

Hitachi Kokusai Electric

HITACHI

Multi-purpose, Digital Production, HDTV Camera

SK-HD1000



Stylish design

The NEW SK-HD1000's streamlined camera body design delivers uncompromising broadcast-quality HDTV images. With its light weight and low center of gravity, hand-held shooting now has never been more comfortable.



High Performance

The SK-HD1000 is a high-performance portable HDTV Studio and EFP camera.

With its new 2.3 million pixels native 1080i 3-CCD, the SK-HD1000 provides outstanding performance.

The camera offers sharper and cleaner HD images due to its 14-bit A/D converters and Hitachi's implementation of the latest digital processing technology.

The camera achieves outstanding high sensitivity and a low vertical smear specifications.

High resolution

The latest generation 2/3-inch 2.3 million pixels CCD with micro lenses and digital multi speed signal processing circuits provide a horizontal resolution performance of change to 1100TVL (luminance channel).

14-bit analog-to-digital conversion and latest generation LSI technology

The brand-new, power-efficient Digital Signal Processor LSI and 14-bit analog-to-digital conversion provide very faithful video image reproduction and quality.

Digital video processing and encoding provide low interference and high stability.

High sensitivity and Signal to Noise ratio

Low-noise circuit technology provide a signal-to-noise ratio of 60dB.

Even at high gain, clear images are obtained with little noise. The standard sensitivity is F10 at 2000 lx. In addition, the +24 dB high gain mode, +18 dB digital gain function can increase the gain up to +48 dB to reproduce dark images with a minimum illumination of 0.25 lx (F1.4).

Setup card

A small plug-in setup card (SD card) stores the user setup and Scene File information.

The adjustment data can then be recalled and used for future scenes and productions thereby assuring the exact video "look" and characteristics as the original Scene File and adjustment settings.





Versatile CCD shutter

Four modes of electronic shutter operation are provided.

- Five Preset shutter speeds
- Asynchronous video and graphic displays can be easily acquired and reproduced by flicker-free images using the provided Lock-Scan function
- Automatic Electronic Shutter (AES) maintains the video level with a fixed aperture on the lens.
- The CC-Frame function increases vertical resolution on static images such as landscapes and time-lapse shooting.

Digital Signal Processing provides advanced image handling and adjustment functions

- Dyna-chroma and auto-knee
The auto knee function allows a wide dynamic range by dynamically compressing the video level above 100%. The Dyna-chroma function, dynamically restores color saturation to scene highlights above 100%.
- 12-Vector and Linear Matrix masking
The 12-vector and linear matrix provide the user a wide latitude in subject image color control. The 6-axis linear matrix provides overall color control and the 12-vector color corrector provides independent control of the hue and saturation for six primary and six secondary combinations of colors thereby providing the user with excellent and precise color rendition control.
- Flesh tone masking
Flesh tone masking provides "fine" "Painting" (hue and saturation) of flesh tones without effecting other colors in the scene.
- Automatic Flesh Tone Detail Circuits
Flesh tone detail smoothes and softens facial lines and blemishes without sacrificing overall scene detail, also provides two separate settings that can be used separately or simultaneously. Automatic flesh tone detail provides an easy and fast means to optimize flesh tone detail.
- Variable Detail Boost Frequency
The detail frequency can be adjusted to provide coarse or fine contours around edges of subjects in the scene thereby reproducing a natural and pleasing picture.
- Special Gamma
Adjusts the initial gamma gain to optimize the reproduction of the dark scene components.
- Gray Scale Automatic Setup
This "through the lens" automatic setup is uses a standard gray scale chart to automatically setup gain, gamma, black and flare thus saving the video operator time and effort.
- Automatic Shading
Automatic shading corrects white vertical shading at the push of a button. This function provides separate memory of lens' modulation shading characteristics to optimize the X1 and X2 lens extender positions.

Multi-purpose configurations

The 2-piece dockable-style camera body with innovative “active cooling covers” offers optimum system flexibility now and in the near future.



Dockable 2-piece design permits adaptation to varied customer applications.

The new streamlined dockable camera body design has a low center of gravity for ease of use on the shoulder. Its ergonomic, lightweight construction also includes a robust ENG VF attachment.

Dockable : One camera body for multiple configurations

- Hybrid Fiber-optic cable adapter
- Future Solid-State HDTV recorder
- HITACHI Digital Triax cable adapter
- Wireless transmission adapter



HDTV dockable recorder

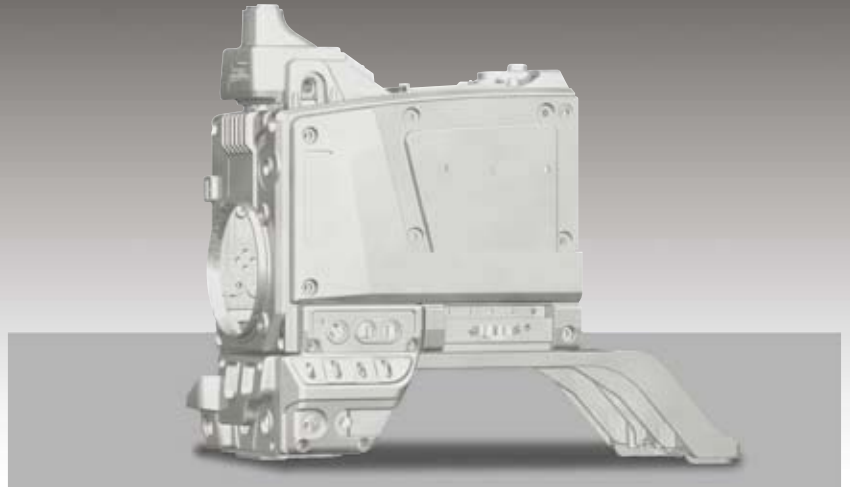
Fiber cable adapter

Triax cable adapter

Multi-purpose, Digital Production, HDTV Camera
SK-HD1000

Low center of gravity and lightweight design

- Advanced Ergonomics Design
- New low center of gravity chassis
- Lightweight magnesium alloy chassis construction
- Optimized for on-shoulder production
- Logical placement of common operation switches



Extensive User-Friendly Features

- Quick focus

Quick Focus automatically opens the iris then sets the video level with the electronic shutter. The resulting shallow depth of focus, allows the cameraman to set the exact focus with ease.

- User-Programmable Switches (CS-1)

The user can assign full auto, quick focus, contrast to either of the programmable switches for ease of operation.

- Full Auto

The built-in Automatic Exposure System (AES) and automatic iris maintain the video level even with rapidly changing light intensity. Full-time Auto White balance (FAW) corrects in real-time for color temperature variations due to changing types of lighting conditions on the scene object.

- Four scene files are provided to store and recall functions such as gain, detail, masking, gamma and other settings.

- Two white balance memories (A, B) are provided for a total of eight memories.

- Menu access is provided for iris level (fine adjustment) and iris peak/average selection.

- Computer controlled real-time auto-white balance.

- The Camera ID, date and time are displayed on the color bar display.

- An Audio test tone (1 kHz) is output when color bars are selected.

- The microphone input provides a phantom power supply

- ECC (Electric Color Compensating) filter

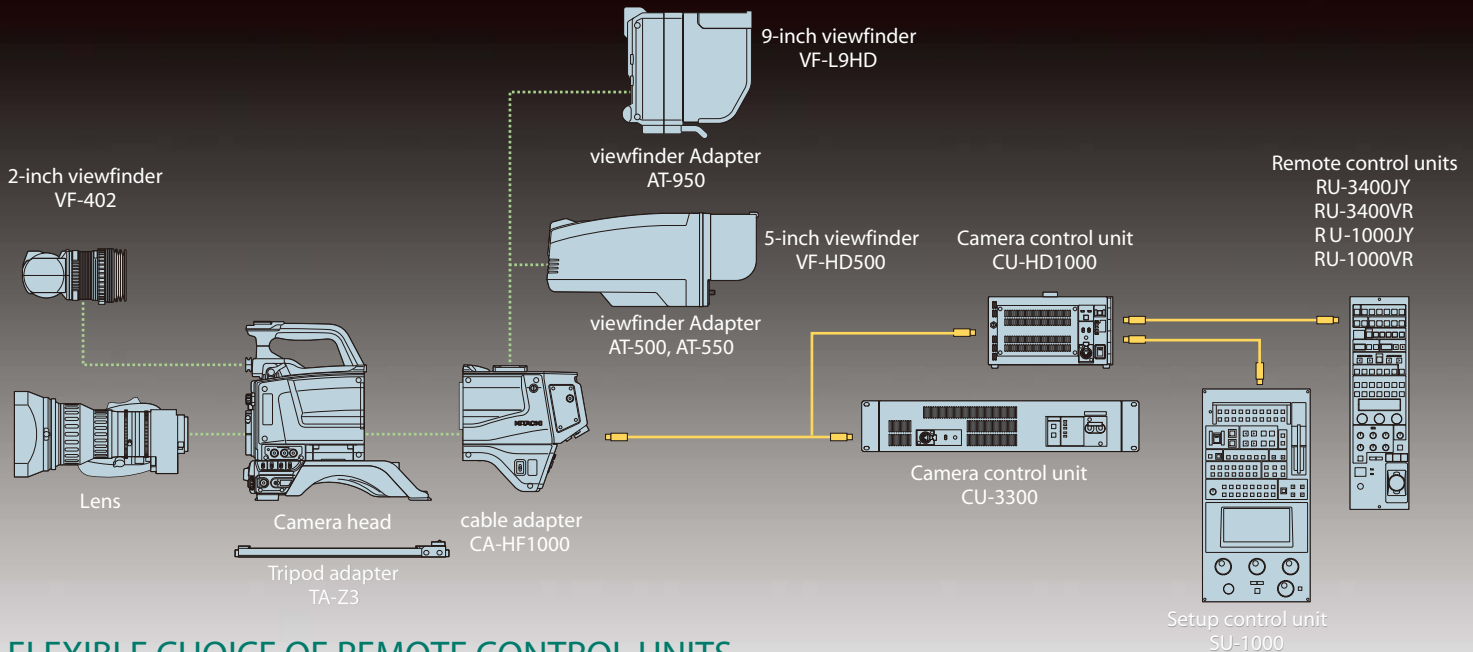
The ECC filter compensates color temperature electrically, like optical filter 3200K, 4300K, 5600K, 6300K and 8000K.

The ECC filter can be controlled by the remote control panel and the base station. The ECC filter setting can be stored in the Scene files.

The status of ECC filter can be displayed on a view finder and a monitor output.



SK-HD1000 System



FLEXIBLE CHOICE OF REMOTE CONTROL UNITS

Highly Integrated CCU designs /RU-3400 Remote Control Unit

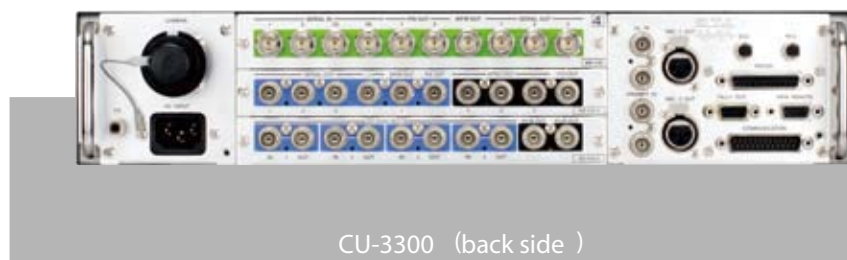
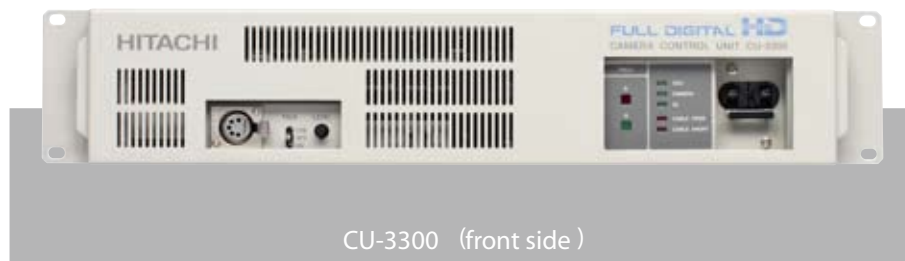
The height of the standard Camera Control Unit (CCU model CU-3300) of the SK-HD1000 System is (88mm) high and, of 2-RU EIA 19-inch rack width.

This new and highly integrated design helps sharply reduce the power consumption of the camera system to less than 150VA. High reliability and easy maintenance have been realized by integrating the HD, SD signal handling and power supply electronics into 3 plug-in modules inside the CU-HD1000 designed for the SK-HD1000.

HD-SDI signal outputs of 1080i or 720P are available as standard depending on the initial selection of CCDs. Down-converted Standard Definition outputs are provided in the optional "up/down converter" module available for both CCU models. This "up/down-converter" module allows one to select all-analog IO's, all-digital (SDI) IO's or a mix of the two.

The compact size RU-1000 series remote operation panel is suitable for news studio use etc., whereas the RU-3400 series has many functions for video control suitable for advanced HDTV program production.

The (CCUs) camera control units can be used without the SU-1000. This reduction in required operational space makes them convenient for OB van use.



Viewfinder displays

- The viewfinder displays the function tree menus.
- Status display
Indicators for zoom and focus (with compatible lens), iris F-stop, color temperature for auto white balance, audio level and other functions are displayed.
- Two mode zebra
Menu selection of over-level or between range zebra is provided.
- Safety zone and center mark display
- Audio Indicator display
- Viewfinder Detail
Horizontal and Vertical Detail enhancement enable the camera operator to easily focus the HDTV image.



SK-HD1000 with VF-402



VF-402 Viewfinder



SK-HD1000
with VF-HD500/AT-550



VF-HD500 Viewfinder/AT-550



SK-HD1000
with VF-L9HD/AT-950



VF-L9HD Viewfinder/AT-950

SPECIFICATIONS

SK-HD1000

Imaging Device	2/3-inch, 2.3M Pixel CCD
Effective pixels	1,920 (H) x 1,080 (V)
Optical system	F1.4 prism
Optical Filters	1x motorized filter wheel w/4 filter positions Clear, Cross, 1/16ND, 1/64ND ECC (Electric Color Corrector) with 5 settings (3200K, 4300K, 5600K, 6300K, 8000K)
Sensitivity	F10@ 2000 lx, 3200K, 89.9% reflectance
Signal to Noise Ratio	60dB (HD-SDI : Y : 27.5 MHz)
Horizontal resolution	1100 TVL
Registration	0.05% (excluding lens characteristics)
Gain selection	L (low) -3, 0, +3, +6, +9, +12, +15, +18dB M (medium) 0, +3, +6, +9, +12, +15, +18, +21dB H (high) +3, +6, +9, +12, +15, +18, +21, +24dB
Camera head power consumption	16W Head only (without VF)
Dimensions	133 (W) x 191 (H) x 262 (D) mm
Mass	2.2Kg Camera head
Operating temperature	-10°C to +45°C
Camera head	1x BNC HD-SDI VF out (Character ON/OFF) or HD-SDI RET out (when studio configured)
Input & Output	4-pin Multi connector for remote control panel 20-pin Multi VF connector, 12-pin Multi LENS connector 3-pin XLR MIC-1 connector, SD MemoryCard Slot

CA-HF1000

Fiber adapter	Fiber adapter/ 1X-type FOC Cn (LEMO)
Features	Intercom channel selection, MIC on/off, volume PGM mix volume 60W~100W Prompter power availability PGM audio level Ch1 & Ch2 MIC Ch1 & 2 phantom power on/off Ch1 & 2 Line or MIC level select (MENU) Remote AUX / VF video select connector (RET CONT)

Viewfinder

2-inch viewfinder VF-402

Construction	Metal Die-cast chassis & mount 2-inch BW 16 : 9 CRT Diopter (CRT Focus Ring) VF angle rotation X-Y mechanical movement
Resolution	600 TV lines
Functions	BRIGHT, CONTRAST, PEAKING knob VR (front facing)
Internal tally	Red/Green
Tally switch	Tally switch OFF, NORMAL, HIGH

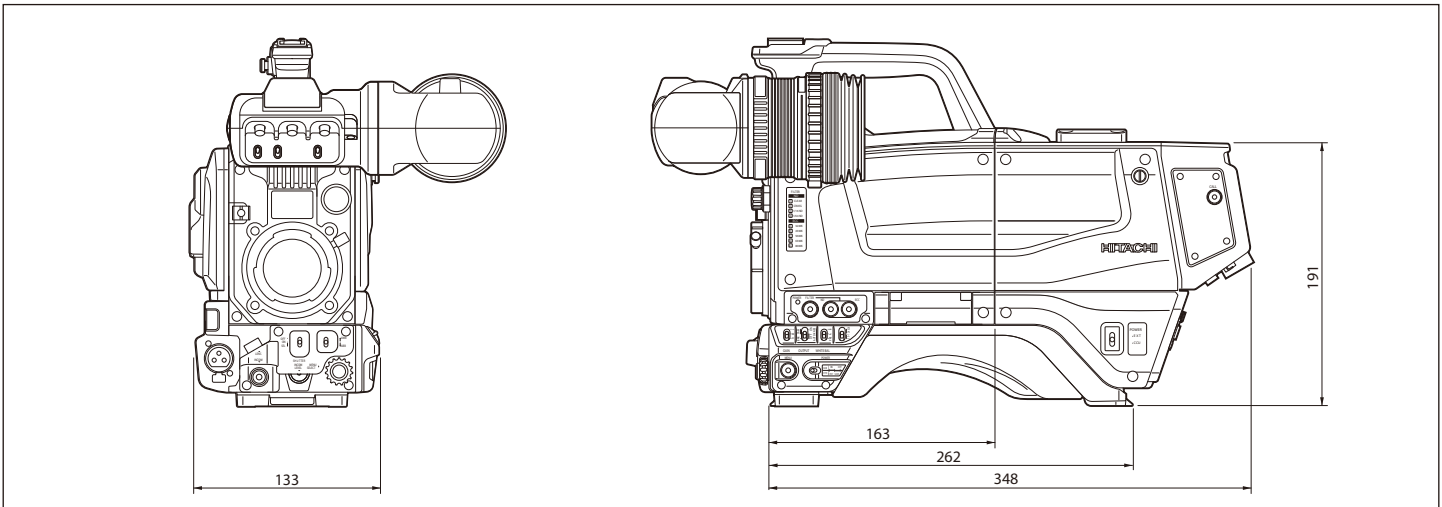
5-inch viewfinder VF-HD500

Construction	5-inch BW 4 : 3 CRT
Resolution	700 TV lines
Functions	BRIGHT, CONTRAST, PEAKING knob VR
Internal tally	Red/Green
Dimensions	140 (W) x 138 (H) x 252 (D) mm

9-inch viewfinder VF-L9HD

Format	1080i / 720P field frequency = 60 / 59.94 / 50Hz
Number of pixels	800 (H) x 450 (V) (16 : 9)
Color temperature	6500K
Input Signals	Analogue Y / Pb / Pr / SYNC
Functions	BRIGHT, CONTRAST, PEAKING knob VR power on / off, tally on / off, Marker on / off (center marker, 4 : 3 marker, area marker)
Internal tally	Red/Green
Dimensions	230 (W) x 175 (H) x 86 (D) mm

DIMENSIONS



CAUTION : To ensure safe operation, please read the instruction manual before using this product.

These Specifications are subject to change without notice.

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