SONY

High Definition Video System

Digital HDVS

Sony Multi-format HD Camera System

HDC1000/HDC1500/HDC1550
HDLA1500/HDLA1505
HDCU1000/HDCU1500

Sony HDC1000 Series – Heralds a New Era of

HDC1000

HDC1550

HD Production

Since introducing its first model, Sony has continually enhanced its line of high definition cameras, in support of the emerging DTV agendas around the world. Its flagship HDC-900 Series, introduced in 2000, has presented a comprehensive and cost-effective path into studio, OB van, and field-based HD productions, due to its multiple format capability, stunning picture performance, and system flexibility.

Pursuing the ultimate HD system for today and for tomorrow, Sony now sets another milestone in the history of multi-format HD camera systems – the HDC1000 Series – offering a broader choice of interlace and progressive formats, much greater picture quality, and enhanced operational flexibility.

The HDC1000 Series consists of three camera heads, two large lens adaptors, two CCUs (Camera Control Units), and a range of peripherals. The camera heads – the HDC1000 optical-fiber-based studio camera, the HDC1500 optical-fiber-based portable camera, and the HDC1550 triax-based portable camera – incorporate a newly developed CCD imager and DSP LSI – two key devices that allow them to achieve ultimate picture performance in a variety of scanning modes. The new CCD can accommodate all existing interlace and progressive scan formats ranging from 1080/50i and 1080/60i to 1080/24P.*1 And as a future-protected device, it can also capture stunning 1080/60P and 1080/50P images – as well as delivering highest-quality 720/50P and 720/60P image creation for operations today.*2

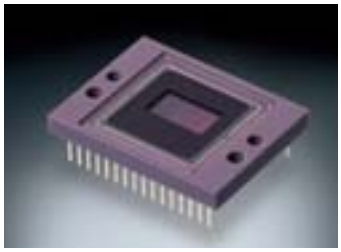
Such high image quality is supported by the camera's convenient peripherals, which make installation and operation of the HDC1000 system very smooth.
The HDLA1500/HDLA1505 Large Lens Adaptor incorporates a totally new interlocking mechanism, which allows a large lens to be attached/detached from the portable HDC1500/HDC1550 in just a matter of seconds – relieving operators from lengthy mechanical adjustments.
The new HDCU1000/HDCU1500 Camera Control Unit uses an optical fiber connection between the HDC camera for top-quality signal transmission and longer cable runs. In addition to a broad range of signal outputs, both CCUs come equipped with an Ethernet interface (100Base-TX) for control over a standard TCP/IP network. What's more, the HDTX100 and HDFX100 Triax Adaptors, which provide conversion between optical fiber and triax, allow systems to be configured around conventional triax-based infrastructures.

With its innovative performance, operability, and system flexibility, the Sony HDC1000 Series will certainly become the mainstream acquisition tool to open unlimited possibilities in a broad range of HD production applications.

*1 In this brochure, 60i, 24P, 30P, and 60P are used as generic names for 59.94i, 23.976P, 29.97P, and 59.94P, respectively.
*2 1080/60P and 1080/50P signals can be output only from the HDC1000/HDC1500 camera head.

Cutting-edge Technologies

Newly Developed Progressive CCD



At the heart of the outstanding picture performance of the HDC1000/HDC1500/HDC1550 camera is a newly developed 2/3-inch type 2.2-megapixel HD CCD. Based on Sony HAD sensor technology and the latest on-chip lens structure, this new CCD offers a high sensitivity of F10 at 2,000 lx and an excellent signal-to-noise ratio of 54 dB (typical).
In addition to this performance, a wide variety of capturing modes including 1080/50i, 1080/60i, 1080/24P, 1080/25P, and 1080/30P are available. What's more, this CCD can capture top-quality 1080/60P* and 1080/50P* images – a capability that also offers highest-quality 720/50P and 720/60P image acquisition for today's operations.

∗1080/60P and 1080/50P signals can be output only from the HDC1000/HDC1500 camera head.

Industry-first 14-bit A/D Conversion

The HDC1000/HDC1500/HDC1550 camera incorporates an industry-first* 14-bit A/D converter that enables images captured by the high-performance CCDs to be processed with maximum precision. In particular, this high-resolution A/D conversion allows the gradation in mid-to-dark-tone areas of the picture to be faithfully reproduced. Thanks to the 14-bit A/D converter, pre-knee signal compression at highlight areas can be eliminated and the camera can clearly reproduce a high-luminance subject at a 600% dynamic range.

∗In a 2.2-megapixel HD camera.

State-of-the-art DSP LSI

The newly developed DSP (Digital Signal Processing) LSI "Visual Image Processor" is the heart of the image-processing device for the HDC1000/HDC1500/HDC1550 camera. By adopting the latest 0.11 μm design rule, this processor can accommodate up to 1080/60 and 1080/50 progressive formats and 14-bit resolution, maximizing the high-clarity images captured by the CCD. In addition, white balance, white shading, and flare are digitally corrected, allowing for stable image correction.

Great Operability

Ergonomic Design

The design of the HDC1000/HDC1500/HDC1550 camera is based on over two decades of Sony experience in manufacturing broadcast video cameras and camcorders, and provides a high level of operability. All control switches and connectors are in the most logical places and are positioned for optimum functionality and ease of use. The low-profile body of the HDC1000 minimizes the parallax between the optical axis of the camera head and the large viewfinder, while the HDC1500/HDC1550's low center of gravity design allows the operator to carry the camera comfortably on the shoulder. In addition, the shoulder pad of the HDC1500/HDC1550 camera can be adjusted either forwards or backwards without using a screwdriver, so the camera can easily be moved to a well-balanced position.

HDC1500

Optical Fiber Digital Transmission (HDC1000/HDC1500)

The HDC1000/HDC1500 camera comes equipped with an SMPTE standardized optical fiber interface for connecting its associated HDCU1000/HDCU1500 Camera Control Unit. In addition to its exceptional quality, the camera can transmit all-digital bi-directional video and audio signals, one control line, power line, and prompter line over extremely long distances – up to 3000 meters (9843 feet)* with the HDCU1000 and 1800 meters (5906 feet)* with the HDCU1500.

*When supplying power to the camera via the optical fiber cable, the maximum cable length varies with the camera system configuration, lens type, the size of the optical fiber cable, and the number of cable connectors.

HDC1000

Choice of Two Camera Control Systems

In a multi-camera configuration featuring the HDC1000 Series, two types of camera control system can be used. One is where the CNU-700 Camera Command Network Unit is at the center of the configuration, while the other makes use of the Ethernet functionality of the systems – a new and powerful feature that also provides a path to the future. Both control systems allow communication between all the devices in the configuration, including cameras, camera control units, remote controllers, and setup units.

Wide-band Triax Transmission (HDC1550)

The HDC1550 camera comes equipped with a widely-used triax transmission interface. This enables the camera to transmit bi-directional video and audio signals, one control line, and one power line to the HDCU1000/HDCU1500 Camera Control Unit via the HDFX100 unit over long distances – up to 1400 meters (4593 feet)* with a ø 14.5 mm triax cable or 1000 meters (3281 feet)* with a ø 13.2 mm triax cable.

*When supplying power to the camera via the triax cable, the maximum cable length varies with the camera system configuration, lens type, the size of the triax cable, and the number of cable connectors.

Compact and Lightweight

The HDC1500/HDC1550 is designed to be very compact and lightweight for a high level of mobility in the field. The HDC1500 and HDC1550 cameras weigh approximately 4.5 kg (9 lb 15 oz) and 4.9 kg (10 lb 13 oz) respectively.

Versatile Interfaces

The HDC1000/HDC1500 camera and the HDC1550 camera also provide two HD SDI outputs and one HD SDI output respectively, as well as one digitally down-converted SDI or analog composite output. In addition, the viewfinder signals with characters can be output from the SDI output connector, giving camera operators additional convenience. Furthermore, when using 24P operation, the built-in 2-3 pull-down function of the HDC1000/HDC1500/HDC1550 camera enables 60i down-converted SD signals to be output on a standard SD monitor.

Memory Stick™ Storage of Camera Setup Parameters

The HDC1000/HDC1500/HDC1550 camera incorporates the Sony Memory Stick system for the storage and recall of setup parameters such as scene files, reference files, and lens files. This is an easy, effective system for storing and recalling camera parameters for individual scenes, plus individual operators' camera-setup preferences, such as viewfinder indicator settings.

Servo-controlled ND and CC Filters

The HDC1000/HDC1500/HDC1550 camera comes equipped with servo-controlled dual optical filters for ND (Neutral Density) and CC (Color Correction) for flexible color and exposure control. The filter settings can be remotely controlled from on an RCP-750/751 Remote Control Panel, MSU-900 Master Setup Unit, MSU-950 Portable Master Setup Unit, or RM-B750/B150 Remote Control Unit or locally controlled on the camera head.

HDLA1500/HDLA1505 – Maximizing Operability

Responding to the ever-increasing requirement of operations that combine a portable camera with a large lens, Sony is continuously seeking the optimum solution. The result is the highly sophisticated HDLA1500* and HDLA1505** Large Lens Adaptors, which are designed to maximize operability of the HDC1500/HDC1550 camera. Generally, setting up a portable camera to a large lens adaptor can be a difficult task, especially fine-tuning the mechanical adjustments between each device. With the new HDLA1500/ HDLA1505 adaptor, time-consuming adjustments, as well as wiring, are absolutely eliminated.

*Includes an attachment for large CRT viewfinders **Does not include an attachment for large CRT viewfinders

HDLA1500

Docking 3
Closes the rear cover. Turns the handle of the camera and then slide the viewfinder forward.

Docking 1
Opens the rear cover of the HDLA1500 adaptor. There is no need for detaching the viewfinder.

Docking 2
Mounts the HDC1500 camera and slides forward until you hear the locking click.

HDLA1505

HDLA1505 rear panel

Totally New Interlocking Mechanism

The HDLA1500/HDLA1505 adaptor does not require any cable wirings. Utilizing a newly developed interlocking mechanism, the power, video, and control signals are passed on directly from the HDC1500/HDC1550 camera to the HDLA1500/HDLA1505 adaptor. This unique mechanism also allows the HDC1500/HDC1550 camera to be attached and detached without removing the large lens. Furthermore, the lens can be removed with the camera having to be mounted on the HDLA1500/HDLA1505 adaptor. The interlocking mechanism allows for an astonishingly quick and smooth setup.

Low-profile Design

Together with the low-profile design of the HDC1500/HDC1550 camera, the viewfinder position of the HDLA1500 is 45 mm lower than the previous model. This low-profile design significantly improves the operator's view, as well as minimizes the parallax between the optical axis of the camera head and viewfinder.

Creative Versatility

Digital Extender*

The digital extender function of the HDC1000/HDC1500/HDC1550 cameras enables images at the center of the shot to be digitally doubled in size. Unlike lens extenders, the digital extender function performs this capability without any loss in image sensitivity, which is often referred to as the "F drop" phenomena.

*Use of the digital extender function will reduce the resolution of the image by half.

Multi Matrix

The multi-matrix function of the HDC1000/HDC1500/HDC1550 camera allows color adjustments to be applied over the color range specified by the operator. The color spectrum is divided into 16 areas of adjustment, where the hue and/or saturation of each area can be modified. This function is especially useful when only the hue of certain colors needs to be adjusted for special-effects work.

Multi Matrix OFF

Multi Matrix ON

Triple Skin Tone Detail Correction

Skin Tone Detail Correction controls the detail level of those objects in a scene with specific color tones. HDC1000/1500/1550 camera allows detail to be set independently for each of three separate color ranges. These colors are not limited to skin tones, but can be set for any color. Detail may be increased or decreased relative to the normal level.

Skin Tone Detail OFF

Skin Tone Detail ON

Knee Saturation

Traditionally, shooting very bright portions of an object (such as key light conditions from a person's forehead) can reduce color saturation and change the hue in highlight areas. The HDC1000/HDC1500/HDC1550 camera adopts a Knee Saturation function, in which this "washed-out" effect on saturation and hue change is reduced to a minimum, and far more natural color reproduction in highlight areas is achieved.

Knee Suturation OFF

Knee Suturation ON

Low-key Saturation

With conventional cameras, low light areas can be subject to a reduction in saturation. This can result in colors in those areas being "washed out". The Low Key Saturation function on the HDC1000/HDC1500/HDC1550 camera eliminates this problem by optimizing the amplification of color saturation at low light levels, providing more natural color reproduction.

Low-key Saturation OFF

Low-key Saturation ON

Selectable Gamma Table

A selectable gamma table of the camera allows users to create a specific look for a picture by selecting from a choice of fixed gamma patterns.

Variable Black Gamma Range

The Variable Black Gamma Range function allows for fine adjustment of tonal reproduction in the shadow area. This feature can help to bring out details from the dark parts of the picture without affecting mid-tones while maintaining the absolute black level.

Standard Video Gamma

Variable Black Gamma Range ON

Versatile System Components

The HDC1000/HDC1500/HDC1550 camera is compatible with a variety of peripherals including camera control units, remote controllers, command network units, and master setup units. This allows operators to flexibly configure the system according to their needs both in the studio and out in the field. Optional triax adaptors are available for the HDC1000/HDC1500 optical fiber-based camera to enable triax-based operation.

HDCU1000 Camera Control Unit
HDCU1500 Portable Camera Control Unit

The HDC1000/HDC1500/HDC1550 camera can be configured with two types of camera control units – the full-size HDCU1000 and half-rack HDCU1500. The optical fiber transmission system used in these units maintains the high picture quality of the camera across cable runs of up to 3000 meters (9843 feet)* with the HDCU1000 and up to 1800 meters (5906 feet)* with the HDCU1500. Both models are equipped with a range of built-in interfaces such as HD SDI/SD SDI outputs, HD/SD return inputs, and a down-converted analog composite monitor output. In addition, a variety of output interfaces are offered via optional boards, which are installed in four slots on the HDCU1000 and two slots on the HDCU1500. Furthermore, the Ethernet interface (100Base-TX) that is built into both CCUs allows the camera to be controlled over a network.

*When supplying power to the camera via the optical fiber cable, the maximum cable length varies with the camera system configuration, lens type, viewfinder type, the size of the optical fiber cable, and the number of cable connectors.

Three types of interface expansion option are available for both CCUs.

- The HKCU1001 SD Analog Interface Unit provides two analog NTSC or PAL VBS signal outputs, a WFM (Waveform monitor), and a monitor output.
- The HKCU1003 Multi Interface Unit consists of three types of interface board and provides:
  - Frame reference input and output to lock 2-3 pull-down sequence (Board A)
  - Two analog NTSC or PAL VBS signal outputs (Board B)
  - Analog NTSC or PAL VBS and analog component R/G/B or Y/R-Y/B-Y outputs (Board C)
- The HKCU1005 HD/SD Output Expansion Unit provides four HD SDI or SD SDI outputs.

HDCU1000

HDCU1000

- Eight HD SDI or SD SDI outputs
- Up to eight additional HD SDI or SDI outputs (with two optional HKCU1005 boards)
- Four sets of HD SDI, SD SDI, and analog composite return video inputs
- Built-in down-converted analog composite output
- Built-in 2-3 pull-down capability
- Two-channel teleprompter inputs
- Built-in Ethernet interface (100Base-TX)
- Two-channel data trunk lines (RS-422A or RS-232C) for easy data transmission
- AES/EBU digital audio output
- Two-channel microphone outputs (two XLR connectors)
- High power supply allowing HDC1000 camera or HDC1500/ HDC1550 with HDLA1500/HDLA1505 operation

HDCU1000 rear panel

HDCU1500

HDCU1500

- High power supply allowing HDC1000 camera or HDC1500/ HDC1550 with HDLA1500/HDLA1505 operation
- Three HD SDI or SD SDI outputs
- Up to eight additional HD SDI or SD SDI outputs (requires two optional HKCU1005 boards)
- Three HD SDI, SD SDI, or analog composite return video inputs
- Built-in down-converted analog composite output
- Built-in 2-3 pull-down capability
- RM-B750 Remote Control Unit attach capability on the front panel
- One channel teleprompter inputs
- Built-in Ethernet interface (100Base-TX)
- Two-channel data trunk line(RS-422A/RS-232C) for easy data transmission
- Two-channel microphone outputs (two XLR connectors)

HDCU1500 rear panel

HKCU1001
SD Analog Interface Unit

HKCU1003
Multi Interface Unit

HKCU1005
HD/SD Expansion Unit

RM-B750 Remote Control Unit

The RM-B750 Remote Control Unit has been designed to offer a highly mobile and fully controllable camera system in the field. The RM-B750 can be connected directly to the HDC1000/HDC1500/HDC1550 camera or attached to the half-rack HDCU1500 Camera Control Unit. The combination of an LCD touch-panel screen and direct push buttons enables full parameter adjustment of the camera to be controlled. For further operational convenience, the RM-B750 has a Memory Stick media card slot so that various setup parameters can be stored and recalled.

RM-B750

The RM-B750 attached to the HDCU1500

MSU-900 Master Setup Unit
MSU-950 Portable Master Setup Unit

The MSU-900/950 Master Setup Unit is a central control panel used for the adjustment of camera parameters in a multi-camera system. The MSU-900/950 unit is connected to each camera control unit in the system via the CNU-700 Command Network Unit or an Ethernet network hub.

- Central control of camera parameters for the entire camera system
- Picture and waveform monitor switching
- Precise picture adjustment
- Built-in 6.5-inch* type LCD display for clear viewing of adjustment parameters during operation
- Memory Stick slot for storing/recalling files
- Built-in Ethernet interface (100Base-TX)

* Viewable area, measured diagonally

MSU-900

MSU-950

RCP-750/751 Remote Control Panel

Two types of RCP-750 Series Remote Control Panels are also available, providing a range of control functions from the basic to the very sophisticated for operational adjustments of an HDC1000/HDC1500/HDC1550 camera. Each type is available with either a joystick or dial-type iris control.

RCP-750

RCP-751

CNU-700 Camera Command Network Unit

The CNU-700 Camera Command Network Unit allows communication between all the units in the system, and provides the ability to assign CCUs, MSUs, RCPs, and HDC1000/HDC1500/HDC1550 camera heads. A RISC-based microprocessor system provides high-speed transfer of command signals to the HDCU1000/HDCU1500/HDC1550 camera for rapid response and reliable control. One CNU-700 unit can control six cameras, but can be expanded to control up to 12 cameras when fitted with an optional BKP-7930 expansion board. Several CNU-700 units can be connected to the camera control network in a large system.

CNU-700

HDTX100 HD Triax Adaptor (Camera side)
HDFX100 HD Triax Adaptor (HDCU side)

The HDTX100 and HDFX100 HD Triax Adaptors are available to convert optical fiber transmission to the widely-used triax transmission. The HDTX100 adaptor is used with the HDC1000 and HDC1500 cameras* to convert their camera output to triax, while the HDFX100 adaptor is used with the HDCU1000 and HDCU1500 camera control units to receive triax signals from the camera side.

The triax-based system enables high-quality pictures to be transmitted from the HDC1000 camera and HDC1500/ HDC1550 cameras (with or without the HDLA1500/ HDLA1505 adaptor) over long distances – up to 1400 meters (4593 feet)** with a ø 14.5 mm triax cable or 1000 meters (3281 feet)** with a ø 13.2 mm triax cable. In addition, the HDTX100 adaptor enables hybrid triax and optical fiber operation. In this case, longer cable runs of more than 2000 meters (6562 feet)** can be achieved with the HDC1500 portable camera that is equipped with a portable lens and a small viewfinder.

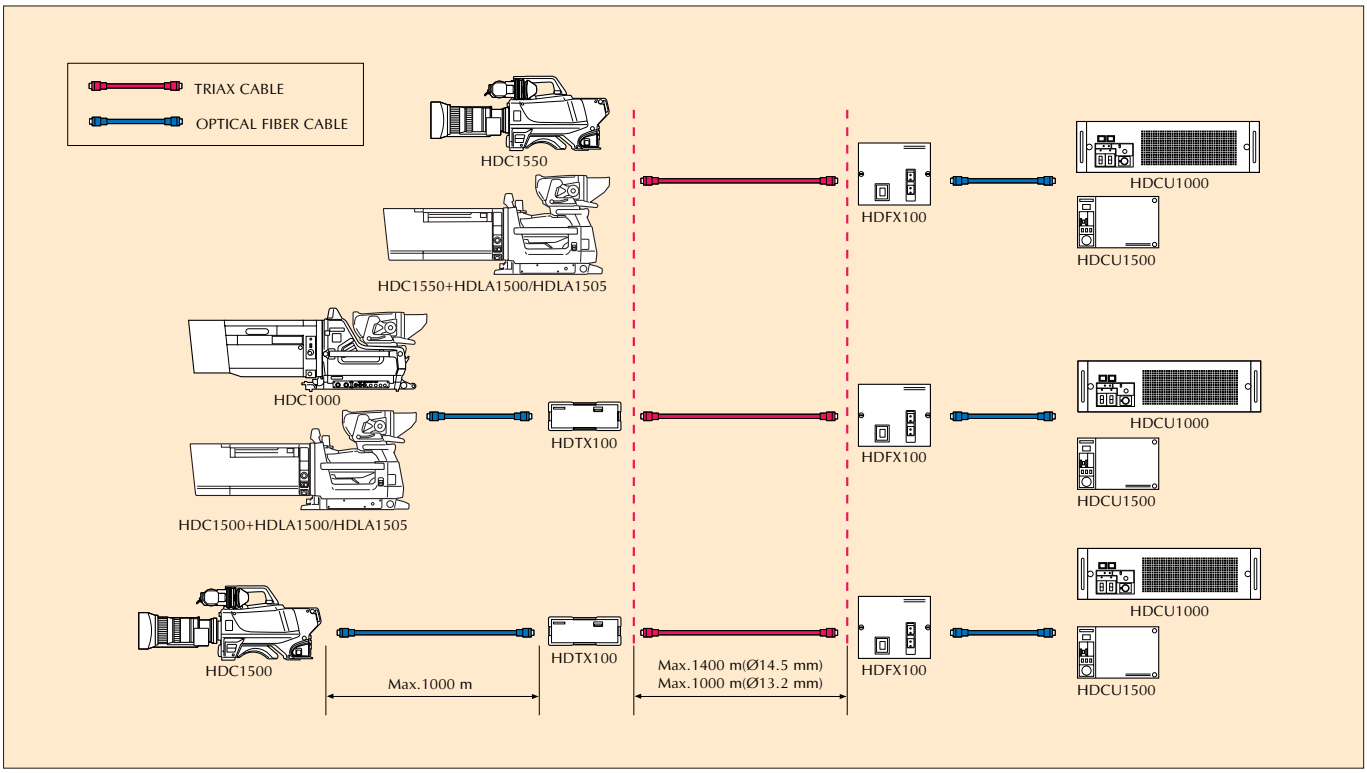
*The HDC1550 does not require the HDTX100 unit because it is equipped with a Triax output as standard.

** When supplying power to the camera via the optical fiber cable and/or triax cable, the maximum cable length varies with the camera system configuration, lens type, viewfinder type, the size of the optical fiber cable and/or triax cable, and the number of cable connectors.

HDTX100

HDFX100

Triax and Optical Fiber Operation



HKC-T1500 CCD Block Extension Adaptor

The HKC-T1500 CCD block adapter is a unique accessory for the HDC1500 and HDC1550 portable cameras. It allows the CCD block to be extended from the camera body by up to 10 m (up to 50 m with an optional cable). More creative camera shooting angles and the freedom to place the imaging assembly in areas where a full size camera would be restricted are achieved. The HKC-T1500 adaptor will expand the spectrum of HD camera applications in area such as snorkel lenses, helicopter gimbal mounts or mini jibs.

Extension Head Block with Handle

HKC-T1500 connected to the HDC1550

Panel

HDC1000

HDC1000 rear panel

HDC1000 inside panel

HDC1000 outside panel

HDC1500 / HDC1550

HDC1500

HDC1500 rear panel (CE)

HDC1550 rear panel

Optional Accesories

HDLA1500
Large Lens Adaptor

HDLA1505
Large Lens Adaptor

RM-B150
Hand-held Remote Control Unit

RCP-700/701
Remote Control Panel
(Photo shows RCP-700)

RCP-750/751
Remote Control Panel
(Photo shows RCP-750)

HDVF-20A
CRT B/W Viewfinder
for HDC1500/HDC1550

HDVF-C30W
LCD Color Viewfinder
for HDC1500/HDC1550

HDVF-700A
CRT B/W Viewfinder
for HDC1000

HDVF-9900
HD CRT Color Viewfinder
for HDC1000

HDVF-C730W
LCD Color Viewfinder
for HDC1500/HDC1550

Viewfinder Eye-piece for HDVF-20A
A-8314-798-A
(High performance, with soft cushion)

Viewfinder Eye-piece for HDVF-20A
A-8262-537-A (High magnification)
A-8262-538-A (Low magnification)
A-8267-737-A (Standard magnification with special compensation for aberrations)

BKW-401
Viewfinder Rotation Bracket
for HDVF-20A

BKP-7911
Script Holder

CAC-6
Return Video Selector

CAC-12
Mic Holder

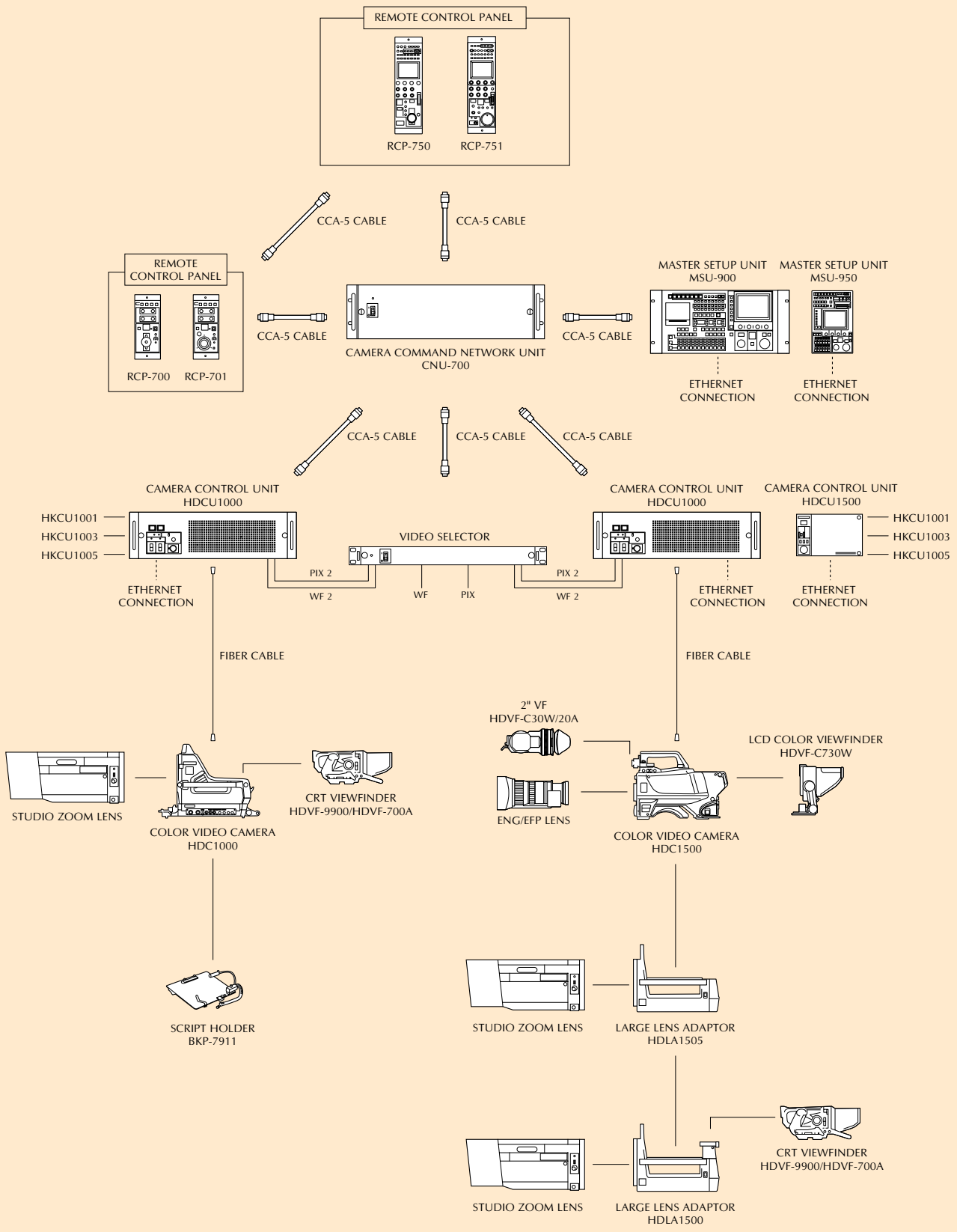
VCT-14
Tripod Adaptor

HKCU1001
SD Analog Interface Unit

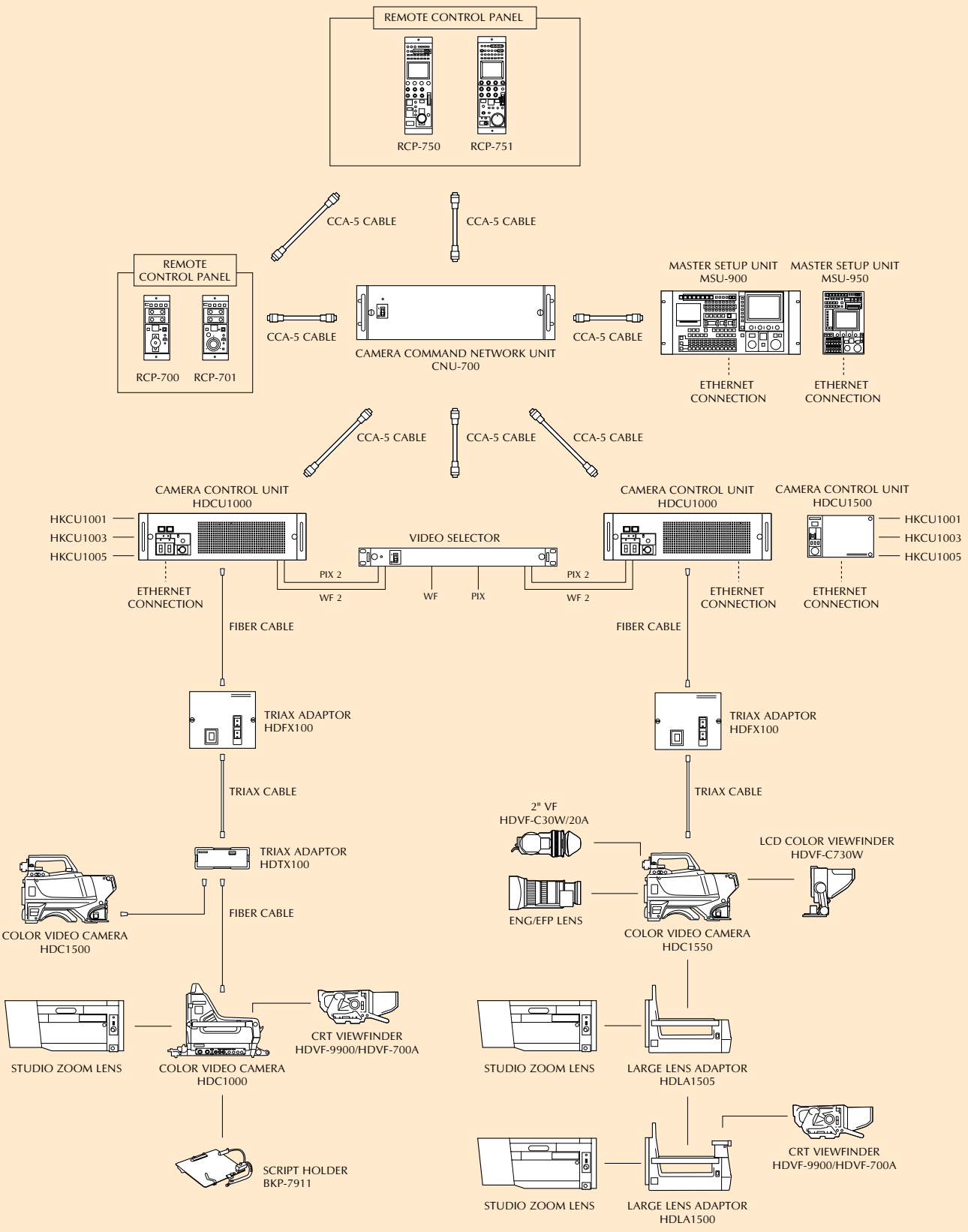
HKCU1003
Multi Interface Unit

HKCU1005
HD/SD Expansion Unit

System Configuration for Optical Fiber Operation



System Configuration for Triax Operation



HDC1000, HDC1500 and HDC1550 Specifications

	HDC1000	HDC1500	HDC1550
General			
Mass	Approx. 20 kg (44 lb 9 oz, without VF and lens)	Approx. 4.5 kg (9 lb 14 oz, without VF and lens)	Approx. 4.9 kg (10 lb 13 oz, without VF and lens)
Operating temperature	-20 to +45 °C (-4 to +113 °F)		
Camera			
Pickup device	3-CCD 2/3-inch type 16:9		
Effective picture elements (H x V)	1920 x 1080		
Spectrum system	F1.4 prism system		
Built-in filters	1: Clear, 2: 1/4ND, 3: 1/8ND, 4: 1/16ND, 5: 1/64ND		
	A: CROSS, B: 3200K, C: 4300K, D: 6300K, E: 8000K		
Servo filter control	Yes		
Sensitivity	F10 at 2000 lx (3200K, 89.9% reflectance)		
Signal-to-noise ratio	54 dB (typical)		
Horizontal resolution	1000 TV lines		
Dynamic range (1080/60i mode)	600%		
Registration	Within 0.02% (all zones, without lens)		
Shutter speed selection	1/100, 1/125, 1/250, 1/500, 1CTE/1000, 1/2000 s (1080/60i mode) 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000 s (1080/50i mode)		
Modulation depth	45% or more horizontally (800 TV lines at center, 27.5 MHz, with typical lens)		
Lens mount	Sony hanger mount	Sony bayonet mount	
Input connectors			
Audio in (CH-1)	XLR-3-31 type (1, female), mic or line selectable		
Audio in (CH-2)	XLR-3-31 type (1, female), AES/EBU or mic or line selectable		
Mic in (front)	-	XLR-3-31 type (1, female)	
Return control	6-pin (1)		
Genlok/retum in	-		BNC type (1)
DC in	XLR-4-pin type (1)		
Output connectors			
Test out	BNC type (1), 1.0 Vp-p, 75 Ω		
HD SDI out	BNC type (2)		BNC type (1)
Earphone out	-	Mini-jack (1), 8 Ω	
DC out	4-pin (1), 10.5 to 17 V, max. 1.5 A		
Input/output connectors			
CCU	Optical fiber connector		Triax connector
Lens	36-pin	12-pin	
Viewfinder	D-sub 25-pin	20-pin	
Remote	8-pin		
Prompter	BNC type (1), 1.0 Vp-p, 75 Ω		
Tracker	10-pin: Tracker R/T, R/G Tally, unregulated 12 V		
Crane	12-pin, Y/Pb/Pr, Trunk data I/O, Serial Data		
Intercom	XLR-5-pin (2, female)		
Supplied accessories			
	Operation manual (1), Front cover (1), Number plate for side panel (2), Belt for cable clamp (2), Angle adjustment fitting (2)	Operation manual (1), Lens cap (1), Label for assignable switch (1)	Operation manual (1), Lens cap (1), Label for assignable switch (1)

MSU-900 and MSU-950 Specifications

	MSU-900	MSU-950
General		
Power requirements	AC 100 to 240 V, 50/60 Hz	
Current consumption	0.35 A	
Operating temperature	+5 to +40 °C (+41 to +104 °F)	
Maximum cable length	200 m (656 feet)	
Mass	Approx. 4.5 kg (9 lb 14 oz)	Approx. 3.7 kg (8 lb 2 oz)
Dimensions (W x H x D)	482 x 67 x 222 mm (19 x 2 3/4 x 8 3/4 inches)	204 x 354 x 67 mm (8 1/8 x 14 x 2 3/4 inches)
Inputs/outputs		
Remote	CCU/CNU: 8-pin (1) AUX: 8-pin (1)	
I/O port	50-pin (1)	
Ethernet	6-pin (1)	
AC input	3-pin (1)	

HDLA1500 and HDLA1505 Specifications

	HDLA1500	HDLA1505
General		
Power requirement	240 V AC (max. 1.2 A)/180 V DC (max. 0.6 A)/12 V DC (max. 9 A)	
Operating temperature	-10 °C to +45 °C (+14 °F to +113 °F)	
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)	
Dimensions (Approx. W x H x D)	531 x 400 x 336 mm (21 x 15 3/4 x 13 1/4 inches)	
Mass (Approx.)	18.5 kg (40 lb 13 oz)	17.1 kg (37 lb 11 oz)
Input/output connector		
Lens	36-pin	
DC IN	XLR-4-pin (1), 10.5 to 17 V DC	
DC OUT	4-pin (1), 10.5 to 17 V DC, max. 1.5 A	
VF	D-sub 25-pin (1)	-

HDCU1000 and HDCU1500 Specifications

	HDCU1000	HDCU1500
General		
Power requirements	AC 100/120/220 to 240 V, 50/60 Hz	AC 100 to 240 V, 50/60 Hz
Maximum current consumption	5.4 A (at 100 V AC, entire system active)	4 A (at 100 V AC, entire system active)
Operating temperature	+5 to +40 °C (+41 to +104 °F)	-10 to +40 °C (+14 to +104 °F)
Mass	Approx. 16 kg (35 lb 4 oz)	Approx. 6.2 kg (13 lb 10 oz)
Dimensions (W x H x D)	424 x 133 x 410 mm (16 3/4 x 5 1/4 x 16 1/4 inches)	200 x 127 x 410 mm (8 x 5 1/9 x 16 1/4 inches)
HD / SD inputs/outputs		
HD SDI / SD SDI output	BNC type (4), SMPTE 292M, 1080/50i, 60i, 30P, 25P, 24P, 720/60P, 50P HD SDI/SD SDI selectable	BNC type (2), SMPTE 292M, 1080/50i, 60i, 30P, 25P, 24P, 720/60P, 50P HD SDI/SDI selectable
HD SDI / SD SDI monitor output	BNC type (4), SMPTE 292M, 1080/50i, 60i, 30P, 25P, 24P, 720/60P, 50P HD SDI/SD SDI selectable, character on/off selectable	BNC type (1), SMPTE 292M, 1080/50i, 60i, 30P, 25P, 24P, 720/60P, 50P HD SDI/SD SDI selectable, character on/off selectable
HD SDI return input	BNC type (4), SMPTE 292M, 1080/50i, 60i, 30P, 25P, 24P, 720/60P, 50P	BNC type (3), SMPTE 292M, 1080/50i, 60i, 30P, 25P, 24P, 720/60P, 50P HD SDI/SD SDI/VBS selectable
Character output	BNC type (1), SD analog video signal, character on/off selectable	BNC type (1), Character/Sync selectable, analog video signal, character on/off selectable
SDI return input	BNC type (4), SMPTE 259M, Serial digital component	SMPTE 259M, Serial digital component selectable from HD SDI return output
VBS return input	BNC type (4), NTSC/PAL	NTSC/PAL selectable from HD SDI return output
Sync		
Reference input	BNC type (1, with loop-through), HD tri-level sync or SD black burst	
Sync output	BNC type (1), HD tri-level sync or SD sync	HD tri-level sync or SD sync selectable from Character output
Intercom/Tally/PGM		
Intercom PD & ENG	D-sub 25-pin (1), 4W/RTS/CC selectable	
PGM1/PGM2	0/-20 dBu selectable	
R-Tally/G-Tally	24 V power in/make contact	
Audio		
MIC1/MIC2 output	XLR-3-31 type (2, female), 0/-20 dBu selectable	
Digital audio output (AES/EBU)	BNC type (1), AES/EBU format, 20-bit/48 kHz	-
Embedded audio	Embedded audio to HD SDI/SD SDI	
Prompter		
Prompter in	BNC type (2, with loop-through), Analog, NTSC/PAL/HD-Y	BNC type (1, with loop-through), Analog, NTSC/PAL/HD-Y
Others		
RCP/MSU/CNU interface	8-pin (1), Sony Camera Command Network Protocol (for entire camera system control)	
Ethernet	RJ-45 (1), 10BASE-T/100BASE-TX	
Mic remote	D-sub 15-pin	
WF mode	4-pin (2), Stair step (for SD composite Waveform monitor)	4-pin (1), Stair step (for SD composite Waveform monitor)
WF control	D-sub 15-pin (1), GPI (for SDI component WF control)	D-sub 15-pin (1), GPI (for SDI component WF control) WF control/mic remote selectable
System expansion I/O	D-sub 15-pin (1), GPI (for system control with external GPI interface)	-
Trunk line	D-sub 9-pin(1), RS-232C/422, (remote line for CHU equipment) 12-pin (round type connector), RS-232C/422 (remote line for CHU equipment)	12-pin (round type connector), RS-232C/422 (remote line for CHU equipment)
Camera		
Optical fiber cable interface	SMPTE 304M based optical fiber connector (1), 1.5 Gbps optical fiber digital transmission, SMPTE 292 M	

Optional input/output boards

HKCU1001 SD Analog Interface Unit	
VBS output	BNC type (2)
Analog composite monitor output	BNC type: WF (1), PIX (1)
HKCU1003 Multi Interface Unit	
VDA-A board: VBS I/F	
VBS output	BNC type (2)
Analog composite monitor output	BNC type: WF (1), PIX (1)
VDA-B board: Frame rate I/F	
Frame reference input/output	BNC type (1, loop-through), full pull-down sequence lock
Analog composite monitor output	BNC type: WF (1), PIX (1)
VDA-C board: Sub I/F	
VBS output	BNC type (1)
Analog component output	BNC type (3), R/G/B or Y/R-Y/B-Y selectable
HKCU1005 HD/SD Expansion Unit	
HD SDI/SD SDI output	BNC type (2)
HD SDI/SD SDI monitor output	BNC type (2), charactor on/off selectable

HKC-T1500 Specifications

General	
Power requirements	13.0 to 17.0 V DC
Operating temperature	-20 °C to +45 °C (-4 °F to +113 °F)
Operating humidity	10% to 90% (no condensation)
Mass	Cable adapter: approx. 0.5 kg (1 lb 2 oz) CCD block adapter: approx. 1.9 kg (4 lb 3 oz) (with CCD block)
Dimensions (W x H x D)	Approx.130 x 240 x 250 mm (5 1/8 x 9 1/2 x 9 7/8 inches)
CCD block adaptor I/F	
Camera cable	55-pin multicore cable connector (male)
MIC IN	XLR-3 (1, female)
LENS	12-pin (1)
VF	20-pin (1)
INCOM	XLR-5 (1, female)
Cable adaptor I/F	
Camera cable	55-pin multicore cable connector (female)
MIC OUT	XLR-3 (1, male)
VF	20-pin (1)
INCOM	XLR-5 (1, male)
Supplied accessories	
	Multi-core cable (12.5 m) (1), VF relay cable (1), MIC relay cable (1), INCOM relay cable (1), Top cover (1), Operation manual (1)

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