Ikegami

Unicam HD

4K

End-to-end Digital 3G HDTV Portable CMOS Camera System

HDK-97C

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HDK-97C

Employs high performance CMOS image sensors for superb picture quality Incorporates newly developed FPGA for video DSP Native multi-format Supports 60/50p and 4:4:4 3G HDTV formats Compact docking style camera body, fiber and triax adapters Fully compatible with traditional CCU-890/M/T (1.5G operation only) and CCU-970M (1.5G/3G operation)

Next generation 2.5 Mega pixel high performance CMOS sensors

The camera employs 2.5 Mega pixel 2/3-inch CMOS image ensors, achieving superior quality HDTV video with horizontal resolution of 1000TVL, SNR of 60dB or more, and sensitivity of F11.

Native Multi-format

The camera supports various kinds of native HDTV formats including 1080i/59.94, 1080i/50, 720p/59.94, 720p/50, 1080p/29.97, and 1080p/25. (50Hz formats are option) And it also supports 1080p/59.94 4:2:2, 1080p/50 4:2:2, 1080i/59.94 4:4:4, and 1080i/50 4:4:4 3G HDTV formats.

4 Return Video Input

Standard configuration includes 4 inputs for HD RET. Camera operator selects the RET input to be sent to the camera. When required a Frame Sync function can be selected for the RET video minimizing lock up disturbance (supports only 2 RET SDI input mode).

HD SDI QTV

One channel of HD SDI is sent from CCU to camera head for an external purpose such as a vanity monitor for the talent to see the program video in HDTV. This channel is independent of RET video.

Two HD-SDI outputs from the camera head

Two HD-SDI output signals (1.5G) are selectable between Camera, VF, RET and MON (monitor) for external monitoring at the camera head.HD QTV is added to the line up of HD SDI output signals .

Newly developed FPGA DSP

High density 45nm rule FPGA are employed for the digital video processing, including operation of the camera at dual rate speed for 60p and 2x slo-motion. The DSP includes custom gamma curves (cine gamma).

Native support for 23.98P

The camera supports not only 23.98pSF, but also native 23.98p and 1080i with 2-3 pulldown.

3G Transmission System

The fiber transmission system utilizes 3G in both directions, camera head to CCU and CCU to camera head, supporting dual rate formats such as 1080/59.94p, 4:4:4 formats, and 2x high speed slo-motion.

Embedded audio available as standard

All SDI outputs can be embedded with the audio signals of MIC-1 and MIC-2. Each channel has variable adjustment for delay time and Independent On/Off switching for embedded audio.

Digital Extender

There is the selection of x1.5, x2, x3, x4 digital extender available to enlarge the image at the center of shot without any loss in image sensitivity.

* It will reduce the resolution of the image.

2x Slo-Motion (1080i 119.88 / 100Hz)

Switchable for live and slo-motion picture with one camera, making it possible to get slo-motion picture without changing the camera position. (Option)

Base Station/Camera Control Unit

BS-98/CCU-980 Hybrid 2K/4K

The BS-98 and CCU-980 are new rack-mountable fiber transmission units for UnicamHD series cameras. High quality 4K ultra HD and 3G/HD-SDI output are supplied simultaneously when connected with a UnicamHD camera, such as an HDK-97C or HDK-95C (with FA97). It includes so called Super Resolution with non-linear processing, a new technology to reconstruct high resolution signals that is not possible in conventional HD processing! The CCU-980 is a full rack size camera control unit and the BS-98 is a half rack size base station. The CCU-980 can be fitted with a triax board set, allowing simple switching between SMPTE fiber and triax.
They support not only Ikegami's conventional one-by-one ICCP control or Arcnet based network control systems, but also an Ethernet based control system, allowing customers to choose the camera control system based on their needs.

State-of Art System Accessories, Expanding HDTV

CA-75HD Stand-alone Operation System

The CA-75HD is a camera adaptor for Unicam series HD cameras. Attaching this adaptor to Unicam series HD cameras makes stand-alone operation possible, such as wireless transmission or ENG-style with portable video recorders.

SE-H750 System Expander

The SE-H750 System Expander enables the use of the 9-inch viewfinder and full studio lenses with the HDK-97C, converting the portable camera into a full facility studio camera. Installation of the camera into the SE-H750 is very easy, and conversion back to portable configuration is quick for maximum operating flexibility.

Variety of viewfinders

For the HDK-97C, a 2-inch 16:9 high definition LCD color viewfinder for portable application is available. In addition, a 7.4-inch OLED and a 9-inch LCD color studio viewfinders are available as options.

2-inch LCD

9-inch LCD

VFE740HD 7.4-inch OLED Color Viewfinder

The VFE740HD is an OLED Color Viewfinder, employing a 7.4-inch QHD OLED panel, achieving high resolution, high brightness, high contrast and wide viewing angle. Its true color reproduction and high quality gradation provide optimum monitoring in the full range of uses. Especially its fast response achieves superb fast motion images for shooting sports, etc.

HD SDI Trunk

When the camera is operating in a conventional 1.5G format, a second 1.5G video from an external source can be transmitted to the CCU as a video trunk channel. For POV or 3D applications this will reduce the cables which need to be run.

2 Channels QTV

Two channels of QTV output (VBS) are available at the camera for prompter and external monitoring purposes.

* 2 channel QTV is not available operating at 720P/50Hz.

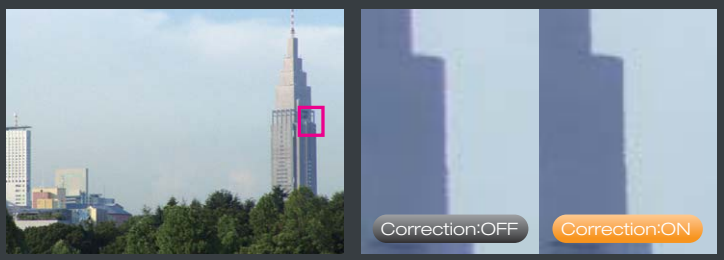
Docking style camera body

With a docking style camera body, either an FA (Fiber Adaptor) or TA (Triax Adaptor) can be mounted depending on the use. Lower profile and lower weight improve the manuverability for shoulder use.

FA(Fiber Adaptor) or
TA(Triax Adaptor)

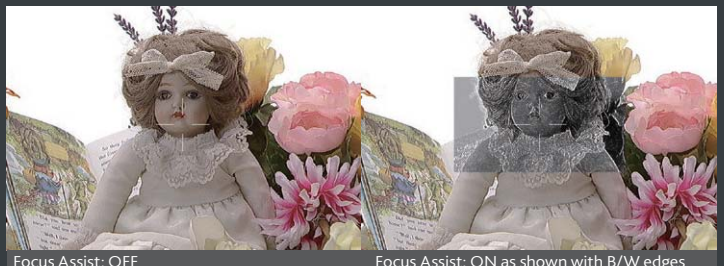
Lens Aberration Correction Function

The Lens Aberration Correction function is newly incorporated for minimizing the blur and colored edges caused mainly by lens chromatic aberration.



Camera Operator Assist Functions

There are two types of camera operator assist functions incorporated in the HDK-95C camera head. The viewfinder detail (VF DTL) function allows the camera operator to increase the detail edges to the viewfinder video for easy-focusing. In addition, the Quick EZ Focus (Focus Assist) function is a newly incorporated useful tool, providing very distinct enhancement to the viewfinder signal to enable the camera operator to make critical focus adjustment.



Focus Assist: OFF

Focus Assist: ON as shown with B/W edges

Sophisticated Camera Control Panel System

Three different control architectures are supported by the new OCP-300 Operation Control Panel and BSH-300 Ethernet/ICCP command converter, each with a wide range of camera control capability.The OCP-300 supports not only Ikegami's conventional one-by-one ICCP control and Arcnet based control systems, but also an Ethernet based control system, allowing customers the flexibly to choose the camera control system based on their needs. The OCP-300 includes a touch screen LCD with rotary encoders, and SD Memory Card slot for full camera setup and filing capability. The depth-of-control feature allows the OCP-300 control to be selected from basic to complete to fit the customer's operating discipline. The OCP-300 also supports PoE, Powering over Ethernet, so separate power supplies are not necessary. The BSH-300 is used for converting command between Ethernet and ICCP, allowing previous control panels such as the OCP-200 and MCP-200, to be integrated into the Ethernet network system.

*There are three types of BSH-300, Type-A, Type-B and Type-C, each with a different type and number of connectors.

OCP-300

BSH-300

BSH-300 (Type-A):
Integrate and power conventional OCPs (up to 6 sets)

BSH-300 (Type-B):
Integrate conventional BS/CCUs (up to 6 sets)

BSH-300 (Type-C):
Integrate and power conventional MCP (1 set) and Conventional OCPs (up to 2 sets)

***Recommended Control Panels for Ethernet based camera control:**
OCP-300, OCP-200, OCP-100, MCP-200, MCP-170

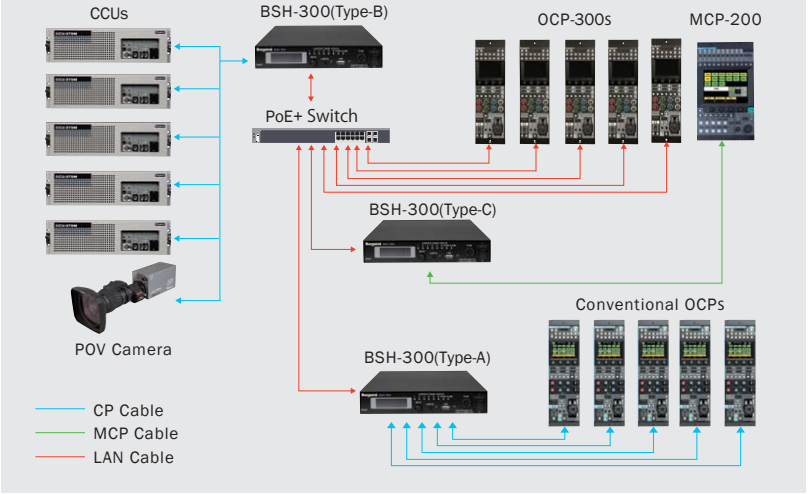
***A PoE+ switch is recommended for powering control panels over Ethernet.**

***Recommended PoE+ switches:**
GSM7212P(NETGEAR), GEP-0822 (Level One)

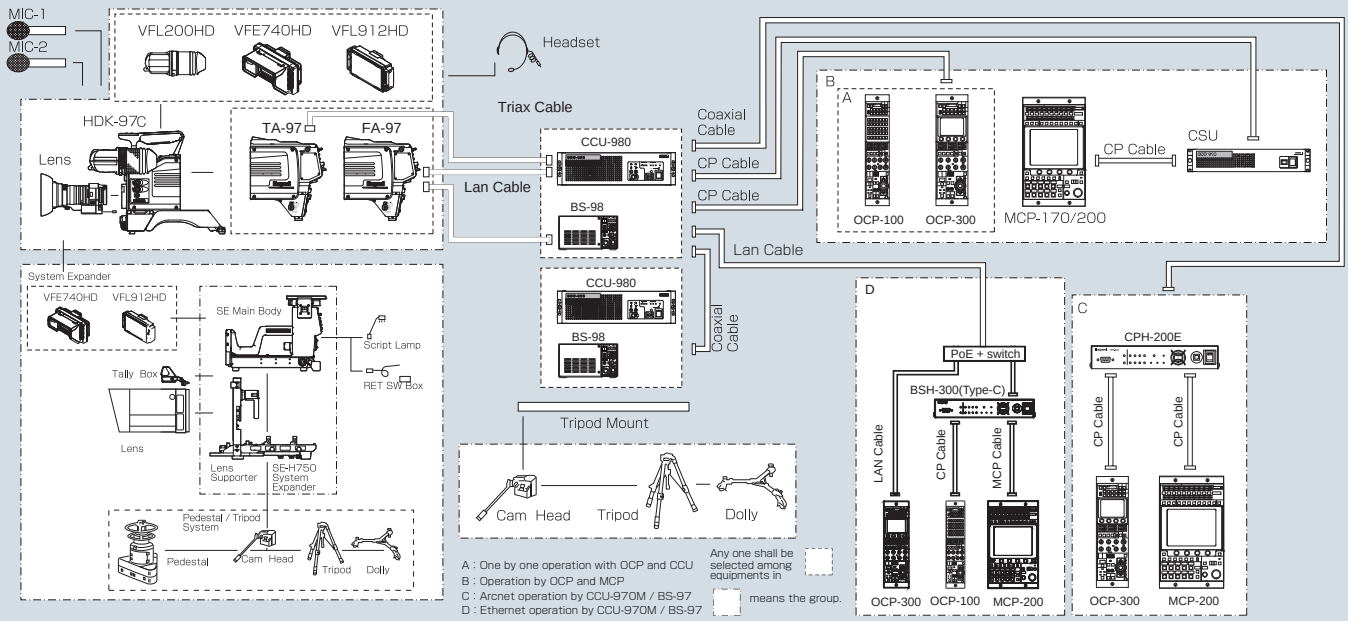
***It is recommended to use control panel components in a dedicated network, excluding other devices such as PCs, etc.**

***The control speed can get slower due to the number of control panels connected and network condition.**

Ethernet based camera control system



SYSTEM CONFIGURATION FOR HDK-97C



Rating

HDK-97C / FA-97

Output Formats HDK-97C/CCU-970M/ BS-97	1080p (59.94Hz or 50Hz) Y,Pb,Pr 4:2:2 Progressive (50Hz option) (above SMPTE425 Level B) 1080i (59.94Hz or 50Hz) Y,Pb,Pr 4:2:2 Interlaced (50Hz option) 1080i (59.94Hz or 50Hz) RGB 4:4:4 Interlaced (50Hz Option) 1080i (119.88Hz or 100Hz) Y,Pb,Pr 4:2:2 Interlaced (Option) 1080p (29.97Hz or 25Hz) Y,Pb,Pr 4:2:2 Progressive 720p (59.94Hz or 50Hz) Y,Pb,Pr 4:2:2 Progressive (50Hz Option) 1080p (23.98Hz) RGB 4:4:4 Progressive 1080p (23.98Hz) Y,Pb,Pr 4:2:2 Progressive 480i (59.94Hz) Y,Pb,Pr 4:2:2 Interlaced 576i (50Hz) Y,Pb,Pr 4:2:2 Interlaced (Option)
Image Sensors	2/3-inch 2.5 million pixel CMOS Sensors
Optical system	2/3-inch, R,G,B 3 Prism, F1.4
Lens Mount	BTA- S1005B

Filter

	1	2	3	4	5
ND	CAP	100%	25%	6.20%	1.60%
	A	B	C	D	E
CC	CROSS	3200K	4300K	6300K	8000K

Ambient Temperature	-20°C to +45°C (-4°F to 113°F)
Relative Humidity	30% to 90% (Non-condensing)
Operating Voltage	+11 to 16V
Weight	Approx 4.5kg (9.9lbs) (Head + FA)
Dimensions	W138.5 x H270 x D337mm (W5.5 x H10.62 x D13.25 inches)
Input Signals	
External Sync Signal	SYNC 0.6Vp-p ±6dB 75ohm BNC CN 1ch (BB/PS Signal)
Audio Signal	-60dB to +4dB (Variable) / -20dB (Fixed) XLR CN 2ch (600 ohm Balanced)
Intercom Signal	XLR Type or 110 Type CN 2ch
Video Trunk	Serial Digital 75 ohm BNC 1ch (Option)
Output Signals	
3G-SDI/HD SDI Signal	Serial Digital 75 ohm BNC 1ch
Q-TV Signal	75 ohm VBS 2ch (2nd channel is option in 50Hz, and 1ch only in 720p/50Hz)
MON Video Signal (1.5G)	VF / RET / MON (MENU Selection) Serial Digital 75 ohm BNC 1ch OR VF / RET / MON / HD-QTV (MENU Selection) Serial Digital 75 ohm BNC 1ch (Factory Option) *Optional HD-QTV(Trunk) module should be installed in CCU.
HD QTV	Serial Digital 75 ohm BNC 1ch (Option)
Intercom Signal	0 dBs 4ch (ENG/PROD/PGM1/PGM2) XLR Type or 110 Type CN
Perfomance	
Sensitivity	F11(Typical) at 2000lx (in 1080i/59.94)
S/N	60dB or more (F11 in 1080i/59.94)
Limiting Resolution	1000TV lines (in 1080i/59.94)
Modulation Depth	55% at 800TV lines (in 1080/59.94)
Detail Correction	Vertical:5 lines Horizontal:Boost frequency: 13MHz to 22MHz (HDTV)
Gamma	OFF, 0.35, 0.4, 0.45
Gain	-3dB, 0dB, +3dB, +6dB, +9dB, +12dB

TA-97A

Input Signals	
External Sync Signal	SYNC 0.6Vp-p ±6dB 75ohm BNC CN 1ch (BB/PS Signal)
Audio Signal	-60dB to +4dB (Variable) / -20dB (Fixed) XLR CN 2ch (600 ohm Balanced)
Intercom Signal	XLR Type or 110 Type CN 2ch
Output Signals	
HD SDI Signal	Serial Digital 75 ohm BNC 1ch
Q-TV Signal	75 ohm VBS 1ch
MON Video Signal (1.5G)	VF / MON (MENU Selection) Serial Digital 75 ohm BNC 1ch
Intercom Signal	0 dBs 4ch (ENG/PROD/PGM1/PGM2) XLR Type or 110 Type CN

BS-98/CCU-980

HDTV System(Input Signals)		
External reference input		GENLOCK : Tri-level sync ot BBS 75 ohm BNC x2 (Loop Through) (HDTV/SDTV automatic detection) SUB REF: 10 Field ID 75 ohm BNC x2 (Loop Through)
Return video input		75 ohm 3G/HD/SD-SDI Single End 4ch or 2ch Active-Through (Menu Selection)
Q-TV (prompter) input		HD-QTV: HD-SDI 75 ohm single end 1ch (require 3G bandwidth fiber adaptor) SDTV: VBS 75 ohm single end 2ch
Output Signals		
Line video output	4K : 3G/HD-SDI	Serial Digital 75 ohm BNC 4ch 1 output each (OUT3) Quad link (3840 x 2160 Progressive Square Division)
	2K : 3G/HD-SDI	Serial Digital 75 ohm BNC 2ch 4 outputs (OUT1/OUT2) SMPTE 425M, SMPTE 372M, SMPTE292M standard * 3G-SDI format supports Dual-Link outputs (Menu Selection)
Monitor video output	2K : 3G/HD-SDI	Serial Digital 75 ohm BNC 1ch 1 output (HD PM) *SMPTE 425M, SMPTE292M standard
Trunk video output		HD-TRUNK: HD-SDI 75 ohm single end 1ch (require 3G bandwidth fiber adaptor)
Intercom(ENG/PROD)		4-wire or Clearcom or RTS
4-wire		0dBm 600 ohm 2ch
Clearcom		-15dBs 200 ohm 2ch
RTS		0dBs 200 ohm 2ch
MIC		0dBs 2ch 2 outputs Low impedance
Tally		R/G/Y 3ch OPEN (OFF) / GND (ON) 50mA (max)
Control		
Arcnet		BNC x1ch
Ethernet		RJ-45 x1ch
ICCP		OCP/CCP x1, CCP/CSU x1
General		
Operating Voltage		AC100/110/117/220/240V±10%
Power Consumption		BS-98:Approx. 80VA (BS only) Power for camera head: less than 155VA CCU-980:Approx. 110VA (CCU only) Power for camera head: less than 400VA
Ambient Temperature		BS-98:0°C to +40°C (32°F to 104°F) CCU-980:0°C to +45°C (32°F to 113°F)
Relative Humidity		30% to 90% (Non-condensing)
Dimensions		BS-98:W218.6 x H125x D457mm (W8.63 x H4.92 x D18.00 inches)(excluding protrusions) CCU-980:W483×H133×D454mm (W19.00 x H5.25 x D17.88 inches) (excluding protrusions)
Weight		BS-98:Approx. 9kg (20 lbs) CCU-980:Approx. 28kg (62 lbs)

4K-ready, with BS-98/CCU-980 2K/4K Multi-format Base Stations.

Design and specifications are subject to change without notice.

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