

HITACHI

CAMERA CONTROL UNIT
CU-HD1000

OPERATING INSTRUCTIONS

Please read these operating instructions carefully for proper operation,
and keep them for future reference.

Hitachi Kokusai Electric Inc.

Declaration of Conformity

Manufacturer's Name: Hitachi Kokusai Electric Inc.
Manufacturer's Address: 4-14-1 Sotokanda, Chiyoda-ku,
 Tokyo 101-8980, Japan

Representative(s) Address in the EU: Hitachi Kokusai Electric Europe GmbH
 Siemensstr. 9, D-63263 Neu-Isenburg,
 Germany

Hitachi Kokusai Electric U.K. Ltd.
 Windsor House, Britannia Road, Waltham Cross,
 Herts.EN8 7NX, United Kingdom

declares, that the product:

Product Name: Camera Control Unit
Model Number(s): CU-HD1000E

Product Name: View Finder
Model Number(s): VF-402E(R1)

conforms to the following Standards:

EMC: EN 55103-1:1997 class E3
 EN 55103-2:1997 class E3

LVD: EN 60065:1998 + Amd1

Supplementary Information:

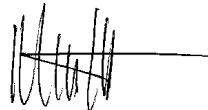
“The product complies with the requirements of the Low Voltage Directive 2006/95/EC and the EMC Directive 2004/108/EC.”

Signature:



Y. Yamada

Senior Manager
 Quality Assurance Department II
 Quality Assurance Center
 Hitachi Kokusai Electric Inc.



M. Katou

Managing Director
 Hitachi Kokusai Electric Europe GmbH
 Hitachi Kokusai Electric U.K. Ltd.

Date: 21 January, 2009

ET-E041

ES-E015

Note: The model and serial numbers of your product are important for you to keep for your convenience and protection. These numbers appear on the nameplate located on the bottom of the product. Please record these numbers in the spaces provided below, and retain this manual for future reference.

Model No. _____

Serial No. _____

SAFETY INSTRUCTIONS

Carefully read all safety messages in this manual and safety Instructions on your equipment. Follow recommended precautions and safe operating practices.

SAFETY ALERT SYMBOL



This is the "Safety Alert Symbol." This symbol is used to call your attention to items or operations that could be dangerous to you or other persons using this equipment. Read these messages and follow these instructions carefully.

It is essential that you read the instructions and safety regulations before you attempt to assemble or use this equipment.

The definitions of signal words are as follows:



WARNING: Personal danger

Warning notes indicate any condition or practice, which if not strictly observed, could result in personal injury or possible death.



CAUTION: Possible damage to equipment

Caution notes indicate any condition or practice, which if not strictly observed or remedied, could result in damage or destruction of the equipment.

NOTE

NOTE: Notes indicate an area or subject of special merit, emphasizing either the product's capabilities or common errors in operation or maintenance.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS COLOR CAMERA TO RAIN OR MOISTURE.

AVERTISSEMENT

Afin d'éviter tout risque d'incendie ou d'électrocution, ne pas exposer l'appareil à la pluie ou à l'humidité.

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

VORSICHT

Um Feuergefahr und die Gefahr eines elektrischen Schlags zu vermeiden, darf das Gerät weder Regen noch Feuchtigkeit ausgesetzt werden.

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

IMPORTANT SAFETY INSTRUCTIONS

1. Read Instructions

All the safety and operating instructions should be read before the product is operated.

2. Retain Instructions

The safety and operating instructions should be retained for future reference.

3. Heed Warnings

All warnings on the product and the operating instructions should be adhered to.

4. Follow Instructions

All operating and use instructions should be followed.

5. Cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6. Attachments

Do not use attachments not recommended by the product manufacturer as they may cause hazards.

7. Water and Moisture

Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.

8. Accessories

Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

9. Moving

A product and cart combination should be moved with care.

Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

10. Ventilation

Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered.

The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

11. Power Sources

This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

12. Grounding or Polarization

This product is equipped with a three-wire grounding-type plug a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

13. Power-Cord Protection

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plug, convenience receptacles, and the point where they exit from the product.

14. Lightning

For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This will prevent damage to the product due to lightning and power-line surges.

15. Overloading

Do not overload wall outlets, extension cords or integral convenience receptacles as this can result in a risk of fire or electric shock.

16. Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

17. Inflammable and Explosive Substance

Avoid using this product where there are gases, and also where there are inflammable and explosive substances in the immediate vicinity.

18. Heavy Shock or Vibration

When carrying this product around, do not subject the product to heavy shock or vibration.

19. Servicing

Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

20. Damage Requiring Service

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- a. When the power-supply cord or plug is damaged.
- b. If liquid has been spilled, or objects have fallen into the product.
- c. If the product has been exposed to rain or water.
- d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
- e. If the product has been dropped or damaged in any way.
- f. When the product exhibits a distinct change in performance-this indicates a need for service.

21. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part.

Unauthorized substitutions may result in fire, electric shock, or other hazards.

22. Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

23. Wall or Ceiling Mounting

The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

24. Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

WICHTIGE SICHERHEITSANWEISUNGEN

1. Alle Anweisungen lesen.

Vor Betrieb des Erzeugnisses sollten alle Sicherheits- und Bedienungsanleitungen gelesen werden.

2. Die Anweisungen aufbewahren.

Die Sicherheits- und Bedienungsanleitungen sollten fünfjährigen Bezug aufbewahrt werden.

3. Warnungen beachten.

Die Warnungen auf dem Erzeugnis und in den Bedienungsanleitungen sollten beachtet werden.

4. Anweisungen befolgen.

Alle Bedienungsanleitung- und Verwendungsanweisungen sollten befolgt werden.

5. Reinigung

Den Stecker des Geräts vor Reinigung aus der Steckdose ziehen. Keine flüssigen Reinigungsmittel oder Aerosolreiniger verwenden. Zum Reinigen einen feuchten Lappen verwenden.

6. Zubehör

Nur vom Hersteller des Erzeugnisses empfohlenes Zubehör verwenden, da es sonst zu Störungen kommen kann.

7. Wasser und Feuchtigkeit

Dieses Erzeugnis nicht in der Nähe von Wasser verwenden - z.B. in der Nähe einer Badewanne, eines Waschbeckens, einer Küchenspüle, eines Waschzubehörs, in einem nassen Keller, in der Nähe eines Schwimmbeckens usw.

8. Aufstellung

Das Erzeugnis nicht auf einen unstabilen Wagen, Stand, Dreifuß, Träger oder Tisch stellen.

Das Erzeugnis kann sonst herunterfallen und ein Kind oder einen Erwachsenen schwer verletzen.

Außerdem kann das Gerät schwer beschädigt werden. Nur mit einem Wagen, Stand, Dreifuß, Träger oder Tisch verwenden, der vom Hersteller empfohlen oder mit dem Erzeugnis verkauft worden ist. Für jegliche Anbringung sollten die Anweisungen des Herstellers befolgt werden, und das vom Hersteller empfohlene Anbringungszubehör sollte verwendet werden.

9. Eine Kombination von Erzeugnis und Wagen sollte vorsichtig bewegt werden.

Schneller Halt, übermäßige Krafteinwirkung und unebene Oberflächen können Umkippen der Kombination von Erzeugnis und Wagen verursachen.

10. Ventilation

Schlitze und Öffnungen im Gehäuse dienen der Ventilation. Sie sind für zuverlässigen Betrieb des Gerätes und Schutz vor Überhitzung erforderlich und dürfen nicht blockiert oder abgedeckt werden.

Die Öffnungen sollten niemals dadurch blockiert werden, daß das Gerät auf ein Bett, ein Sofa, einen Teppich oder eine ähnliche Oberfläche gestellt wird.

Das Gerät sollte nur dann in Einbauinstallation wie in einem Bücherschrank oder einem Gestell verwendet werden, wenn angemessene Ventilation vorgesehen ist bzw. Die Anweisungen des Herstellers befolgt worden sind.

11. Stromversorgung

Dieses Erzeugnis sollte nur an der auf dem Typenschild angegebenen Stromversorgungsart betrieben werden. Wenn Sie nicht sicher sind, was für eine Stromversorgung Sie haben, so wenden Sie sich bitte an Ihren Erzeugnishändler oder an das lokale Elektrizitätswerk. Beziehen Sie sich für Batteriebetrieb oder andere Stromquellen vorgesehene Erzeugnisse bitte auf die Bedienungsanleitungen.

12. Erdung oder Polarisierung

Dieses Erzeugnis ist mit einem Schutzkontaktstecker mit drei Leitern ausgerüstet, mit einem Erdungskontakt. Dieser Stecker paßt nur in ein schuko-Steckdose. Dies ist eine Sicherheitsmaßnahme. Wenn Sie den Stecker nicht in die Steckdose stecken können, so wenden Sie sich bitte an ihren Elektriker, damit er die veraltete Schutz des Schutzkontaktsteckers unwirksam.

13. Netzkabelschutz

Netzkabel sollten so verlegt werden, daß möglichst nicht darauf getreten wird und daß sie nicht eingeklemmt werden, mit besonderer Beachtung der Kabel an Stackern, Verlängerungskabeln und dem Austritt des Kabels aus dem Erzeugnis.

14. Blitzschlag

Für zusätzlichen Schutz des Erzeugnisses während eines Gewitters oder bei Nichtverwendung für lange Zeit den Stecker aus der Steckdose ziehen. Dies verhindert Beschädigung durch Blitzschlag und Netzspannungstöße.

15. Überlastung

Wandsteckdosen, Verlängerungskabel und eingebaute Bequemlichkeitssteckdosen nicht überlasten, da dies Feuer oder elektrischen Schlag verursachen kann.

16. Eindringen von Fremdkörpern und Flüssigkeit

Niemals Objekte irgendwelcher Art durch die Öffnungen in das Gerät schieben, da diese unter hoher Spannung stehende Teile berühren oder kurzschließen können, wodurch es zu Feuer oder elektrischem Schlag kommen kann. Niemals Flüssigkeiten irgendwelcher Art auf das Erzeugnis verschütten.

17. Entflammbare und explosive Substanzen

Vermeiden Sie Verwendung dieses Erzeugnisses an Orten mit Gasen bzw. entflammbaren oder explosiven Substanzen in der direkten Umgebung.

18. Starke stöße oder Vibrationen

Setzen Sie das Erzeugnis beim Transport nicht starken Stößen oder Vibrationen aus.

19. Wartung

Versuchen Sie nicht, dieses Erzeugnis selbst zu warten, da Sie sich durch Öffnen bzw. Entfernen von Abdeckungen hohen Spannungen und sonstigen Gefährdungen aussetzen können.

Beziehen Sie sich für jegliche Wartung auf qualifiziertes Wartungspersonal.

20. Beschädigung, die Wartung erfordert

Ziehen Sie den Stecker dieses Erzeugnisses aus der Steckdose und wenden Sie sich an qualifiziertes Wartungspersonal, wenn eine der folgenden Bedingungen vorliegt:

- a. Wenn das Netzkabel oder der Stecker beschädigt ist.
- b. Bei Eindringen von Flüssigkeit oder Fremdkörpern in das Gerät.
- c. Wenn das Erzeugnis Regen oder Wasser ausgesetzt worden ist.
- d. Wenn das Erzeugnis bei Befolgen der Bedienungsanleitungen nicht normal funktioniert.

Nur die Regelelemente verstellen, die in den Bedienungsanleitungen behandelt werden, da unangemessene Einstellung anderer Regelelemente Beschädigung verursachen kann und oft beträchtliche Arbeit durch einen qualifizierten Techniker erfordert, um das Erzeugnis wieder, zu normalem Betrieb zurückzubringen.

- e. Wenn das Erzeugnis fallen gelassen oder beschädigt worden ist.
- f. Wenn das Erzeugnis eine klare Änderung in der Leistung zeigt-dies weist darauf hin, daß Wartung erforderlich ist.

21. Ersatzteile

Wenn Ersatzteile erforderlich sind, darauf achten, daß der Wartungstechniker nur die vom Hersteller festgelegten Ersatzteile oder Teile mit den gleichen Charakteristiken wie die ursprünglichen Teile verwendet. Unautorisierte Ersatzteile können Feuer, elektrischen Schlag oder sonstige Gefährdungen verursachen.

22. Sicherheitsprüfung

Bitten Sie den Wartungstechniker nach der Vollendung von Wartung oder Reparaturarbeiten an diesem Erzeugnis um die Durchführung von Sicherheitsprüfungen, um zu bestimmen, daß das Erzeugnis im angemessenen Betriebszustand ist.

23. Anbringung an der Wand oder an der Decke

Das Erzeugnis sollte nur entsprechend den Empfehlungen des Herstellers an einer Wand oder an der Decke angebracht werden.

24. Wärme

Das Erzeugnis sollte fern von Wärmequellen wie Radiatoren, Heizwiderständen, Öfen und anderen Wärme erzeugenden Erzeugnissen (einschließlich Verstärkern) aufgestellt werden.

MISES EN GARDE IMPORTANTES

1. Lire les instructions

Lire toutes les instructions de sécurité et de fonctionnement avant de faire fonctionner l'appareil.

2. Conserver ces instructions

Conserver les instructions de sécurité et de fonctionnement à des fins de référence ultérieure.

3. Tenir compte des avertissements

Tous les avertissements qui figurent sur l'appareil et dans le mode d'emploi devront être respectés.

4. Observer les instructions

Observer toutes les instructions de fonctionnement et d'utilisation.

5. Nettoyage

Avant de procéder au nettoyage, débrancher l'appareil de la prise secteur. Ne pas utiliser de produits de nettoyage liquides ou en aérosol.

Nettoyer l'appareil avec un chiffon humide.

6. Fixations

Ne pas utiliser de fixations non recommandées par le fabricant de l'appareil car elles pourraient être source de danger.

7. Eau et humidité

Ne pas utiliser l'appareil à proximité d'eau-par exemple près d'une baignoire, d'un lavabo, d'un évier ou d'un bac à lessive, dans un sous-sol humide, ou près d'une piscine, etc.

8. Accessoires

Ne pas placer l'appareil sur un chariot, un socle, un pied, un support ou une table instables. L'appareil pourrait tomber, blessant grièvement des enfants ou des adultes, et étant sérieusement endommagé.

Utiliser exclusivement le chariot, le socle, le pied, le support ou la table recommandés par le fabricant, ou vendus avec l'appareil. Pour tout montage de l'appareil, respecter les instructions du fabricant, et utiliser à cette fin l'accessoire de montage recommandé par le fabricant.

9. L'appareil monté sur son chariot devra être déplacé avec précaution.

Des arrêts brusques, une force excessive et des surfaces irrégulières pourraient provoquer le renversement de l'ensemble appareil-chariot.

10. Ventilation

Les fentes et les ouvertures du coffret sont prévues pour la ventilation ainsi que pour garantir un fonctionnement en toute sécurité de l'appareil et le protéger de toute surchauffe, et ces ouvertures ne devront donc être ni obstruées ni recouvertes. Ne jamais obstruer les ouvertures en plaçant l'appareil sur un lit, un sofa, un tapis ou toute surface similaire. Ne jamais placer l'appareil dans un support confiné, par exemple une bibliothèque ou une étagère, sans ventilation suffisante ou sans respecter les instructions du fabricant.

11. Sources d'alimentation

L'appareil devra être alimenté exclusivement sur le type d'alimentation indiqué sur l'étiquette signalétique. Si l'on n'est pas sûr du type d'alimentation du local, consulter le revendeur de l'appareil ou la compagnie d'électricité locale. Pour les appareils qui fonctionnent sur batterie ou sur d'autres sources, voir le mode d'emploi.

12. Mise à la terre ou polarisation

L'appareil est doté d'une fiche trifilaire avec mise à la terre, dont la troisième broche assure la mise à la terre. Cette fiche ne rentrera que dans les prises trifilaires de mise à la terre. Ceci est une mesure de sécurité. Si la fiche ne rentre pas dans la prise, faire remplacer la prise défectueuse par un électricien.

Ne pas rendre vaine la mesure de sécurité assurée par cette prise avec mise à la terre.

13. Protection du cordon d'alimentation

Acheminer les cordons d'alimentation de façon qu'on ne risque pas de marcher dessus ou de les coincer sous un objet placé dessus ou contre eux.

Faire particulièrement attention aux fiches des cordons, à la proximité des prises, et à l'endroit où ils ressortent de l'appareil.

14. Foudre

Pour renforcer la protection de l'appareil pendant un orage, ou si l'on s'en éloigne ou qu'on reste longtemps sans l'utiliser, le débrancher de la source d'alimentation. Ceci permettra d'éviter tout dommage de l'appareil dû à la foudre et aux surtensions de ligne.

15. Surcharge

Ne pas surcharger les prises, rallonges et prises multiples car cela pourrait entraîner un risque de feu ou de choc électrique.

16. Pénétration d'objets et de liquides

Ne jamais enfoncer d'objets d'aucune sorte dans les ouvertures de l'appareil car ils pourraient toucher des points de tension dangereuse ou court-circuiter des pièces, ce qui pourrait provoquer un feu ou un choc électrique. Ne jamais renverser de liquide d'aucune sorte sur l'appareil.

17. Substances inflammables et explosives

Eviter d'utiliser l'appareil en présence de gaz, ainsi qu'à proximité immédiate de substances inflammables et explosives.

18. Chocs ou vibrations violents

Lorsqu'on transporte l'appareil, ne pas le soumettre à des chocs ou des vibrations violents.

19. Réparations

Ne pas tenter de réparer l'appareil soi-même car le fait d'ouvrir ou de retirer les caches risque d'exposer l'utilisateur à des tensions dangereuses notamment. Confier toute réparation à un personnel qualifié.

20. Dommages nécessitant réparations

Débrancher l'appareil de la source d'alimentation et confier les réparations à un personnel qualifié dans les cas suivants:

- a. Lorsque le cordon d'alimentation ou sa fiche sont endommagés
- b. Si du liquide s'est renversé sur l'appareil ou que des objets sont tombés dedans
- c. Si l'appareil a été exposé à la pluie ou à l'eau.
- d. Si l'appareil ne fonctionne pas normalement lorsqu'on observe les instructions d'utilisation.

Ne régler que les commandes couvertes par le mode d'emploi ; en effet, un réglage incorrect des autres commandes pourrait entraîner des dommages et nécessiteront souvent des travaux de réparation coûteux par un technicien qualifié pour remettre l'appareil en état de marche.

- e. Si l'appareil est tombé ou qu'il a été endommagé.
- f. Si l'appareil affiche une nette modification de ses performances, cela signifie qu'il a besoin d'être réparé.

21. Pièces de rechange

Si l'on a besoin de pièces de rechange, veiller à ce que le technicien de réparation utilise exclusivement les pièces de rechange spécifiées par le fabricant ou des pièces ayant les mêmes caractéristiques que les pièces d'origine. Les pièces de rechange non autorisées risquent de provoquer un feu, un choc électrique et autres dangers.

22. Vérification de sécurité

Après tout travail d'entretien ou de réparation de l'appareil, demander au technicien de réparation d'effectuer les vérifications de sécurité pour s'assurer que l'appareil est en bon état de marche.

23. Montage au mur ou au plafond

L'appareil ne pourra être monté au mur ou au plafond que de la manière recommandée par le fabricant.

24. Chaleur

Eloigner l'appareil des sources de chaleur, telles que radiateurs, appareils de chauffage, cuisinières, et de tout produit engendrant de la chaleur (y compris les amplificateurs).

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Outline and features

The CU-HD1000 is a camera control unit (CCU) for the newly developed multi-standard camera SK-HD1000. The CU-HD1000 is compact (half rack/3 units), lightweight (7kg approx.), and provides significantly reduced power consumption and improved operability. HD-SDI (1080i/720p) input/output is mounted as standard. A flexible system capable of handling current SD-SDI and VBS formats can be constructed.

Features

■ A flexible system capable of handling current HDTV and SDTV formats can be constructed.

HD/SD Digital

HD-SDI OUT x3, HD /SD-SDI OUTx3,
HD/SD-SDI PIX OUT x1, HD/SD-SDI RET IN x4

SD Analog (480i/576i) 16:9/4:3 switchable

VBS OUT x 3, PIX OUT x 1,
WFM OUT x 1, RET IN x 2
Component OUT (Y/P_B/P_R or R/G/B) x 1

■ High-performance down converter

- 1) The high-speed line conversion technology enables high resolution.
Equivalent to 840,000 pixel CCD
- 2) Built in independent video signal processing FPGA for SD signal which allows to adjust DTL correction level independently.
- 3) A digital comb filter is available on VBS output for reducing cross color.

■ Built-in up converter

Built-in up converter in the CCU allows the SDTV return signal(480i/576i) to view in the HDTV View-Finder at camera Head. The up converter has a pixel interpolation function to display a 1,920 x 1,080 effective scanning area.

■ High-quality transmission using a digital optical transmission system

An optical fiber composite cable is used to connect the camera head and CCU. The signals are transmitted using an optical serial digital transmission method (HD-SDI standard/1.5 Gbps) to ensure high-quality transmission.

The cable length can be extended up to 1 km.

Warnings and cautions when using

CAUTION

■ Do not disassemble or modify

The camera contains precision internal components. Do not open the cover or disturb switches and controls other than designated. There is risk of impaired performance and damage.

■ Keep foreign object out of interior

Entry of water, metallic or other foreign materials can cause failure and damage.

■ Select use and storage locations carefully

Avoid using or storing the equipment in the following types of locations. Impaired performance and damage can be caused.

- Extremely hot or cold locations (exceeding 0 to 40°C), such as in enclosed vehicles.
- Subject to strong vibration.
- Humid or dusty locations.

- Salt spray or corrosive gases.

- Strong electromagnetic fields (e.g., near TV or radio transmitters).

- Where exposed to rain.

- When connecting and disconnecting cables, grasp the connector by the body, not the attached cable. Cables can be damaged by pulling on them.

■ Fuse replacement

Important: Although spare fuses are provided, the fuse must be replaced only by a qualified service technician.

■ In event of difficulty

Disconnect from power and contact the nearest Hitachi Kokusai Electric service agency.

Warnings and cautions when using

Hybrid Fiber Optical Camera Cable & Connector Handling

CU-HD1000 camera is using the optical fiber cable & connector which is required special technique for handling.

1. Cable Connector & Receptacle



(1) FCF (Fiber Cable Female)



(2) FCM (Fiber Cable Male)



(3) FCFR (Female Receptacle)



(4) FCMR (Male Receptacle)

2. Maintenance tool & information








(1) Cleaning Stick (CANARE CLETOP 2.5/2.0)

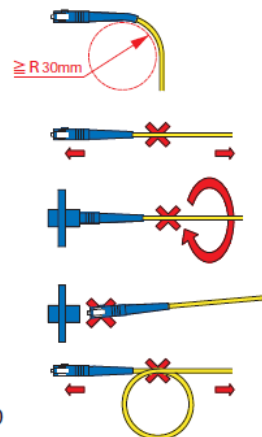
(2) CLEANING KIT

Fiber optical cable assembly manufacture "CANARE" has Cleaning kit for the optical fiber cable & connector available. Detail is in URL <http://www.canare.co.jp>

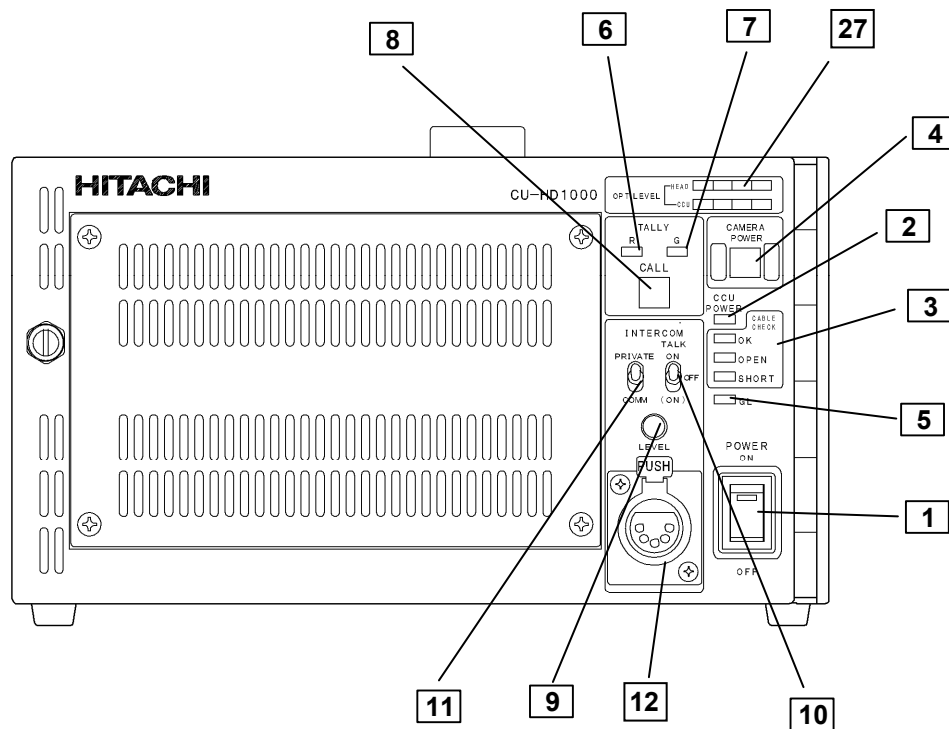
Handling Precautions

Depending on usage, fiber-optic patch cables may not be capable of offering their full designed maximum performance. To prevent any deterioration of signal quality, be sure to observe the following precautions:

-  Do not bend the base of the connector less than 30mm (minimum permissible bend range).
-  Avoid applying tension of 80N (8.2kgf) or more to the fiber-optic cable. Even momentary applications may damage the cable.
-  Do not twist the fiber-optic patch cable while connected to equipment.
-  When connecting cables to equipment or adapters, be sure to insert the connector straight into its corresponding jack and not at an angle. Also, fully insert the connector until its white line disappears.
-  During installation, take care not to allow kinks to develop in the cable.



Facility names and functions



1 CCU POWER switch

CCU power on/off switch.

2 CCU POWER LED

Lights when power is on.

3 CABLE CHECK LED

OK: CAMERA POWER switch **4** can be operated.

OPEN: Fiber cable not connected.

SHORT: Excess current in fiber cable.

Note: CAMERA POWER switch **4** is inoperative when OPEN, SHORT LED is lighted.

4 CAMERA POWER switch

Camera power on/off switch; lights at power on. When the camera power is off, only one channel intercom (CH1) is available. Press the switch for 3 sec. or more, the camera power turns off.

5 GL ON LED

Lights during genlock operation.

Note: When a different frame rate signal is input for genlock, the LED blinks and the signal is ignored.

6 R TALLY LED

Lights at red tally input or when sending CALL signal from camera.

7 G TALLY LED

Lights at green tally input.

8 CALL button

Press to call the camera.

9 INTERCOM LEVEL control

Adjusts intercom listening volume.

10 TALK ON/OFF switch

Intercom microphone on/off switch.

11 PRIVATE/COMM switch

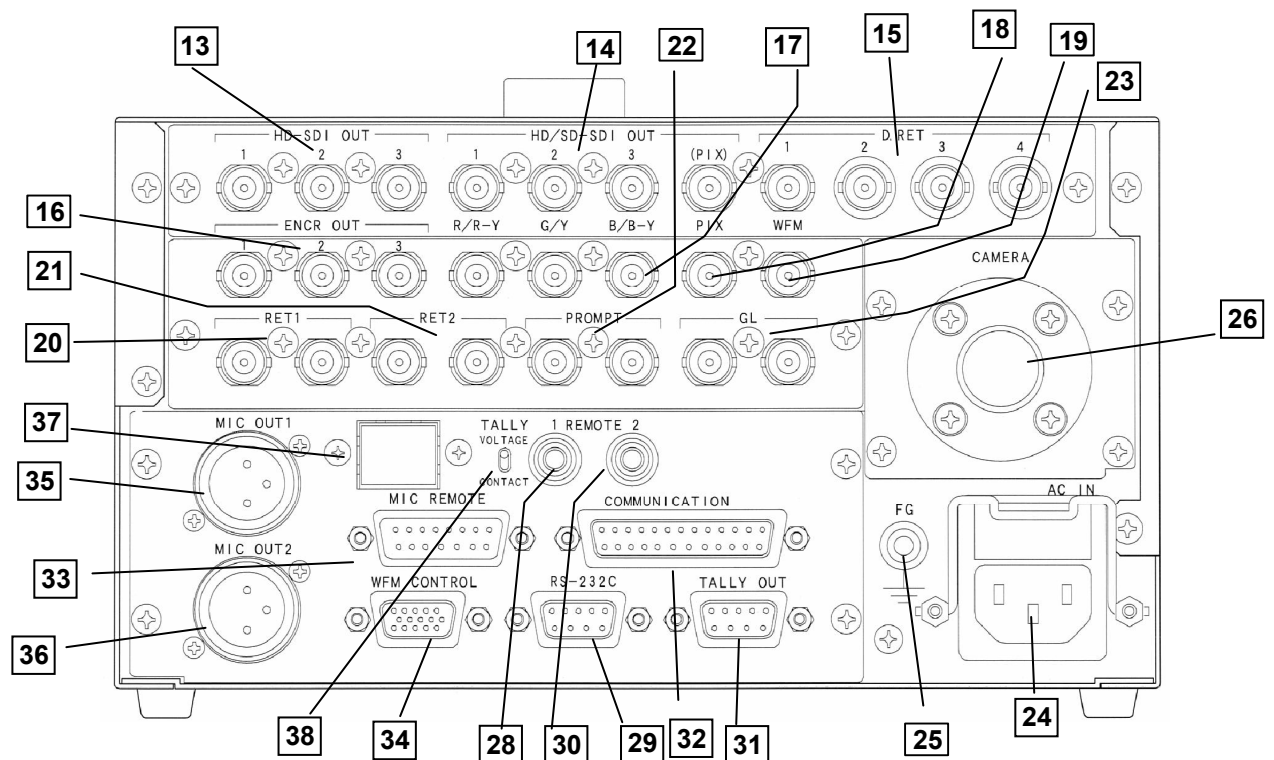
PRIVATE: Communicate with camera only

COMM: Communicate with entire system

12 Intercom connector (XLR,5P)

Connection for optional MT-12MF headset.

Facility names and functions



13 HD SDI OUT connectors (BNC)

Outputs three lines of digital serial HDTV video signals.

14 HD/SD SDI connectors (BNC)

Outputs four lines of digital serial HDTV/SDTV video signals.
Select the HD-SDI or SD-SDI by the user function menu.
The character is superimposed in PIX output.

15 D.RET input connectors (BNC)

Inputs for digital serial AUX video signals.
A signal selected among these four inputs is sent to the camera viewfinder or the SK-HD1000's RET connector
The signal can be selected by user function menu..

16 ENCR OUT connectors (BNC)

Composite video outputs for 3 lines.

17 COMPONENT/RGB connectors (BNC)

R, G, B or Y, Pb, Pr signal outputs.
The output signals are selected by menu.

18 PIX OUT connector (BNC)

Composite or R/G/B video output with superimposed character.

19 WFM OUT connector (BNC)

Composite or R/G/B video output for waveform monitor.

20 Analog RET-1 input connectors (BNC)

Inputs for analog AUX video signals. The signal is sent to the camera viewfinder or the SK-HD1000 RET connector (selected by pressing RET1 of the CA-HF1000).

21 Analog RET-2 input connectors (BNC)

Same function as analog RET-1.

22 PROMPT connectors (BNC)

Input for the prompter video signal. The signal is sent to the CA-HF1000 PROMPT out connector.

Important notice

When using return video, please input correct format signal which is selected on the return assignment menu (page 9).

Facility names and functions

23 Genlock connectors (BNC)

Input for tri-level sync signal or black burst signal for genlock operation.

24 AC IN connector

Input for AC power supply.

25 FG terminal

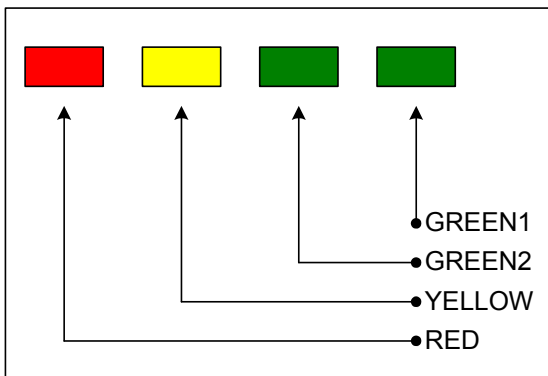
Frame ground terminal.

26 Fiber connector

Connect Fiber cable.

27 Receiver Level LED

The strength of the arriving light signal via fiber cable is indicated by position of lighting LED.



Indicate the receiver level approximately
GREEN1: -3dBm to -8dBm (Normal)
GREEN2: -8dBm to -11dBm
YELLOW: -11dBm to -14dB (Warning)
RED: under -14 dB (Alarm)

28 REMOTE1 connector

Connection for the optional camera control panel or setup control unit.

29 RS-232C connector

Use for camera control via RS-232C.

30 REMOTE2 connector

Connection for the optional camera control panel or setup control unit.

31 TALLY OUT connector

Contact outputs for tally signals.

32 COMMUNICATION connector

Intercom and tally inputs from external system.

33 MIC REMOTE connector

This connector is used to select the MIC1 and MIC2 amplifier gains.

34 WFM CONTROL connector

This connector is used to select the display mode of the waveform monitor.

35 MIC OUT1 connector (XLR 3 pin)

Outputs MIC1 audio signals from a camera or the CA-HF1000 at 0 dBm.

36 MIC OUT2 connector (XLR 3 pin)

Outputs MIC2 audio signals from the CA-HF1000 at 0 dBm.

37 RJ-45 connector

This connector is used to connect expanded functions such as a remote controller.

38 TALLY CONTACT/VOLTAGE

The TALLY input can be contact or voltage supply. Set the TALLY switches according to the systems connected to CU-HD1000 rear panel COMMUNICATION connector.

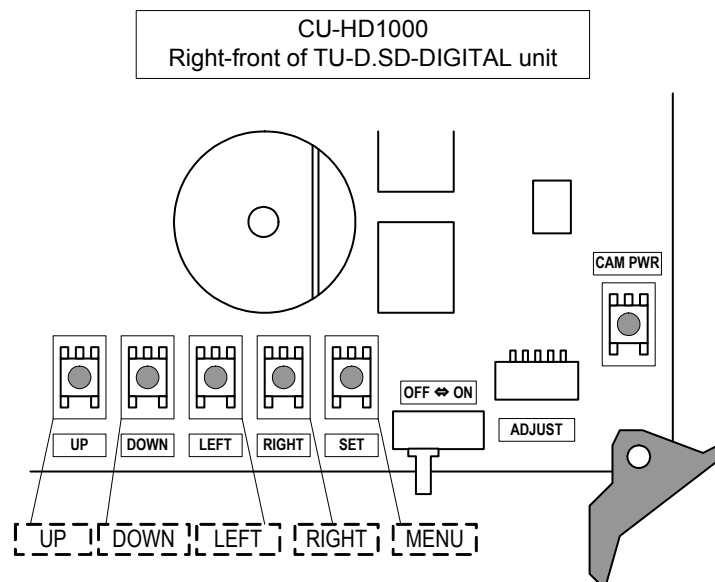
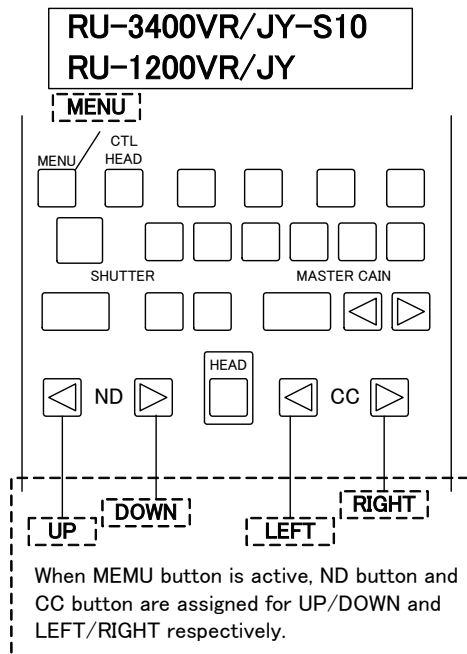
Function menu

Function menu

Use the camera control panel or the setup control unit connected to the CU-HD1000 rear side to display the function menus.

The function menus include the CCU menu to set the CU-HD1000 and the camera menu to set a camera.

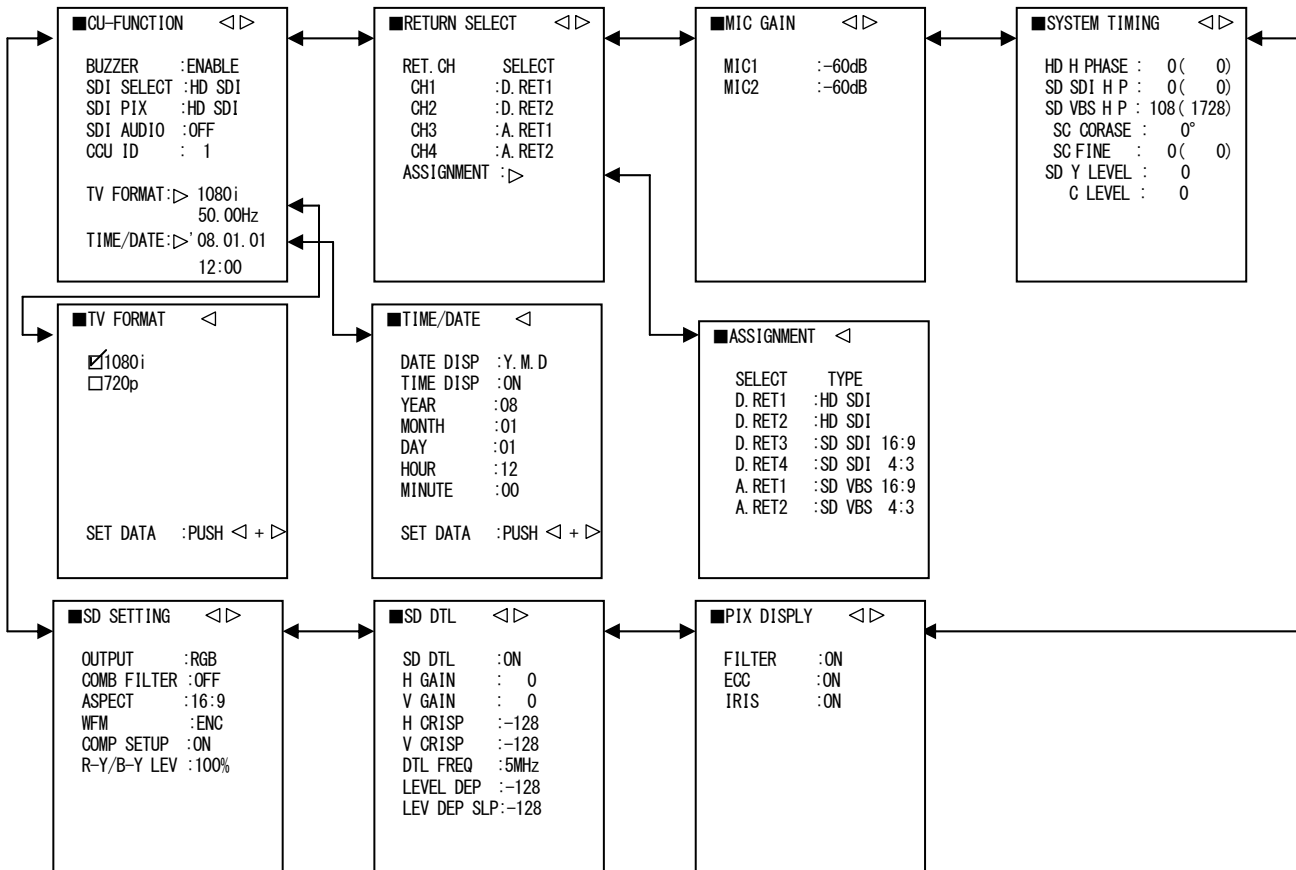
(And also the function menus control the button of the TU-SD.Digital unit inside the CU-HD1000.)



Function menu

CCU menu

If the FUNC button of the camera control panel is pressed with the color bar ON, the CCU menu is displayed.



Camera menu

The camera menu appears when the color bar is off. Contents differ by the camera. Refer to the camera operating instructions.

Function menu

CU-FUNCTION menu

■CU-FUNCTION <>	
BUZZER	: ENABLE
SDI SELECT	: HD SDI
SDI PIX	: HD SDI
SDI AUDIO	: OFF
CCU ID	: 1
TV FORMAT:▷ 1080i	
50.00Hz	
TIME/DAT:▷	09.01.01
	12:00

Item	Setting	Factory setting	Description
BUZZER	ENABLE, DISABLE	ENABLE	Sets buzzer operation during call input. ENABLE : Buzzer sounds. DISABLE : Buzzer does not sound.
SDI SELECT	HD SDI, SD SDI	HD SDI	Sets output signal of HD/SD-SDI OUT connector.
SDI PIX	HD SDI, SD SDI	HD SDI	Sets output signal of HD/SD-SDI OUT(PIX) connector.
SDI AUDIO	ON, OFF	OFF	Sets the embedded audio ON/OFF of the HD-SDI /SD-SDI output.
CCU ID	1 ~ 12	1	Set the CCU ID. This ID is required for the SETUP CONTROL UNIT to identify the CCU when the SETUP CONTROL UNIT is used.
TV FORMAT	▷		Used to display the TV FORMAT submenu
TIME/DATE	▷		Used to display the TIME/DATA submenu.

TV FORMAT menu

■TV FORMAT <	
<input checked="" type="checkbox"/> 1080i	
<input type="checkbox"/> 720p	
SET DATA : PUSH <+>	

Item	Setting	Factory setting	Description
1080i	<input checked="" type="checkbox"/> , <input type="checkbox"/>	<input checked="" type="checkbox"/>	Select the TV FORMAT 1080i(HD-SDI IN/OUT) <input checked="" type="checkbox"/> : SELECTED <input type="checkbox"/> : NOT SELECTED
720p	<input checked="" type="checkbox"/> , <input type="checkbox"/>	<input type="checkbox"/>	Select the TV FORMAT 720p(HD-SDI IN/OUT)
SET DATA	PUSH <+>	-	Press the <input type="checkbox"/> and <input type="checkbox"/> buttons together to enable the TV FORMAT setting.

NOTICE:

The cursor is moved to an arbitrary format with an upper and lower switch, and when TV FORMAT is set, a right and left switch is operated, and set. The mark is displayed by pushing a right and left switch, and TV FORMAT is changed.

After TV FORMAT is set, it saves the setting data by matching the cursor to "SET DATA", and pushing a right and left switch at the same time. It returns to TV FORMAT before it changes automatically when it does not save the setting data within ten seconds.



TV FORMAT returns to TV FORMAT before it changes automatically when the following operation is done.

- (1) When it does not save the setting data within ten seconds.
- (2) When it turns off the menu display before it saves the setting data.
- (3) When it changes to "CU-FUNCTION MENU" before it saves the setting data.
- (4) When it turns off the CCU power supply before it saves the setting data.

Function menu

TIME/DATE menu

■ TIME/DATE <	
DATE DISP	: Y. M. D
TIME DISP	: ON
YEAR	: 08
MONTH	: 01
DAY	: 01
HOUR	: 12
MINUTE	: 00
SET DATA	: PUSH <+>

Item	Setting	Factory setting	Description
DATE DISP	OFF, Y.M.D, M.D.Y, D.M.Y	Y.M.D	Sets the date display. When ON is selected, the CU-FUNCTION menu displays the date.
TIME DISP	OFF, ON	ON	Sets the time display. When ON is selected, the CU-FUNCTION menu displays the time.
YEAR	00 ~ 99	-	Sets the year of the date.
MONTH	00 ~ 12	-	Sets the month of the date.
DAY	00 ~ 31	-	Sets the day of the date.
HOUR	00 ~ 23	-	Sets the hours of the time.
MINUTE	00 ~ 59	-	Sets the minutes of the time.
SET DATA	PUSH <+>	-	Press the  and  buttons together to enable the TIME/DATE setting.

Function menu

RETURN SELECT menu

■RETURN SELECT◀▶	
RET. CH	SELECT
CH1	: D. RET1
CH2	: D. RET2
CH3	: A. RET1
CH4	: A. RET2
ASSIGNMENT	: ▶

Item	Setting	Factory setting	Description
CH1	D,RET1, D,RET2, D,RET3,	D.RET1	Selects the RET signal when the RET1 transmission signal switch of the CA-HF1000 is set to 1.
CH2	D,RET4, A,RET1, A,RET2	D.RET1	Selects the RET signal when the RET2 transmission signal switch of the CA-HF1000 is set to 2.
CH3		D.RET1	Selects the RET signal when the RET3 transmission signal switch of the CA-HF1000 is set to 3.
CH4		D.RET1	Selects the RET signal when the RET4 transmission signal switch of the CA-HF1000 is set to 4.
ASSIGNMENT	▶	-	Used to display the ASSIGNMENT submenu.

ASSIGNMENT menu

■ASSIGNMENT◀	
SELECT	TYPE
D. RET1	: HD SDI
D. RET2	: SD SDI 16:9
D. RET3	: SD SDI 4:3
D. RET4	: SD SDI
A. RET1	: SD VBS 16:9
A. RET2	: SD VBS 4:3

Item	Setting	Factory setting	Description
D.RET1	HD SDI, SD SDI16:9,	HD SDI	The transmission signal set to digital return 1 is selected.
D.RET2	SD SDI 4:3,	HD SDI	The transmission signal set to digital return 2 is selected.
D.RET3		SD SDI 16:9	The transmission signal set to digital return 3 is selected.
D.RET4		SD SDI 4:3	The transmission signal set to digital return 4 is selected.
A.RET1	SD VBS16:9, SD VBS 4:3	SD VBS16:9	The transmission signal set to analog return 1 is selected.
A.RET2		SD VBS 4:3	The transmission signal set to analog return 2 is selected.

MIC GAIN menu

■MIC GAIN◀▶	
MIC1	: -60dB
MIC2	: -60dB

Item	Setting	Factory setting	Description
MIC1 GAIN	-10dB, -20dB, -30dB, -40dB, -50dB, -60dB, -70dB	-60dB	Sets the sensitivity of the MIC1 line.
MIC2 GAIN	-10dB, -20dB, -30dB, -40dB, -50dB, -60dB, -70dB	-60dB	Sets the sensitivity of the MIC2 line.

Control the MIC GAIN when it controls remotely the camera.

Not control the MIC GAIN when display the “*” sign.

Display the “*” sign when it doesn't control remotely the camera.

Function menu

SYSTEM TIMING menu

```

■SYSTEM TIMING <◇>
HD H PHASE : 0 ( 0)
SD SDI H P : 0 ( 0)
SD SDI H P : 108 ( 1728)
SC COARSE : 0°
SC FINE : 0 ( 0)
SD Y LEVEL : 0
C LEVEL : 0
    
```

Item	Setting	Factory setting	Description
HD H PHASE	-128(-512)to +127(511)	0	Adjust HD-SDI output phase to VBS.
SD SDI H P	-128(-256)to +127(255)	0	Adjust SD-SDI output phase to VBS
SD VBS H P	-128(-2048)to +127(2047)	108(1728)	Adjust VBS output phase to genlock signal.
SC CORSE	0° ,90° ,180° ,270°	0	Adjust quarter phase of VBS subcarrier to genlock (black burst) signal.
SC FINE	-128(-512)to +127(511)	0	Adjust fine phase of VBS subcarrier to genlock (black burst) signal.
SD Y LEVEL	-128 to +127	0	Adjust the VBS luminance level.
SD C LEVEL	-128 to +127	0	Adjust the VBS chrominance level.

PIX DISPLAY menu

```

■PIX DISPLY <◇>
FILTER : ON
ECC : ON
IRIS : ON
    
```

Item	Setting	Factory setting	Description
FILTER	OFF, ON ON/OFF	ON	Sets the types of the PIX OUT optical filter display and ECC filter display. For details, see the filter display below.
ECC	OFF, ON	ON	Display the Electric Color Correction filter.
IRIS	OFF, ON	ON	Display the F-value of the lens iris.

SD-DTL menu

```

■SD DTL <◇>
SD DTL : ON
H GAIN : 0
V GAIN : 0
H CRISP : -128
V CRISP : -128
DTL FREQ : 5MHz
LEVEL DEP : -128
LEL DEP SLP : -128
    
```

Item	Setting	Factory setting	Description
SD DTL	OFF, ON	ON	Enable the DTL function of SDTV.
H GAIN	-128 to +127	0	Adjust the SDTV Horizontal DTL level.
V GAIN	-128 to +127	0	Adjust the SDTV Vertical DTL level.
H CRISP	-128 to +127	-128	Set the operation threshold level of horizontal DTL in order to prevent to emphasize noise.
V CRISP	-128 to +127	-128	Set the operation threshold level of vertical DTL in order to prevent to emphasize noise.
DTL FREQ	4MHz,5MHz,6MHz, 7MHz,8MHz	5MHz	Set the Horizontal DTL boost frequency.
LEVEL DEP	-128 to +127	-128	Dark component DTL level adjustment slice.
LEV DEP SLP	-128 to +127	-128	Dark component DTL level adjust slope.

Function menu

SD-SETTING menu

```

■SD SETTING <D>
OUTPUT      :RGB
COMB FILTER:OFF
ASPECT     :16:9
WFM        :ENC
COMP SETUP :OFF
R-Y/B-Y LEV:100%
    
```

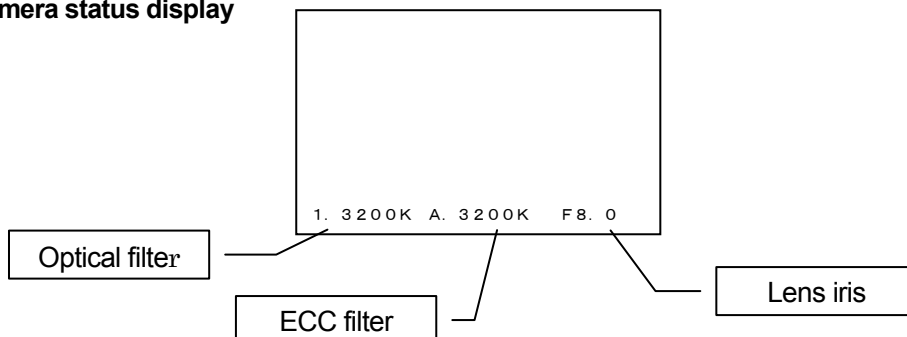
Item	Setting	Factory setting	Description
OUTPUT	RGB, COMP	RGB	Set output signals from the COMPONENT/RGB connector. RGB : Outputs the R, G, and B signals. COMP : Outputs the Y, Pb, and Pr signals.
COMB FILTER	OFF, ON	OFF	Turns on/off a comb filter.
ASPECT	16:9,4:3	16:9	Select the SD aspect ratio.
WFM	R, G, B, ENC, SUP, SEQ	ENC	Set the WFM output (Analog Video output) and WFM CONTROL (Control Signal output). SD-SDI, the HD-SDI output, and WFM CONTROL are connected with a SDI Waveform monitor, the control synchronizes with the Waveform monitor. *Please see 19 page "Service information - WFM CONTROL" in detail.
COMP SETUP	OFF, ON	ON(NTSC) OFF(PAL)	Turns on/off the setup of an analog component Y signal.
R-Y/B-Y LEV	100%, 75%	100%(NTSC) 75%(PAL)	Set the 100%/75% of the analog component R-Y/B-Y signal.

ECC filter indication

When the FILTER setting is ON, the ECC filter is displayed at the lower center of the screen. The display depends on the optical filter position.

ECC_FILTER	A.3200K B.4300K C.5600K D.6300K E.8000K	Displays ECC filter information with optical filter 1.
------------	---	--

PIX OUT camera status display



Cable check

Cable check

LED lights when cable is connected. For safety, the camera power defaults to off according to the result.

Indication	Content
Screen: CHECK CAMERA CABLE CAMERA CABLE SHORT LED: SHORT lights	The power line may be short-circuited. Camera power defaults to off and camera power switch is rendered inoperative.
Screen: CAMERA CABLE OPEN LED: OPEN lights	Cable is not connected. Camera power defaults to off and camera power switch is rendered inoperative.

The camera power switch defaults to off (LED extinguished) and is inoperative.

Warning indication

Indication	Content
Screen: CCU FAN ALARM!!	FAN warning of CCU The internal fan is stopped or the rotating speed is lowered.

If the fan alarm is indicated, the system should be repaired immediately.

Backup battery replacement

Backup battery replacement

The backup battery is already installed at the factory.

If the time/date information no longer appears, set the power switch to on. If the PIX OUT shows “BACKUP BATT EMPTY” for about 6 seconds, the battery needs to be replaced.

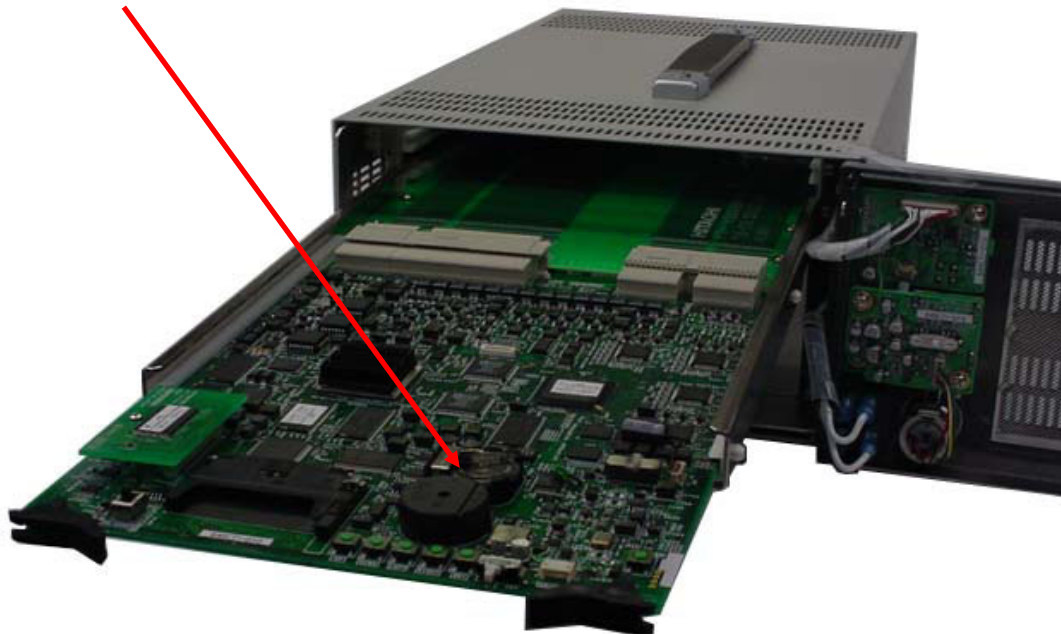
And the date and time need to be set at the TIME/DATE menu.

WARNING

Be sure to replace the battery with a type CR2032 lithium battery. Using another type of battery can damage the camera and pose a fire hazard.

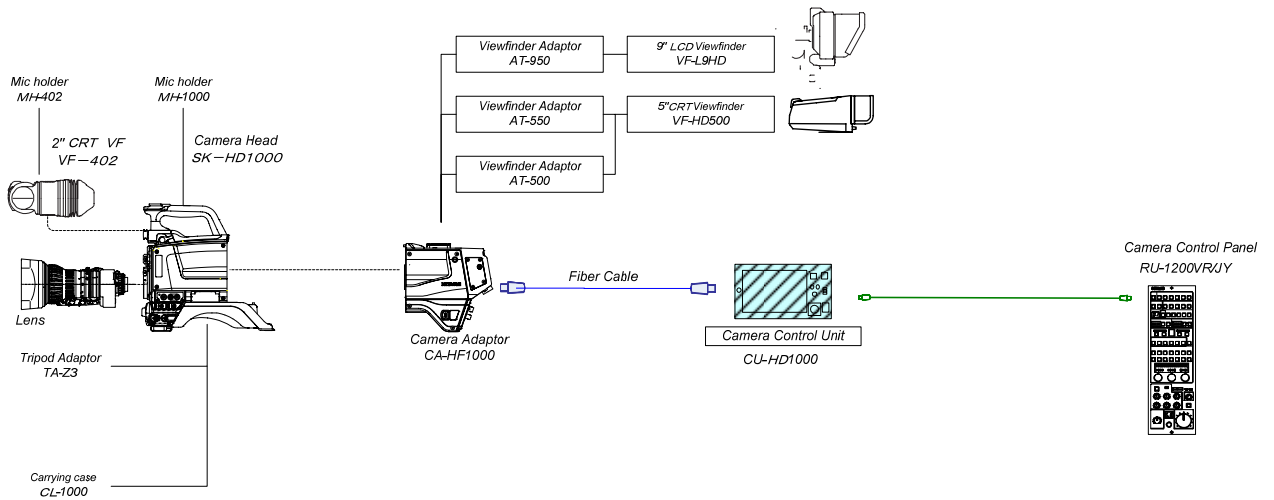
Also be sure to dispose of the depleted battery as prescribed by local ordinance (e.g., return it to the dealer). Do not dispose of the battery with combustible waste, as this may pose a fire, safety and environmental hazard.

Backup battery



System Configuration

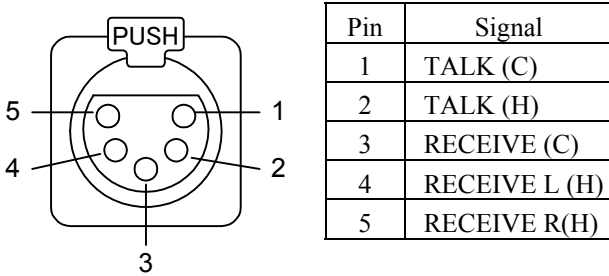
HD Camera SK-HD1000 Camera System Configuration



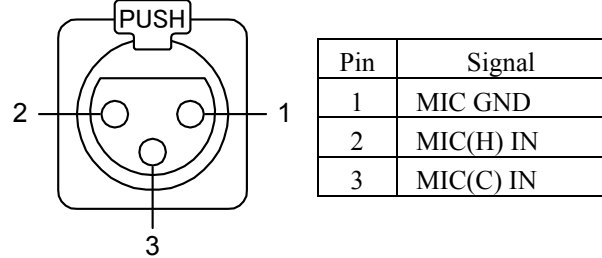
Service information

Connector pin diagrams

INTERCOM (5 pin XLR female:HA16PRH-5S)

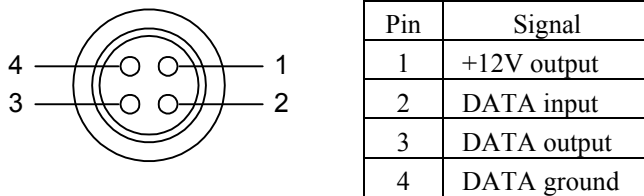


MIC OUT 1,2 (3 pin XLR male:HA16RM-3SE)

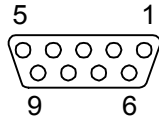


Remote 1,2 (4 pin female:HR10A-7R-4S(73))

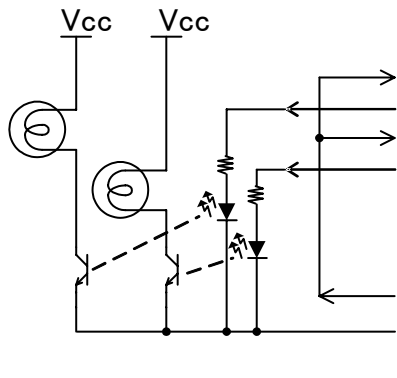
Combined connector: HR10A-7P-4P



TALLY OUT(9pin D-sub female:RDED-9S-LNA(4-40)(55))



Application circuit example



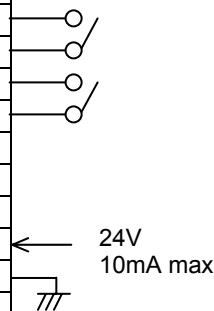
Plug

Pin	Signal
1	
2	
3	
4	
5	
6	
7	
8	
9	
-	

CU mainframe

Pin	Signal
1	R TALLY 1
2	R TALLY 2
3	G TALLY 1
4	G TALLY 2
5	
6	
7	NC
8	+24V
9	GND
-	

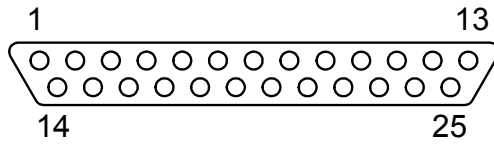
Internal circuit



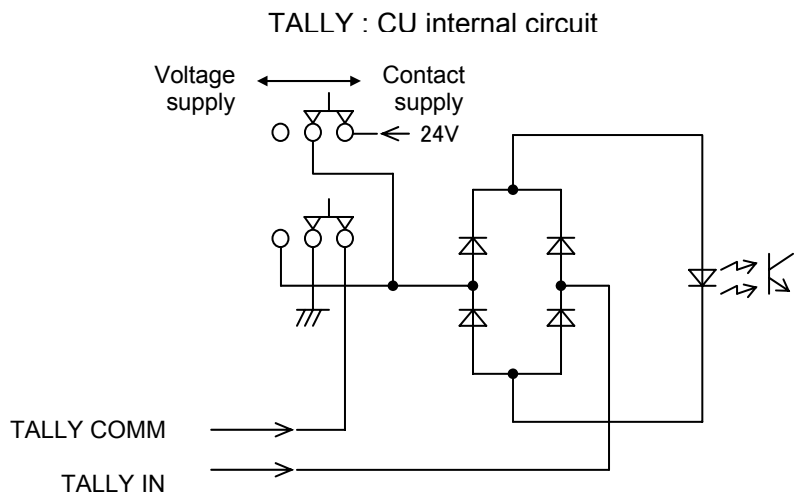
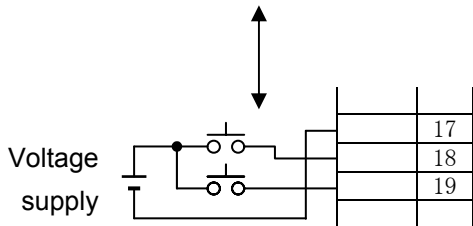
+24V power current of pin 8 is max. 10mA.

Service information

COMMUNICATION (25pin D-sub male:RDBD-25P-LNA(4-40)(55))

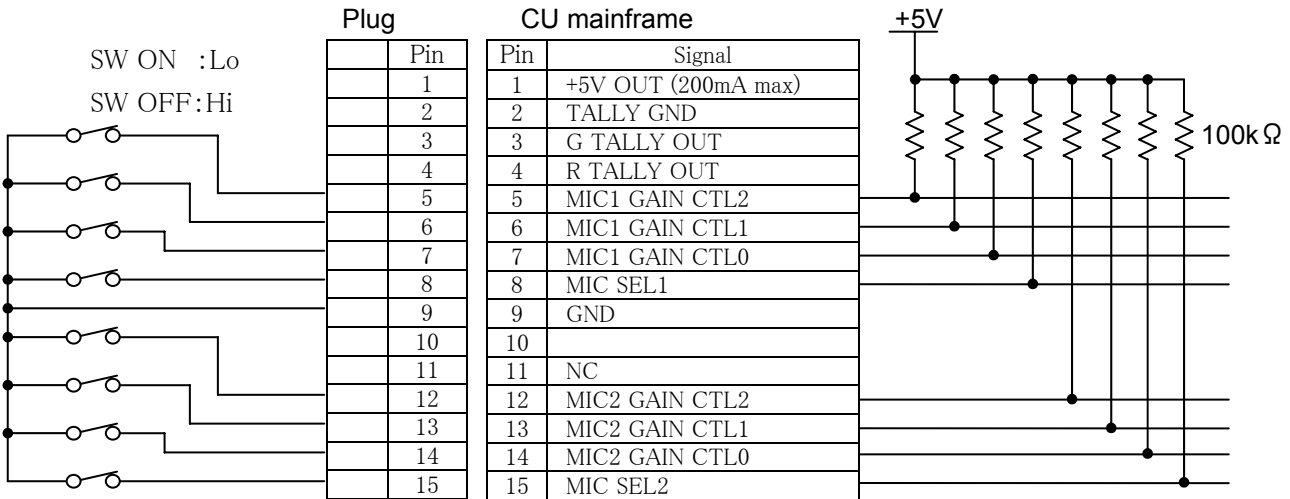
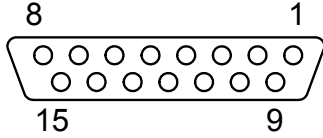


Plug		CU mainframe		
Pin	Signal	Pin	Signal	
1	SYS2	1	SYS2	
2	SYS1	2	SYS1	
3	SYS0	3	SYS0	
4	PD OUT (C)	4	PD OUT (C)	2W : OUT/IN(C)
5	PD OUT (H)	5	PD OUT (H)	2W : OUT/IN(H)
6	PD SHIELD	6	PD SHIELD	
7	PD IN (C)	7	PD IN (C)	2W : NC
8	PD IN (H)	8	PD IN (H)	2W : NC
9	ENG OUT (C)	9	ENG OUT (C)	2W : OUT/IN(C)
10	ENG OUT (H)	10	ENG OUT (H)	2W : OUT/IN(H)
11	ENG SHIELD	11	ENG SHIELD	
12	ENG IN (C)	12	ENG IN (C)	2W : NC
13	ENG IN (H)	13	ENG IN (H)	2W : NC
14	GND	14	GND	
15		15		
16	NC	16	NC	
17	TALLY COMMON	17	TALLY COMMON	→TALLY COMM
18	G TALLY IN	18	G TALLY IN	→G TALLY IN
19	R TALLY IN	19	R TALLY IN	→R TALLY IN
20	NC	20	NC	
21	PGM2 IN(C)	21	PGM2 IN(C)	
22	PGM2 IN (H)	22	PGM2 IN (H)	
23	PGM SHIELD	23	PGM SHIELD	
24	PGM1 IN(C)	24	PGM1 IN(C)	
25	PGM1 IN (H)	25	PGM1 IN (H)	



Service information

MIC REMOTE (15pin D-sub female: RDAD-15S-LNA(4-40)(55))

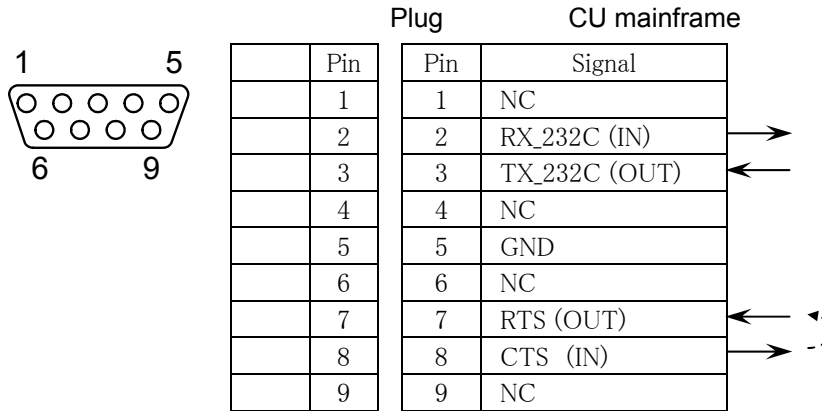


MIC SEL	Hi : Internal Control (Menu)
	Lo : External Control (MIC REMOTE connector)

CTL0	CTL1	CTL2	MIC AMP GAIN
Hi	Hi	Hi	70dB
Lo	Hi	Hi	60dB
Hi	Lo	Hi	50dB
Lo	Lo	Hi	40dB
Hi	Hi	Lo	30dB
Lo	Hi	Lo	20dB
Hi	Lo	Lo	10dB
Lo	Lo	Lo	-10dB

Service information

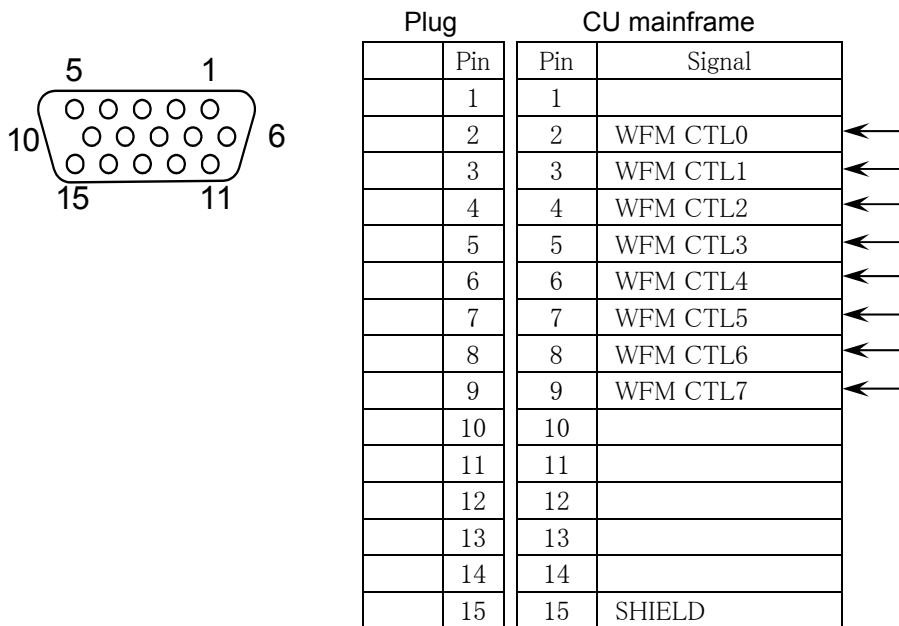
RS-232C(9pin D-sub male:RDED-9P-LNA(4-40)(55))



*RTS:Request To Send

*CTS:Clear To Send

WFM CONTROL (15pin female:YKF42-8043N)

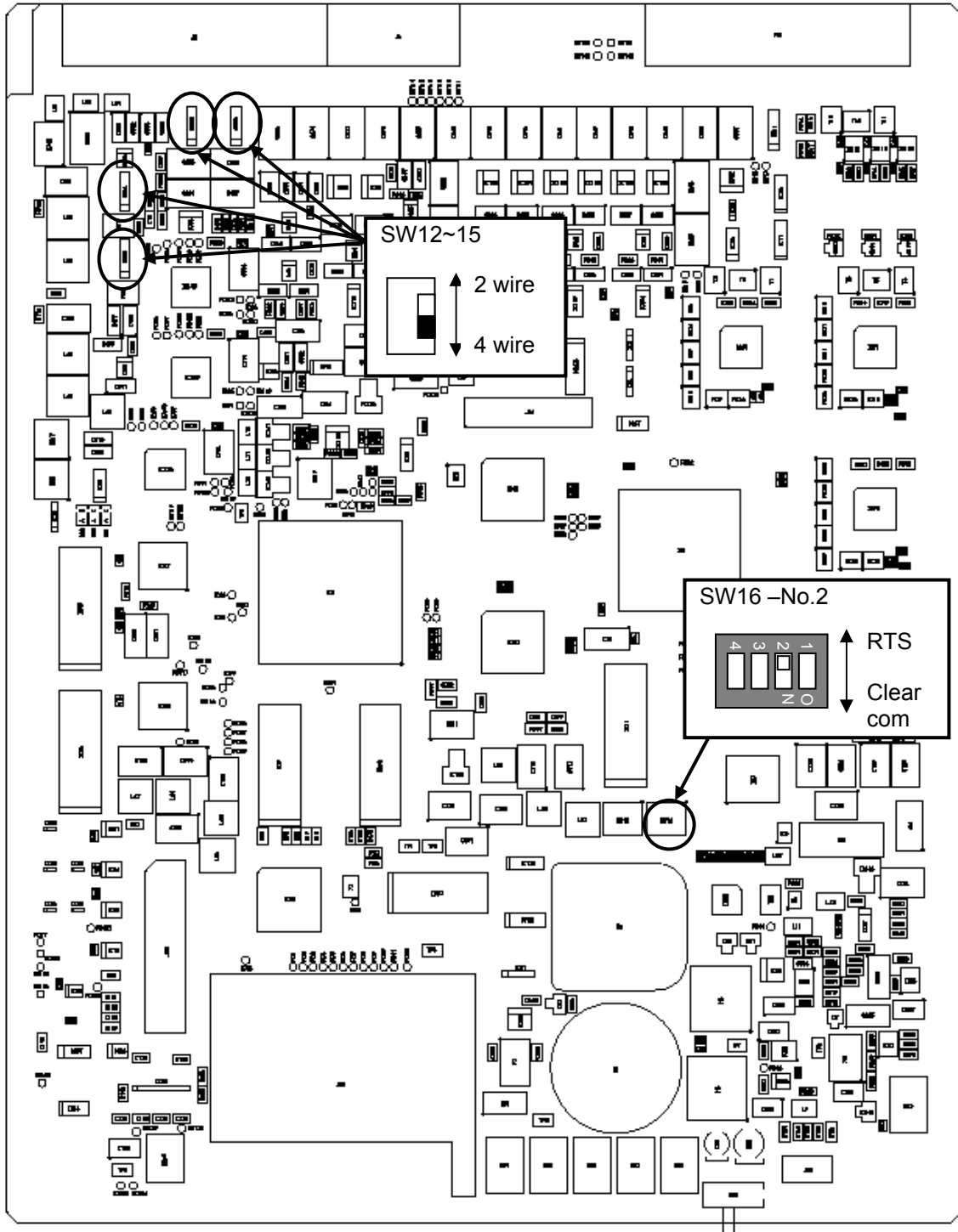


MODE	Analog PIX OUT	Analog WFM OUT	CTL0	CTL1	CTL2	CTL3	CTL4	CTL5	CTL6	CTL7
R	R	R	Lo	Hi	Hi	Hi	Hi	Hi	Hi	Hi
G	G	G	Hi	Lo	Hi	Hi	Hi	Hi	Hi	Hi
B	B	B	Hi	Hi	Lo	Hi	Hi	Hi	Hi	Hi
ENC	ENC	ENC	Hi	Hi	Hi	Lo	Hi	Hi	Hi	Hi
SUP	ENC	SUP	Hi	Hi	Hi	Hi	Lo	Hi	Hi	Hi
SEQ	ENC	SUP	Hi	Hi	Hi	Hi	Hi	Lo	Hi	Hi

Service information

Intercom system setting

TU-D.SD-DIGITAL Board



Service information

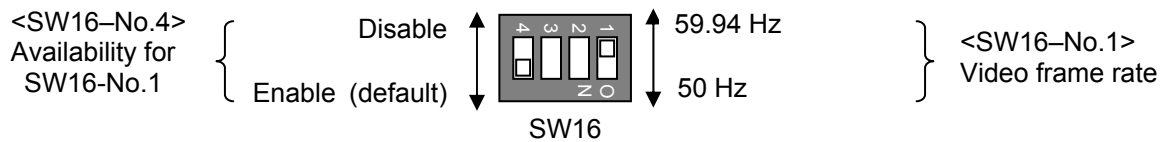
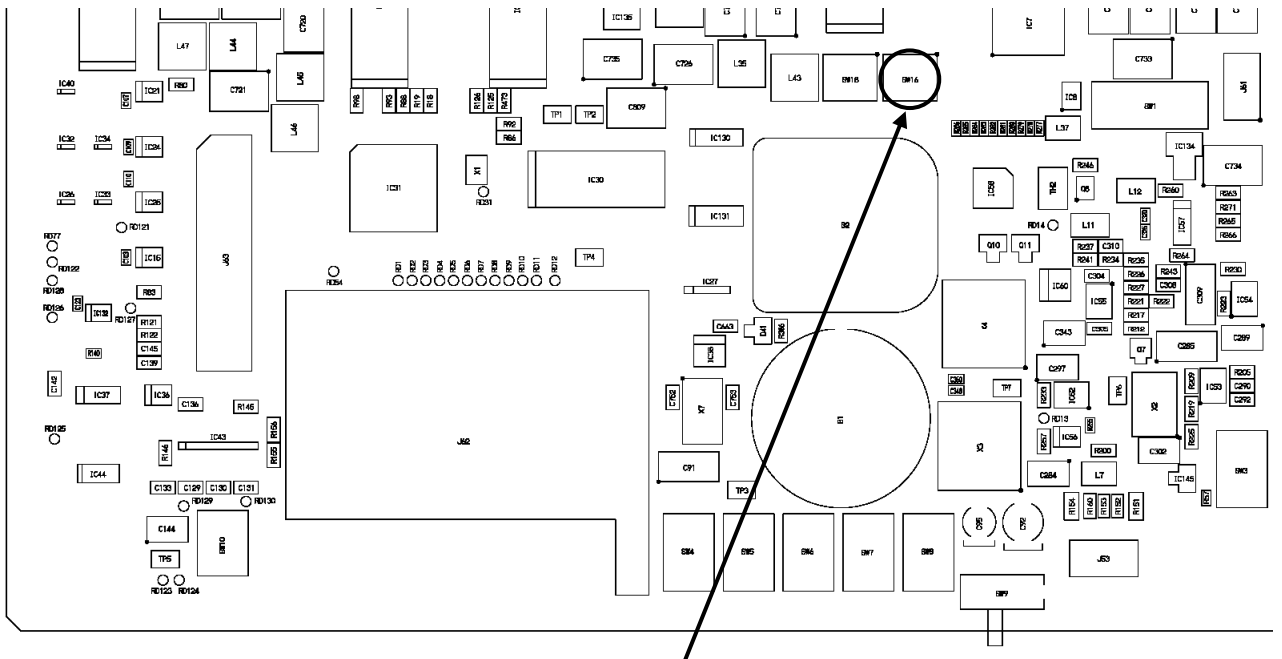
Video frame rate setting

The CU-HD1000 is switchable for video frame rate between 59.94 Hz and 50 Hz.

The setting method is offered by the dip switch SW16–No.4 on TU-D.SD-DIGITAL board.

When the dip switch SW16–No.4 is turned ON, the video frame rate can be switched by the dip switch SW16–No.1.

Dip switch setting on TU-D.SD-DIGITAL Board (Excerpt of front part)



NOTICE

Do not operate the camera and CCU, when it connects the camera of the difference video frame rate.

Specifications

- Power supply voltage CU-HD1000J AC100V 50/60Hz
 CU-HD1000U AC117V 60Hz
 CU-HD1000E AC230V 50Hz
- Power consumption 210W approx. (AC operation, including SK-HD1000,VF-402 and utility POWER)
- Ambient Temperature Operating: 0 to +40°C
 Storage: -20 to +60°C
- Dimensions 216(W)×118(H)×400(D)mm
- Mass 7kg approx.
- Max. Cable length 1km

■ Input output signals (CU-HD1000)

Input signals

GEN LOCK IN	B-BST 0.45Vp-p/75 Ω (loop through) HDTV tri-level sync 0.60Vp-p/75 Ω (loop through)	BNC
DIGITAL RET IN1/2/3/4	HD SDI(1080i,720p) or SD SDI <u>*HD SDI input is same as output format</u> •1080i : SMPTE292M •720p : SMPTE296M •SD-SDI : SMPTE259M	BNC
ANALOG RET IN1/2	VS or VBS 1.0Vp-p/75 Ω (loop through)	BNC
PROMPT IN	VS or VBS 1.0Vp-p/75 Ω (loop through)	BNC
INTERCOM(HEAD SET)	-60dBm	XLR-5pin(Female)
COMMUNICATION		D-sub 15pin
•INTERCOM	0dBm , 600 Ω at 4Wire 0dBu or -15dBu ,200 Ω at 2Wire	
•PGM	0dBm/600 Ω	
•R/G TALLY	Voltage or contact supply	
REMOTE 1	1.5Vp-p or	4pin
REMOTE 2	1.5Vp-p	4pin
RS-232C	9600 baud	D-sub 9pin

Specifications

Output signals

DIGITAL OUT	HD-SDI(1080i,720p) (Embedded audio available) • 1080i:SMPTE292M 0.8Vp-p/1.5Gbps • 720p:SMPTE296M 0.8Vp-p/1.5Gbps	BNC (x3)
	HD-SDI(1080i,720p) or SD-SDI selectable (Embedded audio available) • 1080i :MPTE292M 0.8Vp-p/1.5Gbps • 720p:SMPTE296M 0.8Vp-p/1.5Gbps • SD-SDI:SMPTE259M 0.8Vp-p/270Mbps	BNC (x3)
	HD-SDI(1080i,720p) or SD-SDI selectable PIX (Embedded audio available) • 1080i :MPTE292M 0.8Vp-p/1.5Gbps • 720p:SMPTE296M 0.8Vp-p/1.5Gbps • SD-SDI:SMPTE259M 0.8Vp-p/270Mbps	BNC (x1)
ENCR OUT	VBS 1.0Vp-p/75 Ω	BNC (x3)
R-Y OUT or R	NTSC:0.7Vp-p,PAL:0.525Vp-p/75 Ω VS 1.0Vp-p/75 Ω (Selectable)	BNC (x1)
Y OUT or G	VS 1.0Vp-p/75 Ω VS 1.0Vp-p/75 Ω (Selectable)	BNC (x1)
B-Y OUT or B OUT	NTSC:0.7Vp-p,PAL:0.525Vp-p/75 Ω VS 1.0Vp-p/75 Ω (Selectable)	BNC (x1)
PIX OUT(R,G,B,ENCR)	VS or VBS 1.0Vp-p/75 Ω	BNC (x1)
WFM OUT(R,G,B,ENCR)	VS or VBS 1.0Vp-p/75 Ω	BNC (x1)
MIC OUT 1	0dBm/600 Ω	XLR-3pin
MIC OUT 2	0dBm/600 Ω	XLR-3pin
INTERCOM (HEAD SET)	0dBu MAX+15dB	XLR-5pin(Female)
Remote 1	1.5Vp-p	4pin
Remote 2	1.5Vp-p	4pin
RS-232C	9600 baud	D-Sub 9 pin
COMMUNICATION		D-sub 25pin
•INTERCOM	0dBm , 600 Ω at 4Wire 0dBu or -15dBu ,200 Ω at 2Wire	
TALLY OUT(R,G)	Contact	D-sub 9pin
WFM CONTROL	WFM 0-7 0/5V	D-sub 15pin

Specifications

■ Accessories

- Camera control panel
 - Base station internal/external dual type
 - External base station dedicated type
- Setup control unit

■ Standard Composition

• Camera Control Unit	: CU-HD1000	1
• Code Set(U/J)	: WC0051(0234-0089A 2.5M) (8488057)	1
• Code Set(E)	: VM0306B;VM0303B 2.5M (BBZ0399)	1
• Fuse(U/J)	: ULTSC 5A N1 (EFG0818)	3
• Fuse(E)	: BET 1.6 A (250V 1.6A) (EFG0751)	3
• Operation Manual	: CU-HD1000 O/M	1
• Connector	: HDAB-15P(05) (8AAE000717)	1
• Plug Case	: HDA-CTH(4-40)(10) (JYH0050)	1
• Connector	: HDBB-25S(05) (8AAE000522)	1
• Plug Case	: HDB-CTH(4-40)(10) (JYHS003)	1
• Connector	: HDEB-9S(05) (2PBB018260)	1
• Plug Case	: HDE-CTH(4-40)(10) (JYH0051)	1
• Connector	: HDEB-9P(05) (8AAE000718)	1
• Plug Case	: HDE-CTH(4-40)(10) (JYH0051)	1
• Connector	: D02-M15SG-N-F0 (JMD0222)	1
• Plug Case	: DE-C8-J9-F1-1R (E400013231A)	1
• Pin	: D02-22-26S-PKG100 (JYD0108)	15
• Written guarantee(U)	: Written guarantee (MGA0915)	1