESS	**0.0.0.0** to 255.255.255.255	Displays the IP address.
	SUB NET MASK	**0.0.0.0** to 255.255.255.254	Displays the subnet mask.
	DEFAULT GATEWAY	**0.0.0.0** to 255.255.255.255	Displays the default gateway.
	SET		A “SET OK?” message is displayed. Press ENTER again to confirm the change. (Execute via ENTER.)

NETWORK SETTINGS			
Page name **Page No.**	**Item**	**Settings**	**Description**
<LAN SETTING> N02	AUTO NEGOTIATION	**ON**, OFF	Selects whether to automatically set the connection speed and communication system according to the device connected.
	AUTO MDIX	**ON**, OFF	Sets the communication line.
	CONNECT CONFIGURATION		
	CONNECTION SPEED	10M, **100M**	Selects the connection speed. **10M:** 10BASE-TX **100M:** 100BASE-TX Available only when OFF is selected in AUTO NEGOTIATION.
	DUPLEX MODE	HALF, **FULL**	Selects the communication system. **HALF:** Half-duplex communication. **FULL:** Full-duplex communication. Available only when OFF is selected in AUTO NEGOTIATION.
	MDI/MDIX SELECT	**MDI**, MDIX	Selects the communication line.
	LINK CONDITION	(DOWN), (UP)	Displays connection status. (Display only) **(DOWN):** Connection failure **(UP):** Connection successful
	SET		A “SET OK?” message is displayed. Press ENTER again to confirm the change. (Execute via ENTER.)
<CNS SETTING> N03	CNS MODE	**LEGACY**, BRIDGE, MCS	Sets the communication mode.
	MCS MODE	(CLIENT)	Displays that the CCU is a CLIENT.
	CCU NO	blank, 1 to 96	Sets the CCU number.
	MASTER IP ADDRESS	**0.0.0.0** to 255.255.255.255	Sets the master device’s IP address for MCS mode.
<NETWORK RESET> N04	ALL RESET		A “NET SETTINGS RESET OK?” message is displayed. Press ENTER again to reset NETWORK SETTINGS menu items to factory default values. (Execute via ENTER.)

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: –10 to +40°C (14 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 this 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

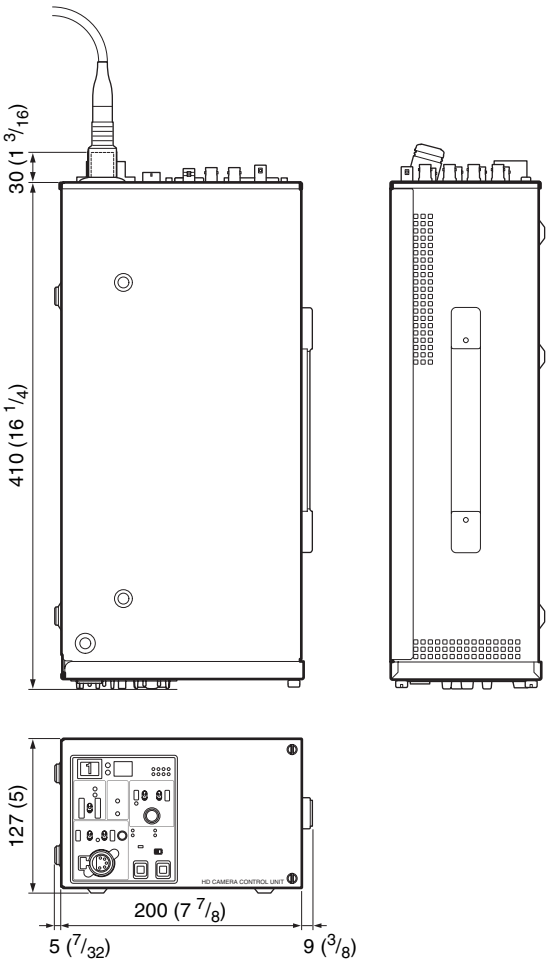
When an error is detected in this unit or the camera, the ALARM indicator turns on and an error message is displayed on this unit.

Error message	Indication
CCU:GEN LOCK NG	External reference sync error
CCU:DRX NG	Front DRX 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 optical fiber cable short circuit error
CCU:PS CABLE OPEN	CAMERA connector optical fiber cable open circuit error
CCU:PS RCP PWR SUPPLY NG	Remote control panel (connected to REMOTE connector) power supply error
CCU:RX WARNING	Transmission error between camera and CCU

Specifications

HDCU1700

General	
Power supply	100 to 240 V AC, 50/60 Hz
Current consumption	4.1 A (max.)
Standby power	Approx. 5 W
Inrush current	(1)Maximum possible inrush current at initial switch-on (Voltage changes caused by manual switching): 82 A peak, 9 A r.m.s. (240V AC) (2)Inrush current after a mains interruption of five seconds (Voltage changes caused at zero-crossing): 15 A peak, 5 A r.m.s. (240V AC)
Operating temperature	–10°C to +40°C (+14°F to 104°F)
Storage temperature	–20°C to +60°C (–4°F to 140°F)
Mass	Approx. 6.7 kg (14 lb 12 oz)
Dimensions (Unit: mm (inches))	



Input/Output connectors	
CAMERA	Optical fiber connector (1) 180 V DC power supply
INTERCOM/TALLY/ PGM	D-sub 25-pin connector (1) • INTERCOM (PROD/ENG), 4W/RTS/CC, 0 dBu • PGM, 2 systems, 0 dBu/–20 dBu • TALLY (R, G, Y)
RCP/CNU	8-pin multi-connector (1)
TRUNK A	12-pin (1)
LAN	8-pin (1)
Input connectors	
AC IN	(1), 100 to 240 V AC
RET 1, 2, 3	BNC-type (3) HD-SDI: SMPTE 292M, 1.485 Gbps/1.4835 Gbps SD-SDI: SMPTE 259M, 270 Mbps VBS: 1.0 Vp-p, 75 ohms
REFERENCE	BNC-type (2), loop-through output HD: SMPTE 274M, tri-level sync, 0.6 Vp-p, 75 ohms SD: Black burst (NTSC: 0.286 Vp-p, 75 ohms/PAL: 0.3 Vp-p, 75 ohms) or NTSC 10F-BB
PROMPTER	BNC-type (2), loop-through output, analog signal, 1.0 Vp-p, 75 ohms
MIC REMOTE	D-sub 15-pin (1) (JAE-made DA-C1-J10 recommended) (switchable to WF REMOTE by an internal setting)
Output connectors	
AUDIO OUT CH1, CH2	XLR 3-pin, male (2), 0 dBu/–20 dBu/+4 dBu
HD/SD SDI OUTPUT	BNC-type (2) HD-SDI: SMPTE 292M, 0.8 Vp-p, 75 ohms, 1.485 Gbps/1.4835 Gbps SD-SDI: SMPTE 259M, 0.8 Vp-p, 75 ohms, 270 Mbps HD-SDI/SD-SDI selectable
HD/SD SDI OUTPUT (MONI)	BNC-type (2) HD-SDI: SMPTE 292M, 0.8 Vp-p, 75 ohms, 1.485 Gbps/1.4835 Gbps SD-SDI: SMPTE 259M, 0.8 Vp-p, 75 ohms, 270 Mbps HD-SDI/SD-SDI and character ON/OFF selectable
CHARACTER/SYNC	BNC-type (1) HD SYNC: HD, BTA-S001, tri-level sync, 0.6 Vp-p, 75 ohms SD SYNC: SD, composite sync, 0.3 Vp-p, 75 ohms CHARACTER: VBS, 1 Vp-p, 75 ohms, character ON/OFF selectable CHARACTER/HD SYNC/SD SYNC selectable

Supplied accessories
Number plates (1 set)
Operation manual (1)
Optional accessories
AC power cord: USA and Canada: 1-551-812-XX Other countries: 1-782-929-XX
Power cord plug holder USA and Canada: 2-990-242-01 Other countries: 3-613-640-01
HKCU2007 3G/HD SDI Output Expansion Unit
HKCU1001 SD Encoder Unit
HKCU1003 Multi Interface Unit
CCA-5-3 Connection Cable (3 meters/10 feet) CCA-5-10 Connection Cable (10 meters/33 feet)
RMM-301 Rack Mount Adaptor
Expansion Board
Maintenance manual

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® FUW.3K.93C.TLMC96 (to the “CCU” connector on CAMERA)

Caution on the optical/electric composite cable:
For connection between the camera control unit and a camera, 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® FUW.3K.93C.TLMC96 (au connecteur «CCU» de la caméra)

Attention concernant le câble optique/électrique composite:
Pour la connexion entre l’unité de commande de caméra et une caméra, 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® FUW.3K.93C.TLMC96 (an „CCU“-Anschluss an der KAMERA)

Vorsichtsmaßregeln für optische/elektrische FBAS-Kabel:
Für Verbindung zwischen Kamerasteuereinheit und Kamera verwenden Sie immer ein optisches/elektrisches FBAS-Kabel mit Steckern, wie in dieser Anleitung beschrieben, um die Grenzwerte der geltenden EMV-Vorschriften zu erfüllen.

Related devices
HDC1700 Color Video Camera
RCP-1000 series Remote Control Panel
MSU-1000 series Master Setup Unit
CNU-700 Camera Command Network Unit
HZC-CSM10 Camera System Management Software

Design and specifications are subject to change without notice.

HKCU2007 (optional)

General	
Power supply	5.5 W
Operating temperature	–10°C to +40°C (+14°F to 104°F)
Storage temperature	–20°C to +60°C (–4°F to 140°F)
Dimensions (w/h/d)	DRX board: Approx. 19 × 110 × 226 mm (3/4 × 4 3/8 × 8 7/8 inches) HIF board: Approx. 19 × 98 × 159 mm (3/4 × 3 7/8 × 6 1/4 inches)
Mass	DRX board: Approx. 0.24 kg (8 oz) HIF board: Approx. 0.09 kg (3 oz)
Output connectors	
HIF board	
SDI OUT	BNC-type (4) 3G-SDI: SMPTE 424M/425M Level-B standard, 0.8 Vp-p, 75 ohms, 2.970 Gbps/ 2.967 Gbps HD-SDI: SMPTE 292M, 0.8 Vp-p, 75 ohms, 1.485 Gbps/1.4835 Gbps 3G-SDI/HD-SDI selectable Character ON/OFF selectable (connectors 3/4)

Note

The HDCU1700 does not support 3G-SDI.

Design and specifications are subject to change without notice.

HKCU1001 (optional)

General	
Power supply	2.5 W
Operating temperature	–10°C to +40°C (+14°F to 104°F)
Storage temperature	–20°C to +60°C (–4°F to 140°F)
Dimensions (w/h/d)	EN-A board: Approx. 19 × 110 × 226 mm (3/4 × 4 3/8 × 8 7/8 inches) VDA-A board: Approx. 19 × 98 × 159 mm (3/4 × 3 7/8 × 6 1/4 inches)
Mass	EN-A board: Approx. 0.22 kg (7.8 oz) VDA-A board: Approx. 0.10 kg (3.5 oz)
Output connectors	
VDA-A board	
VBS	BNC-type (2), 1.0 Vp-p, 75 ohms, VBS
PIX OUT	BNC-type (1), VBS/R/G/B (VBS 1.0 Vp-p, 75 ohms)
WF OUT	BNC-type (1), VBS/R/G/B/SEQ (VBS 1.0 Vp-p, 75 ohms)
Supplied accessories	
4-pin connector (1)	

Design and specifications are subject to change without notice.

HKCU1003 (optional)

General	
Power supply	3.6 W
Operating temperature	–10°C to +40°C (+14°F to 104°F)
Storage temperature	–20°C to +60°C (–4°F to 140°F)
Dimensions (w/h/d)	EN-B board: Approx. 19 × 110 × 226 mm (3/4 × 4 3/8 × 8 7/8 inches) VDA-A/B/C board: Approx. 19 × 98 × 159 mm (3/4 × 3 7/8 × 6 1/4 inches)
Mass	EN-B board: Approx. 0.22 kg VDA-A/B/C board: Approx. 0.10 kg
Output connectors	
VDA-A board	
VBS	BNC-type (2), 1.0 Vp-p, 75 ohms, VBS
PIX OUT	BNC-type (1), VBS/R/G/B (VBS 1.0 Vp-p, 75 ohms)
WF OUT	BNC-type (1), VBS/R/G/B/SEQ (VBS 1.0 Vp-p, 75 ohms)
VDA-B board	
FRAME REF IN	BNC-type (1) HD: SMPTE 274M, tri-level sync input, 0.6 Vp-p, 75 ohms SD: Black burst input, 0.286 Vp-p, 75 ohms
FRAME REF OUT	BNC-type (1) Loop-through output or frame sync pulse output, 0.3 Vp-p, 75 ohms, switchable
PIX OUT	BNC-type (1), VBS/R/G/B (VBS 1.0 Vp-p, 75 ohms)
WF OUT	BNC-type (1), VBS/R/G/B/SEQ (VBS 1.0 Vp-p, 75 ohms)
VDA-C board	
VBS	BNC-type (2), 1.0 Vp-p, 75 ohms, VBS
R/R-Y, G/Y, B/B-Y	BNC-type (3) • RGB video R/G/B (100% white): 0.7 Vp-p, 75 ohms • Component video Y (100% white): 0.714 Vp-p R-Y/B-Y (75% color bar): 0.756 Vp-p, 75 ohms
Supplied accessories	
4-pin connector (1)	

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.

For Customer in China

根据中华人民共和国信息产业部第39号令《电子信息产品污染控制管理办法》及标准中要求的“有毒有害物质或元素名称及含量”等信息，本产品相关信息请参考以下链接:
http://pro.sony.com.cn

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