

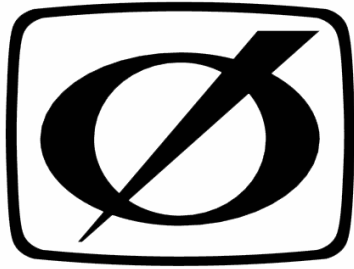
PHASE | Ikegami: HDK Series

- HDK-55.....p. 2
- HDK-65C.....p. 6
- HDK-95C.....p. 10
- HDK-97A.....p. 14



Ikegami

Unicam HD



PHASE®

16-bit Full Digital HDTV
Portable Camera System

HDK-55



HDK-55

The HDK-55 is a high performance full digital HDTV camera with superb picture quality and system versatility for studio and field production.

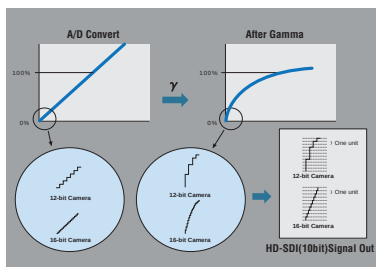


Newly developed FPGA with advanced full digital process ASIC

The HDK-55 incorporates a newly developed FPGA together with advanced full digital process ASIC to achieve outstanding picture performance.

Video processing technology to maximize the benefit of 16-bits

This camera is designed from the start based on 16-bit A/D and matching 16-bit DSP to maximize the benefits of high bit quantization. Especially for the dark areas of the picture, the higher gradation for gamma and other circuits improves the reproduction, providing for more natural color in the shadow areas of the picture.



2/3-inch 2.3 Mega pixel AIT CCDs

2/3-inch 2.3 Mega pixel AIT CCDs are employed to achieve 1000 TVL horizontal resolution with excellent signal to noise ratio of 60dB at F10 (1080/59.94i) or F11 (1080/50i) sensitivity.

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.

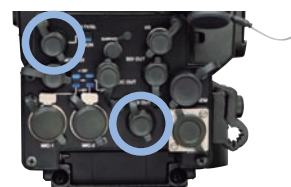
FA(Fiber Adaptor) or TA(Triax Adaptor)



2 Channels QTV

Two channels of QTV output (VBS) are available for prompter and external monitoring purposes. The AUX OUT (VBS) connector can be assigned to QTV-1, QTV-2, or Main video by menu.

Note:BS/CCU should support 2 channels of QTV



Sophisticated features made possible with digital technology

The Fine Detail (DTL) function makes the picture more realistic by compressing the detail edge component when shooting high contrast scenes. Highlight DTL and several other DTL functions are also available.

▶ Camera Operator Assist Functions

There are two types of camera operator assist functions incorporated in the HDK-55 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 newly incorporated useful tool, providing very distinct enhancement to the viewfinder edge signal to enable the camera operator to make critical focus adjustment.



Normal VF image



FOCUS ASSIST ON Sample A

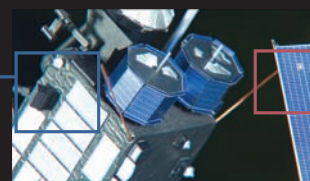


FOCUS ASSIST ON Sample B

▶ 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.

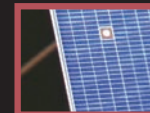
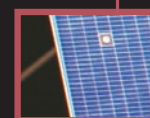
Normal Image(Correction OFF)



Correction OFF



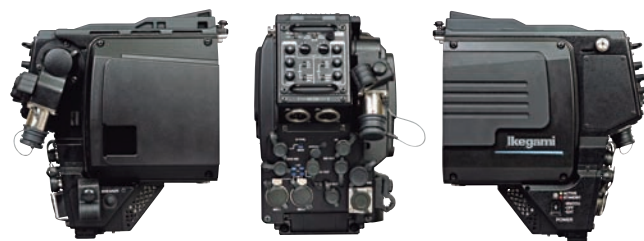
Correction ON



Affordable Camera Control Unit

The BSF-55 is newly designed in the compact size of 1.5RU height with 19-inch rack mount width, transmitting uncompressed high quality pictures with use of an optical fiber connection between HDK cameras. Both HDTV and SDTV formats are supported simultaneously in both digital and analog form with a wide range of built-in interfaces. The BSF-55 also features embedded audio in the SDI output signals.

A half-rack base station, BS-89A, is also available, permitting full SMPTE fiber cable extension with a compact base station, suitable for small sized OB vans and rental / flight-pack systems. The BS-89A supports 2 channels of QTV to match the camera head feature.



State-of Art System Accessories, Expanding HDTV

SE-H700 System Expander

The SE-H700 System Expander enables the use of the 9-inch viewfinder and full studio lenses with the HDK-55, converting the portable camera into a full facility studio camera. Installation of the camera into the SE-H700 is easy, and conversion back to portable configuration is quick for maximum operating flexibility.



Variety of Viewfinders

For the HDK-55, 2-inch 16:9 high definition VFs for portable application are available, including monochrome CRT type and color LCD type. In addition, 5-inch CRT, 7-inch LCD and 9-inch LCD color viewfinders are also available as options.

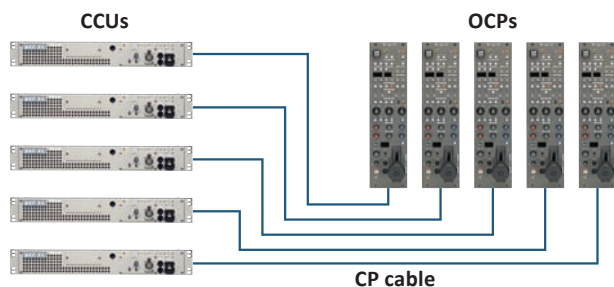


Sophisticated Camera Control Panel System

There are two types of camera control panel systems, each with a wide range of camera control capability. The conventional OCP allows direct and quick control of various camera parameters using dedicated buttons on the panel. The OCP-200 / MCP-200 Network based control panel system allows any OCP to control any camera with assignment set at the OCP itself. System wiring is simplified with control of up to 96 cameras via a single coax cable between CCU locations and video control locations. The OCP-200 and MCP-200 include touch screen LCDs.

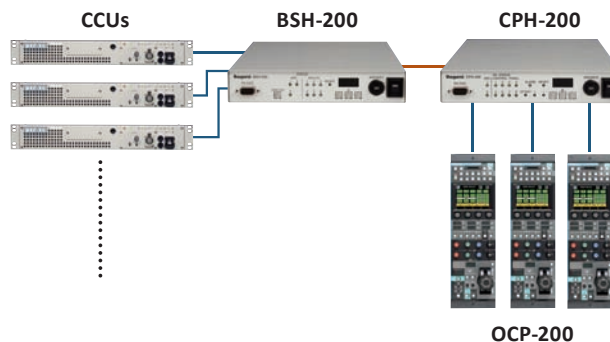
The depth-of-control of the OCP-200 can be selected from basic to complete to fit the customers' operating discipline. Conventional one by one camera control connection is also available with the OCP-200.

Conventional one by one camera control connection



New and traditional control panels can be directly connected to the cameras on a one-by-one basis.

Arc net based camera control system



HDK-55**Ratings**

HDK-55 Camera Head with FA-55						
Scanning System	1080/59.94i, 1080/50i					
Image Sensor	2/3-inch 2.3 million pixel AIT CCD					
Optical System	2/3-inch RGB prism, f1.4					
Lens Mount	BTA-S1005B					
Filter *	Optical Filter (servo)		1	2	3	4
		ND	100%	25%	6.20%	1.60%
	Electronic Color Compensation		A	B	C	D
	ECC	3200K	4300K	6300K	8000K	
Sensitivity	F10 (1080/59.94i) / F11 (1080/50i) typical at 2000 lx (White reflection 89.9%)					
S/N Ratio	60dB typical (HDTV)					
Limiting Resolution	1000TV lines					
Gain	-6,-3, 0, +3, +6, +12, +18dB					
Electric Shutter	1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000					
Operating Temperature	-20°C to +45°C(-4°F to -113°F)					
Operating Humidity	30% to 90% (non-condensing)					
Operating Voltage	DC +11 to +16V					
Weight	4.5Kg (9.92 lbs) with FA-55					
Dimensions	W138.5 x H270 xD337 mm (W5.45 x H10.63 x D13.27inch) Approx. (excluding protrusions) (with FA-55)					
Power Consumption	Approx. 20W (without FA-55)					
Input signals						
External Sync Signal	SYNC 0.6Vp-p ±6dB 75ohm BNC type 1ch					
Audio Signal	-60 to +4dB (Variable) / -20dB (Fixed) XLR type 2ch (600ohm balanced)					
Intercom Signal	XLR type or 110 type 2ch					
Output signals						
Main Video Signal	Y,Pb,Pr 4:2:2 serial digital, Fiber optic connector 1ch					
SDI OUT	HD-SDI, BNC type 1ch					
MON SDI	HD-SDI, BNC type 1ch (VF, RET, or Main video selectable by menu)					
Q-TV	VBS signal, BNC type 1ch (QTV or Mon video (HD-Y signal) switch selectable)					
AUX OUT	VBS signal, BNC type 1ch (QTV-1, QTV-2, or Main video selectable by menu)					
DC OUT	+12VDC 500mA (max), 4-pin type 1ch					

*Dual servo filter version will be available later (model name may change)

BSF-55 Base Station	
Operating Humidity	30% to 90% (non-condensing)
Operating Voltage	AC100V to 240V ±10%
Weight	Approx. 7kg (15.43 lbs)
Dimensions	W483 x H66.4 x D405 mm (19.02 x 26.14 x 15.94 lbs) (excluding protrusions)
Power Consumption	Approx. 55VA
Input signals	
External Genlock	BNC type, 1ch (HDTV/SDTV auto detect) HD: PS(1Vp-p) or Tri-Sync Signal(0.6Vp-p±6dB) 75ohm bridged SD: VBS(1Vp-p) or BBS 75ohm bridged
SDI Return Video Signal	75ohm Single End, BNC type 2ch (HD/SD SDI selectable)
VBS Return Video Signal	75ohm Single End, BNC type 2ch
Q-TV Signal	VBS 1Vp-p 75ohm Single End, BNC type 1ch
Intercom/Tally	
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
PGM(Program Sound)	0dBs 600 ohm/10k ohm switchable 2ch
Tally	R/G 2ch
Output signals	
HD-SDI/SD-SDI Signal	HD-SDI(SMPTE292M) /SD-SDI(SMPTE259M), 75ohm BNC type 4ch(HD-SDI/SD-SDI selectable)
WFM Signal	Serial Digital 75ohm BNC type 1ch (HD-SDI/SD-SDI selectable)
PM Signal	Serial Digital or VBS 75ohm BNC type 1ch (HD-SDI/SD-SDI selectable)
VBS Signal	1.0Vp-p 75ohm BNC type 2ch
MIC	0dBs/+4dBs Low 2ch
Intercom/Tally	
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
Tally	R/G 2ch

Design and specifications are subject to change without notice.

**Ikegami Tsushinki Co.,Ltd.**■URL:<http://www.ikegami.co.jp/en/>

U214A123-ED1

■ Head Office

5-6-16 Ikegami, Ohta-ku, Tokyo 146-8567, Japan TEL.03-5700-1111/FAX.03-5700-1137

■ Overseas Sales Division

5-6-16 Ikegami, Ohta-ku, Tokyo 146-8567, Japan TEL.03-5700-4117/FAX.03-5748-2200

Ikegami Electronics (Europe) GmbH■URL:<http://www.ikegami.de>

■ Headquarters

Ikegami Strasse 1, D-41460 Neuss, Germany TEL.02131-1230/FAX. 02131-102820

■ U.K. Branch

Unit E1 Cologne Court, Brooklands Close, Windmill Road, Sunbury-on-Thames, Middlesex TW16 7EB, England TEL.01932-769700/FAX.01932-769710



Ikegami



The Latest Technology
Full Digital HDTV Portable CMOS Camera System

HDK-65C

Unicam HD



The Latest Technology
Full Digital HDTV Portable CMOS Camera System

HDK-65C



Next generation 2.5 Mega pixel high performance CMOS sensors

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

Native Multi-format

The CMOS sensors support native progressive and native interlace readout modes of operation. The camera supports 1080i/59.94 or 720p/59.94 as standard. Both formats (switchable format camera) are available as an option. Additional optional formats include 1080p/29.97SF and 50 Hz formats.

Camera Operator Assist Functions

The HDK-65C camera head incorporates a camera operator assist function to aid the operator finding correct focus. The viewfinder detail (VF DTL) function allows the camera operator to increase the detail edges to the viewfinder video for easy focusing.

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 maneuverability for shoulder use.

FA(Fiber Adaptor) or TA(Triax Adaptor)



Prompter Video Channel

A QTV output (VBS) is available for prompter purposes. RET video out (HD SDI) is available for talent monitor purposes. Utility power output is also available, eliminating the need for additional cables on the studio floor.

Newly developed FPGA DSP

High density 45nm rule FPGA are employed for the digital video processing for superb picture quality. The DSP includes custom and cine gamma curves.

Digital Extender

There is the selection of 1.5X, 2X, 3X, 4X digital extender available to enlarge the image at the center of the shot without any loss in image sensitivity.

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.

Fully compatible with previous CCUs (such as CCU-890M) and current CCUs and Base Stations

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.



Correction:OFF

Correction:ON

Camera Operator Assist Functions

There are two types of camera operator assist functions incorporated in the HDK-65C 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

Affordable Camera Systems

FA-55 / BSF-55 SMPTE Fiber System

The FA-55 / BSF-55 are the fiber adaptor and base station which are ideal for the HDK-65C operating in 1080i or 720p formats. The BSF-55 is newly designed in a compact size of 1.5RU height with 19-inch rack mount width, transmitting uncompressed high quality pictures with use of an optical fiber connection between HDK camera and base station. Both HDTV and SDTV formats are supported simultaneously in both digital and analog form with a wide range of built-in interfaces. The BSF-55 also features embedded audio in the SDI output signals.



DTA-55 / BST-55 Digital Triax System

The DTA-55 / BST-55 is a triax transmission system, using Ikegami's original super low latency digital transmission to minimize degradation and deliver the full resolution and SNR of the camera head to the base station regardless of the triax cable distance. This new transmission system allows customers to transition from SD to HD while still using their existing triax camera cable infrastructure, saving cost and continuing to use a rugged easy to repair cable/connector type.



State-of Art System Accessories, Expanding HDTV

CA-75HD Stand-alone Operation System

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



Variety of viewfinders

For the HDK-65C, 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.



SE-H750 System Expander

The SE-H750 System Expander enables the use of the 9-inch viewfinder and full studio lenses with the HDK-65C, 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.



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.



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 flexibility 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.

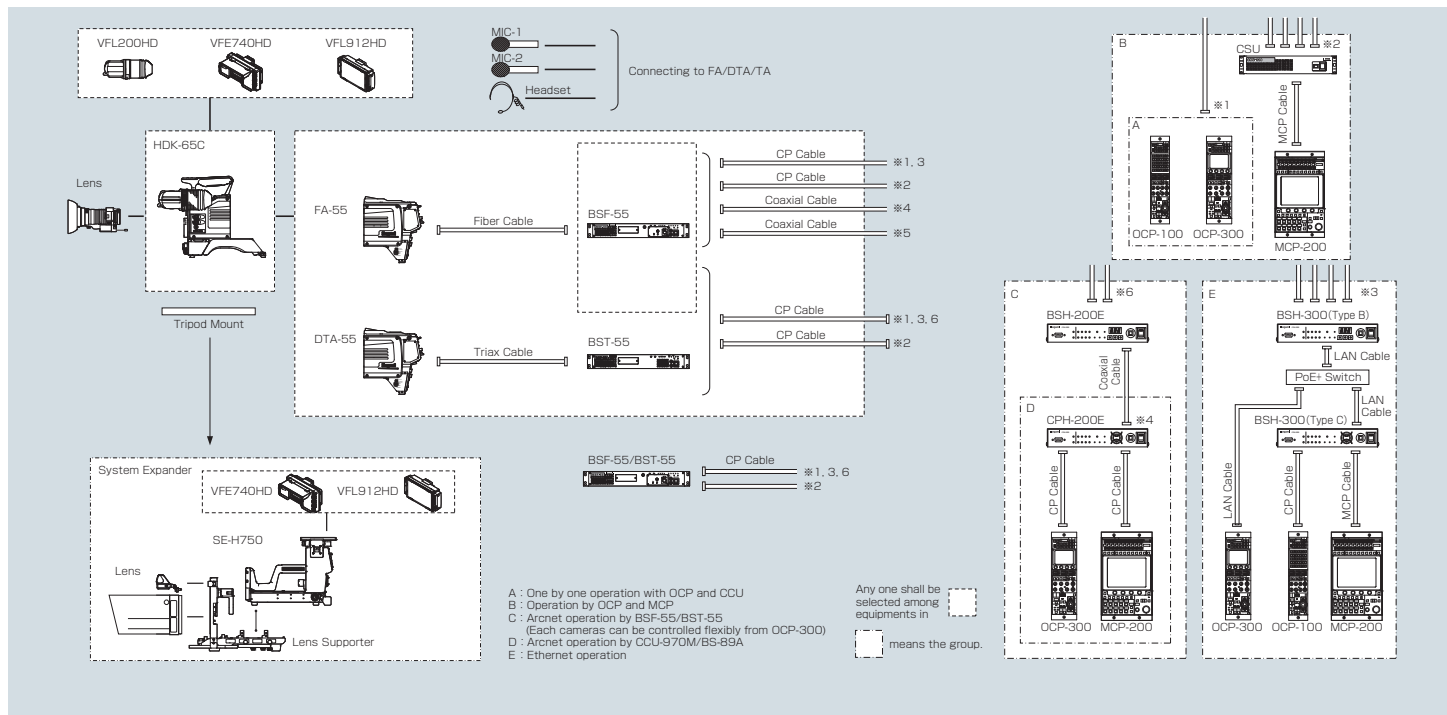


OCP-300



BSH-300

SYSTEM CONFIGURATION FOR HDK-65C



Rating

HDK-65C

Supporting Formats	1080i (59.94Hz or 50Hz) Y,Pb,Pr 4:2:2 Interlaced (50Hz option) 720p (59.94Hz or 50Hz) Y,Pb,Pr 4:2:2 Progressive (1format standard, 2nd option) 1080p (29.97Hz and 25Hz) Y,Pb,Pr 4:2:2 Progressive					
Image Sensors	2/3-inch 2.5 million pixel CMOS Sensors					
Optical System	2/3-inch, R,G,B , F1.4					
Lens Mount	BTA- S1005B					
Filter	1	2	3	4	5	
	ND	CAP	100%	25%	6.2%	1.6%
		A	B	C	D	E
	CC	CROSS	3200K	4300K	6300K	8000K
Sensitivity	F11(typical) at 2000lx (in 1080i/59.94)					
S/N	60dB or more (in 1080i/59.94)					
Limiting Resolution	1000TV lines (in 1080i/59.94)					
Modulation Depth	55% at 800TV lines (in 1080i/59.94)					
Variable Color Temperature	2,000K~20,000K variable					
Electric Shutter	1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000					
Detail Correction	Vertical: 5 lines Horizontal : Boost frequency : 13MHz~22MHz (HDTV)					
Gamma	OFF, 0.35, 0.4, 0.45					
Gain	-6dB, -3dB, 0dB, +3dB, +6dB, +9dB, +12dB					
Ambient Temperature	-20°C ~ +45°C (-4°F ~ 113°F)					
Relative Humidity	30% ~ 90% (Non-condensing)					
Operating Voltage	DC+11 to DC+16V					
Weight	Approx 4.6kg (10.1lbs) (Head + FA or TA, excluding VF)					
Dimensions	W138.5 x H270 x D337mm (Head + FA or TA, excluding VF) (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) * DTA-55 does not have external sync signal input in self-contained operation.					
Audio Signal	-60dB ~ +4dB (Variable) / -20dB (Fixed) XLR CN 2ch (600 ohm Balanced)					
Intercom Signal	XLR Type or 110Type CN 2ch					

Output Signals	
Analog Video Signal	R, G, B D-Sub CN 1ch (for System Expander)
HD SDI Signal with FA-55	Serial Digital 75ohm BNC 1ch
HD SDI Signal with DTA-55	Serial Digital 75ohm BNC 1ch * The output signal should be fixed with main video signal in self-contained operation, and set to RET signal in cable operation. * The audio signal is not embedded.
Q-TV Signal	FA-55: VBS signal, BNC type 1ch DTA-55: SD-SDI signal, BNC type 1ch
MON Video Signal	VF / RET / MON (MENU Selection) Serial Digital 75ohm BNC 1ch
Intercom Signal	0 dBs 4ch (ENG/PROD/PGM1/PGM2) XLR Type or 110Type CN
DC Output	+12VDC 500mA (max), 4-pin type 1ch * Option for DTA-55

BSF-55 / BST-55

Input Signals	
External Sync Signal	HDTV: PS 1Vp-p 75ohm bridged or Tri-sync signal 0.6Vp-p ± 6dB 75ohm bridged connection SDTV: VBS 1Vp-p 75ohm bridged connection or BBS 75ohm bridged connection
Return Video Signal	HD/SD-SDI: 75ohm single end, 2ch (HD/SD-SDI Selectable) VBS: 75ohm single end, 2ch
Q-TV Signal	BSF-55: VBS 75ohm single end, 1ch BST-55: SD-SDI 75ohm single end, 1ch
Intercom(ENG/PROD)	4-wire or Clearcom or RTS
4-wire	0dBm 600ohm 2ch
Clearcom	-15dBs 200ohm 2ch
RTS	0dBs 200ohm 2ch
PGM(Program Sound)	0dBs 600ohm/10k ohm switchable 2ch
Tally	R/G 2ch

Output Signals	
HD-SDI/SD-SDI Signal	HD-SDI(SMPTE292M) /SD-SDI(SMPTE259M) 75ohm BNC type 2ch 4 outputs (HD-SDI/SD-SDI selectable)
VBS Signal	1.0Vp-p 75ohm BNC type 1ch 2 outputs
PM Signal	Serial Digital 75ohm, 1ch (HD-SDI/SD-SDI selectable) VBS 75ohm, 1ch
WFM Signal	Serial Digital 75ohm, 1ch (HD-SDI/SD-SDI selectable)
Phase Reference Signal	75ohm single end Analog 1ch HDTV: Tri-Sync(0.6Vp-p) / SDTV: HV(2Vp-p) (MENU selectable)
Intercom(ENG/PROD)	4-wire or Clearcom or RTS
4-wire	0dBm 600ohm 2ch
Clearcom	-15dBs 200ohm 2ch
RTS	0dBs 200ohm 2ch
MIC	0dBs/4-4dBs 2ch 2outputs Low impedance (MENU selectable)
Tally	R/G 2ch
Data Trunk	RS-422 1ch * In case of the BST-55, the data trunk channel is not supported as standard.
Dimensions	BSF-55/BST-55: W483 x H66.4 x D405 mm (19.00 x 2.63 x 16.00 inches) (excluding protrusions)
Weight	BSF-55: Approx. 7kg (15.43 lbs) BST-55: Approx. 8kg (17.64 lbs)
Ambient Temperature	0°C ~ +40°C (32°F ~ 104°F)
Relative Humidity	30% ~ 90% (Non-condensing)
Operating Voltage	AC100V to 120V / 200V to 240V ±10%
Power Consumption	BSF-55: Approx. 55VA (BS only) Power for camera head: less than 180VA BST-55: Approx. 80VA (BS only) Power for camera head: less than 180VA
Maximum Cable Distance	FA-55/BSF-55: 2000m with 9.2mmφ Fiber Cable DTA-55/BST-55: 800m with Fujikura 8.8mmφ Triax Cable

Design and specifications are subject to change without notice.



U316A153-IB

Ikegami IKEGAMI ELECTRONICS (U.S.A.), INC.

HEADQUARTERS 37 BROOK AVENUE, MAYWOOD, NJ 07607
Phone:(201) 368-9171 Fax:(201) 569-1626

■ URL <http://www.ikegami.com>

Ikegami



Unicam HD



The Latest Technology
Full Digital HDTV Portable CMOS Camera System

HDK-95C



The Latest Technology
Full Digital HDTV Portable CMOS Camera System

HDK-95C



Next generation 2.5 Mega pixel high performance CMOS sensors

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

Native Multi-format

The CMOS sensors support native progressive and native interlace readout modes of operation. The camera supports 1080i/59.94 or 720p/59.94 and 1080p/29psf as standard. Additional optional formats include 3G formats, 24p formats and 50 Hz formats.

3G Upgrade Path

The camera 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 by software upgrade. (Option)

Newly developed FPGA DSP

High density 45nm rule FPGA are employed for the digital video processing for superb picture quality. And the DSP includes custom gamma curves (cine gamma).

Camera Operator Assist Functions

The HDK-95C camera head incorporates a camera operator assist function to aid the operator finding correct focus. The viewfinder detail (VF DTL) function allows the camera operator to increase the detail edges to the viewfinder video for easy focusing.

HD-SDI Trunk

When the camera is operating with FA-97 fiber adaptor and CCU-980 or BS-98, the system allows 3G (1.5G x2) transmission from the camera head to the CCU. With the camera operating in 1.5G, then a second external 1.5G video 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.

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.

2 Channels QTV

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

* BS/CCU must support 2 channels of QTV

* This function is available with FA-97A.

24p Upgrade Path

The camera can also be software upgraded to support 1080p/23.98, 1080p/23.98psf, and 1080i/59.94 with 2-3 pulldown.

HD-SDI QTV Channel

When configured with FA-97A and BS-98/CCU-980, the HDK-95C includes an HD-SDI QTV channel, in addition to the 2 channels VBS QTV.

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.

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 maneuverability for shoulder use.

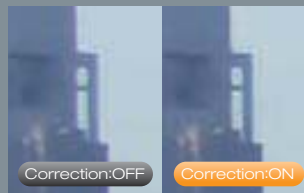
FA(Fiber Adaptor) or TA(Triax Adaptor)



Fully compatible with previous CCUs (such as CCU-890M) and current CCUs and Base Stations

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.



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 FA-97A). 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.



BS-98 Hybrid 2K/4K



CCU-980 Hybrid 2K/4K

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.



Variety of viewfinders

For the HDK-95C, 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

SE-H750 System Expander

The SE-H750 System Expander enables the use of the 9-inch viewfinder and full studio lenses with the HDK-95C, converting the portable camera into a full facility studio cameras. Installation of the camera into the SE-H750 is very easy, and conversion back to portable configuration is quick for maximum operating flexibility.



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.



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 flexibility 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.

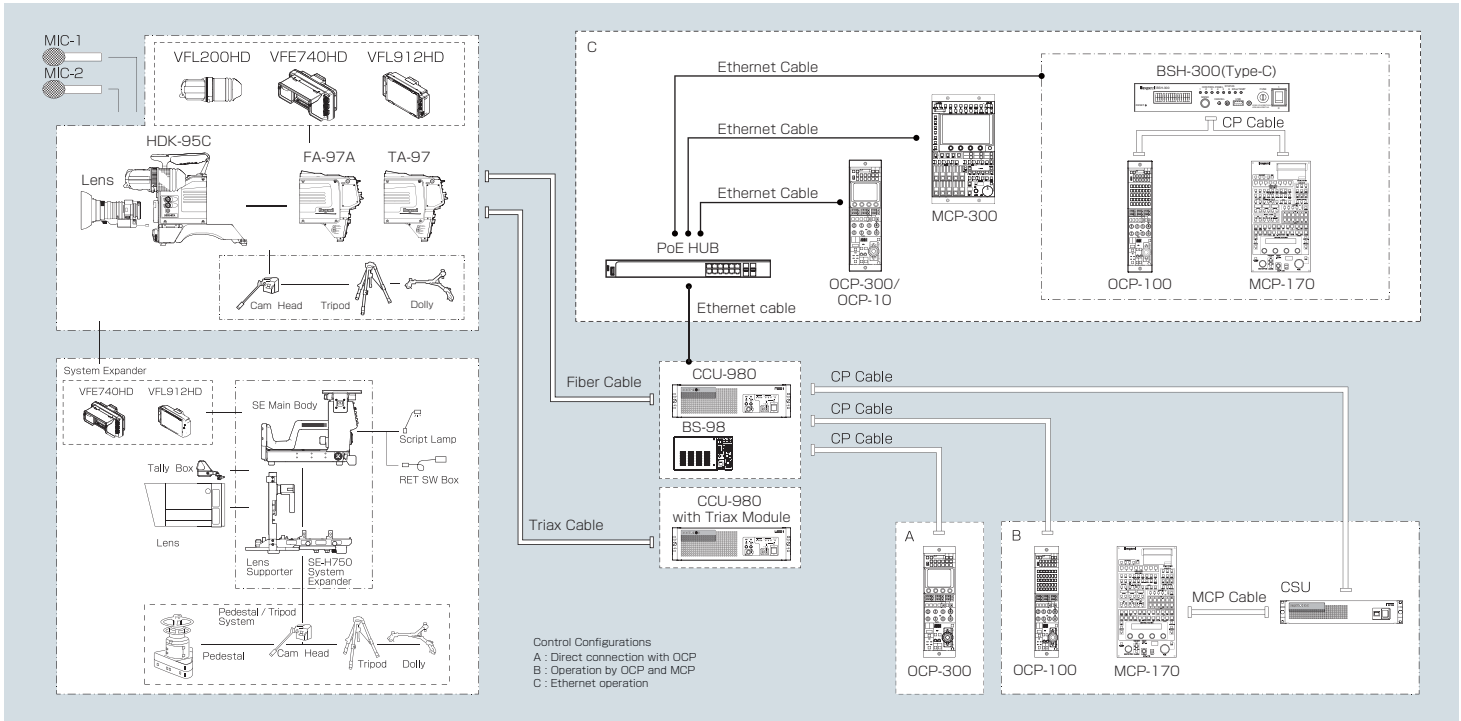


OCP-300



BSH-300

SYSTEM CONFIGURATION FOR HDK-95C



Rating

HDK-95C

Signal Format	1080i (59.94Hz or 50Hz) Y,Pb,Pr 4:2:2 Interlaced (50Hz option) 720p (59.94Hz or 50Hz) Y,Pb,Pr 4:2:2 Progressive (50Hz Option) 1080p (29.97Hz) Y,Pb,Pr 4:2:2 Progressive (Option) 1080p (23.98Hz) Y,Pb,Pr 4:2:2 Progressive (available by upgrade) 1080p/59.94 4:2:2, 1080p/50 4:2:2, 1080i/59.94 4:4:4, and 1080i/50 4:4:4 (available by upgrade)					
Image Sensor	2/3-inch 2.5 million pixel CMOS Sensors					
Optical System	2/3-inch, R,G,B 3 CMOS, F1.4					
Lens Mount	BTA-S1005B					
Filter	ND	1 CAP	2 100%	3 25%	4 6.2%	5 1.6%
		A CROSS	B C	C D	D E	E K
	CC	CROSS	3200K	4300K	6300K	8000K
Sensitivity	F11 (typical) at 2000lx (in 1080i/59.94)					
S/N Ratio	60dB or more (in 1080i/59.94)					
Limiting Resolution	1000TV lines (in 1080i/59.94)					
Modulation Depth	55% at 800TV lines (in 1080i/59.94)					
Variable Color Temperature	2,000K to 20,000K variable					
Electrical Shutter	1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000					
Detail Correction	Vertical	5 lines				
	Horizontal	Boost frequency: 13MHz to 22MHz (HDTV)				
Gamma	OFF, 0.35, 0.4, 0.45					
Gain	-6dB, -3dB, 0dB, +3dB, +6dB, +9dB, +12dB					
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. 4.6kg (10.1lbs) (Head + FA or TA, excluding VF)					
Dimensions	W138.5 x H270 x D337mm (Head + FA or TA, excluding VF) (W5.5 x H10.62 x D13.25 inch)					
Input Signals						
External Sync Signal	SYNC 0.6Vp-p ±6dB 75ohm BNC CN 1ch (BB/PS Signal) * DTA-55 does not have external sync signal input in self-contained operation.					
Audio Signal	-60dB to +4dB (Variable) / -20dB (Fixed) XLR CN 2ch (600 ohm Balanced)					
Intercom Signal	XLR Type or 110Type CN 2ch					
Video Trunk	Serial Digital 75ohm BNC 1ch (FA-97A)					

Output Signals	
Analog Video Signal	R, G, B D-Sub CN 1ch (for System Expander)
HD-SDI Signal with FA-97A	Serial Digital 75ohm BNC 1ch * 3G HD-SDI will be available with optional 3G upgrade to the camera.
HD-SDI Signal with DTA-55	Serial Digital 75ohm BNC 1ch * The output signal should be fixed with main video signal in self-contained operation, and set to RET signal in cable operation. * The audio signal is not embedded.
Q-TV Signal	FA-97A: VBS signal, BNC type 2ch DTA-55: SD-SDI signal, BNC type 1ch
MON Video Signal	VF / RET / MON (MENU Selection) Serial Digital 75ohm BNC 1ch OR VF / RET / MON / HD-QTV (MENU Selection) Serial Digital 75ohm BNC 1ch * FA-97A+CCU-970M required for HD-QTV output. * HD-QTV(Trunk) module should be installed in the CCU.
HD QTV	Serial Digital 75ohm BNC 1ch (Option) * FA-97A+CCU-970M required for HD-QTV output. * HD-QTV(Trunk) module should be installed in the CCU.
Intercom Signal	0 dBs 4ch (ENG/PROD/PGM1/PGM2) XLR Type or 110Type CN
DC Output	+12VDC 500mA (max), 4-pin type 1ch * Option for DTA-55

BS-98 / CCU-980

HDTV System (Input Signals)	
External Reference Input	GENLOCK : Tri-level sync or 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 H125 x D457mm (W8.63 x H4.92 x D18.00 inch) (excluding protrusions) CCU-980: W483 x H133 x D454mm (W19.00 x H5.25 x D17.88 inch) (excluding protrusions)
Weight	BS-98: approx. 9kg (20 lbs) CCU-980: approx. 28kg (62 lbs)

Design and specifications are subject to change without notice.



U315B163-IB

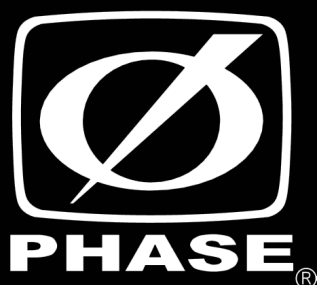
Ikegami IKEGAMI ELECTRONICS (U.S.A.), INC.

■ URL <http://www.ikegami.com>

HEADQUARTERS 37 BROOK AVENUE, MAYWOOD, NJ 07607
Phone: (201) 368-9171 Fax: (201) 569-1626

Ikegami

Unicam HD



Top of the line

16-bit Full Digital 3G HDTV Camera System

HDK-970A/970AP

16-bit Full Digital 3G HDTV Portable Camera System

HDK-97A/97AP



The highest picture quality, functionality and reliability with Ikegami's superb and latest camera technology

- Supports high-band 3G HDTV-SDI video output
- 2 times slo-motion
- Supports 3D
- Native support for 23.98p formats (HDK-970AP/HDK-97AP)
- Supports custom gamma
- 16-bit full digital

Supports high-band 3G-SDI(1080p59.94/50Hz) video output

The camera supports 3G-SDI 1080p (59.94/50Hz) wide-band video output as a standard feature for higher picture quality. The single and dual link output is available with CCU-970/BS-97 camera control unit/base station supporting 3G-SDI signal.

2 times slo-motion (1080i 119.88/100Hz)

Switchable for live and slo-motion picture with one camera. It is possible to get a slo-motion picture without changing the camera position. (Option)

*The simultaneous output for live and 2 times slo-motion picture is now under development.

3D support

The 3D picture is available easily with 3D capable lens. (Option)

Native support for 23.98P

The camera supports not only 23.98Psf, but also 23.98P in native (HDK-970AP/HDK-97AP)

Supports custom gamma

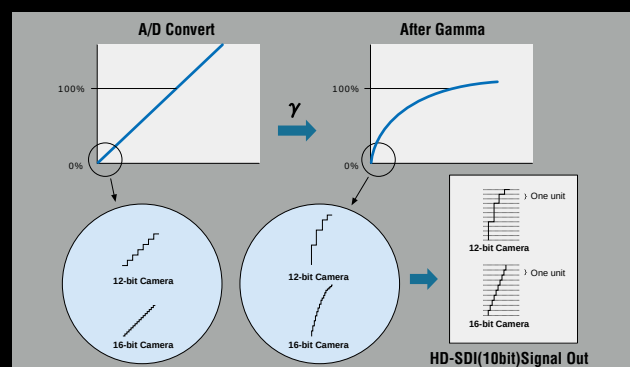
Various kinds of gamma curve can be flexibly set by users.

Newly developed 2.3 Mega pixel progressive sensors

New 2/3-inch 2.3 Mega pixel 1080 progressive CCDs are employed to support not only the usual 1080i 59.94/50Hz 4:2:2, 720p 59.94/50Hz 4:2:2, 1.5G formats, but also 3G formats such as 1080p 59.94/50Hz 4:2:2 and 1080i 59.94/50Hz 4:4:4. (50Hz formats are option) Furthermore, 1080i (119.88/100Hz), 1080p (29.97/25Hz) are available as an option. The HDK-970AP/HDK-97AP adds support for the 1080p (23.98Hz) format.

Newly developed FPGA

Using mass memory type FPGA, 45um design rule, the video signals are digitized with 16-bit A/D conversion to achieve the highest possible picture quality.



Multi-format

The camera supports various HDTV formats of 1080p (59.94/50Hz), 1080i (59.94/50Hz 4:2:2, 4:4:4), 1080i (119.88/100Hz), 1080p (29.97/25Hz) and 720p (59.94/50Hz), achieving flexible picture representation.

* 1080i (119.88/100Hz), 1080p (29.97/25Hz) are option.

Furthermore, 23.98P format is also available with the model HDK-970AP/ HDK-97AP.

16-bit full digital

Integrating Ikegami's advanced picture processing technology and digital processing technology maximizes the effect of 16-bit A/D conversion, increasing gradation in dark areas where the processing is performed for more natural reproduction of dark colors.

Two HD-SDI outputs from the camera head

Two HD-SDI output signals (1.5G) are selectable among Camera, VF, RET and MON (monitor) for external monitoring at the camera head.

* HD QTV is added to the line up of selectable HD SDI signals when the optional HD QTV (Video Trunk) module is installed in the CCU.

2 Channels QTV (Option)

Two channels of QTV output (VBS) are available as an option for prompter and external monitoring purposes.

* 2 channel QTV is option and not available operating at 720p/50Hz.

HD SDI Trunk (Option)

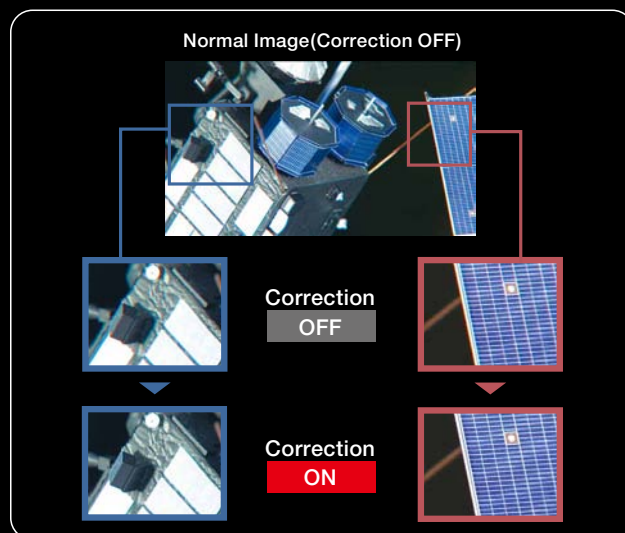
When the camera is operating in a conventional 1.5G format, a second 1.5G video from an external source can be transmitted to the CCU as a video trunk channel. For POV or 3D applications this will reduce the cables which need to be run.

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.

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.



Unicam HD

HDK-970A/AP HDK-97A/AP Accessories

3G capable fiber adaptor **FA-97**



3G capable camera control unit **CCU-970**



3G capable base station **BS-97**



High Band 3G Transmission

3G-SDI transmission is available between camera head and CCU/BS.

Simulcast

Using a down converter and up converter incorporated in the CCU-970/BS-97, both HDTV and SDTV signals are provided simultaneously from the CCU/BS. And the CCU/BS offers not only the usual 1080i 59.94/50Hz 4:2:2 1.5G signal outputs, but also 3G outputs like 1080p 59.94/50Hz 4:2:2 and 1080i 59.94/50Hz 4:4:4.

RET/QTV Video

The CCU/BS accepts 4 channels of return video input as standard. The return input signals can be either 3G-SDI or HD-SDI. QTV signals can be transmitted to the camera with not only the usual analog composite, but also HD-SDI (Option for CCU only).

* The return input signal can only be HDTV when this option is installed.

Frame Synchronizer for RET video

The return signal can be synchronized by a frame sync circuit, supporting non-sync return sources.

* The RET input signal quantity is fixed to 2 channels when the frame synchronizer is applied.

* VBS return signal can not be synchronized.

Connection to 1.5G format cameras

The CCU/BS can be used with existing Ikegami HDK-79EX series and HDK-77/79EC/95C cameras in 1.5G mode.

* New functions provided by 3G transmission of HDK-970A/HDK-97A are not available.

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.

State-of Art System Accessories, Expanding HDTV

System Expander

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

Variety of viewfinders

For the HDK-97A/AP, 2-inch 16:9 high definition VFs for portable application are available.

In addition, 9-inch LCD color viewfinders are also available as an option.



**2-inch CRT
B/W viewfinder**



**2-inch LCD
color viewfinder**



**9-inch LCD
color viewfinder**

HDK-970A/AP HDK-97A/AP

Ratings

■ Scanning System	
• HDK-970A/HDK-97A • CCU-970/BS-97	1080p (59.94Hz or 50Hz) Y,Pb,Pr 4:2:2 Progressive (above SMPTE425 Level B) 1080i (59.94Hz or 50Hz) Y,Pb,Pr 4:2:2 Interlaced 1080i (59.94Hz or 50Hz) RGB 4:4:4 Interlaced 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 (Option) 720p (59.94Hz or 50Hz) Y,Pb,Pr 4:2:2 Progressive 1080p (23.98Hz) RGB 4:4:4 Progressive (Supported by HDK-970AP/HDK-97AP) 1080p (23.98Hz) Y,Pb,Pr 4:2:2 Progressive (Supported by HDK-970AP/HDK-97AP) 480i (59.94Hz) Y,Pb,Pr 4:2:2 Interlaced 576i (50Hz) Y,Pb,Pr 4:2:2 Interlaced
■ Image Sensors	
2/3-inch 2.3 million pixel Progressive CCD Sensors	
■ Optical System	
2/3-inch, 3CCD, f1.4	
■ Lens Mount	
BTA- S1005B	
■ Viewfinder	
2" B/W CRT Viewfinder 2" Color LCD Viewfinder 9" Color LCD Viewfinder	
■ Input Signals	
• HDK-970A/AP / HDK-97A/AP	
External Sync Signal	SYNC 0.6Vp-p ±6dB 75ohm BNC CN 1ch (BB/PS Signal)
Audio Signal	-60dB ~ +4dB (Variable) / -20dB (Fixed) XLR CN 2ch (600 ohm Balanced)
Intercom Signal	XLR Type or 110 Type CN 2ch
• CCU-970/BS-97	
[HDTV System]	
External Sync Signal	PS(1Vp-p) or SYNC(0.6Vp-p±6dB) or VBS(1Vp-p) or BBS, BBS+10Field ID 75 ohm Single End BNC 2ch (bridge connection is available) (HDTV/SDTV auto detect)
Return Video Signal	75 ohm Single End 3G-SDI/HD-SDI (common use) 4ch
HD Q-TV Signal	Y, Pb, Pr 4:2:2 Serial Digital 75 ohm Single End BNC 1ch (Factory Option) * This option is not available for BS-97. * The signal is transmitted to the camera head in Y, Pb, Pr 4:2:2 8bit.
[SDTV System]	
Return Video Signal	75 ohm Single End SD-SDI/VBS (common use) 4ch * SDTV Return is not available when optional HD-QTV(Trunk) module is installed. * The total return input channel is 4ch in HDTV and SDTV.
External Genlock Signal	VBS(1Vp-p) or BBS, BBS+10Field ID 75 ohm bridged, 1ch (HDTV/SDTV auto detect)
Q-TV Signal	75 ohm Single End VBS 2ch
Intercom/Tally	
Intercom(ENG/PROD)	(4-Wire or Clearcom or RTS)
4-Wire	0dBm 600 ohm 2ch
Clearcom	-15dBs 200 ohm 2ch
RTS	0dBm 200 ohm 2ch
Tally	R/G 2ch MAKE/POWER selectable
Program Sound	0dBs 600 ohm/10K ohm switchable 2ch
■ Output Signals	
• HDK-970A/AP / HDK-97A/AP	
Video Signals	
Analog Signal	R,G,B D-Sub SE CN 1ch (for System Expander) *Available for HDK-97A only.
3G-SDI/HD-SDI Signal	Serial Digital 75 ohm BNC 1ch
Q-TV Signal	75 ohm VBS 2ch (2nd channel is option, 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.
Intercom Signal	0 dBs 4ch (ENG/PROD/PGM1/PGM2) XLR Type or 110 Type CN
• CCU-970/BS-97	
[HDTV System]	
3G-SDI/HD-SDI Signal	Serial Digital 75 ohm BNC 2ch 2 outputs per ch 3G-SDI/DUAL-LINK/HD-SDI (MENU SELECTION)
WFM Signal	Serial Digital Signal SDI 75 ohm BNC 2ch (1ch for BS-97) Ch1: 3G-SDI / DUAL-LINK(A) / HD-SDI / SD-SDI (MENU SELECTION) Ch2: DUAL-LINK(B) / HD-SDI / SD-SDI / SD Analog (MENU SELECTION)
3G-SDI/HD-SDI PM Signal	Serial Digital 75 ohm BNC 2ch (1ch for BS-97) 3G-SDI / DUAL-LINK / HD-SDI (MENU SELECTION)
[SDTV System]	
VBS/SD-SDI Signal	Serial Digital and VBS 75 ohm BNC 2ch each
WFM Signal	Serial Digital or VBS 75 ohm BNC 2ch (1ch for BS-97) Ch1: Serial Digital 75 ohm BNC 1ch *VBS Output is not available Ch2: Serial Digital 75 ohm or VBS 75 ohm BNC 1ch (MENU SELECTION)
SD-SDI/VBS PM Signal	Serial Digital or VBS 75 ohm BNC 2ch (1ch for BS-97, MENU SELECTION)
Phase Reference Signal	75 ohm SINGLE END Analog 1ch HDTV: Tri-Sync(0.6Vp-p) / SDTV: HV(2Vp-p) (MENU SELECTION)

CCU-970 / BS-97						
Audio Signal						
Mic	0dBm XLR-3 (600 ohm Balanced analog) 2ch					
Digital Audio	75 ohm Digital Format BNC 1ch (Option for BS-97) 48KHz Sampling, 24bit Pro, 2-pair ch's (AES3 Compliant)					
Intercom/Tally						
Intercom (ENG/PROD)	(4-Wire or Clearcom or RTS)					
4-Wire	0dBm 600 ohm 2ch					
Clearcom	-15dBs 200 ohm 2ch					
RTS	0dBm 200 ohm 2ch					
Tally	R/G 2ch, OPEN (OFF) / GND (ON) 50mA (max)					
■ Filter	1	2	3	4	5	
	ND	CAP	100%	25%	6.2%	1.6%
		A	B	C	D	E
	CC	CROSS	3200K	4300K	6300K	8000K
■ Electronic ColorTemperature	5600K					
■ Ambient Temperature	-20°C ~ +45°C					
■ Relative Humidity	30% ~ 90% (Non-condensing)					
■ Operating Voltage						
• HDK-970A	AC100/110/117/220/240V ±10%					
• HDK-97A	DC+11 ~ 16V					
• CCU-970/BS-97	AC100/110/117/220/240V ±10%					
■ Weight						
• HDK-970A	Approx 24kg (52.9lbs) (excluding lens)					
• HDK-97A	Approx 4.5kg (9.9lbs) (Head + FA)					
• CCU-970	Approx 28kg (61.7lbs) (in standard configuration)					
• BS-97	Approx 9kg (19.8lbs)					
■ Dimensions						
• HDK-970A	W315 x H462 x D517mm (W12.37 x H18.25 x D20.37 inches)					
• HDK-97A	W138.5 x H270 x D337mm (W5.5 x H10.62 x D13.25 inches)					
• CCU-970	W483 x H133 x D454mm (W19.00 x H5.25 x D17.87 inches)					
• BS-97	W218.6 x H124.8 x D457mm (W8.62 x H4.87 x D18.00 inches)					

Performance

■ Sensitivity		F10 (1080/59.94i)/F11(1080/50i) at 2000 lx	
■ S/N		62dB (Typical)	
■ Modulation Depth			
HDTV System		50% or more	
■ Limiting Resolution			
HDTV System		1000TV lines	
■ Video Frequency Response (CCU+BS Output)			
Y Output Signal (4:2:2)		Below 60Hz	Falling
		60Hz ~ 30MHz	within±1.0dB
		Over 30MHz	Falling
Pb, Pr Output Signal (4:2:2)		Below 30Hz	Falling
		30Hz ~ 15MHz	within±1.0dB
		Over 15MHz	Falling
R,G,B Output Signal (4:4:4)		Below 60Hz	Falling
		60Hz ~ 30MHz	within±1.0dB
		Over 30MHz	Falling
■ Audio Frequency Response (CCU+BS Output)			
Mic-1/2 Output		Below 100Hz	Falling
		100Hz ~ 20KHz	within±1.0dB
		Over 20KHz	Falling
Intercom Output		Below 100Hz	Falling
		100Hz ~ 10KHz	within±1.0dB
		Over 10KHz	Falling
■ Detail Correction			
Vertical		5 lines	
Horizontal		Boost frequency: 13MHz ~ 24MHz (HDTV)	
■ Gamma			
Gain		OFF, 0.35, 0.4, 0.45	
■ Power Consumption			
• HDK-970A		Power is fed by CCU or BS	
• HDK-97A		Camera Head: 35W (in 1080i/59.94) 2-inch VF: 6W	
• CCU-970		Approx 110VA (CCU only) 400VA or less (incl power for camera with cable loss)	
• BS-97		Approx 80VA (BS only) 150VA or less (incl power for camera with cable loss)	

Design and specifications are subject to change without notice.



U242B135-ED2 Printed in japan

Ikegami Tsushinki Co.,Ltd.

■ URL : <http://www.ikegami.co.jp/en/>

■ Head Office : 5-6-16 Ikegami, Ohta-ku, Tokyo 146-8567, Japan TEL.03-5700-1111 / FAX.03-5700-1137
 ■ Overseas Sales Division : 5-6-16 Ikegami, Ohta-ku, Tokyo 146-8567, Japan TEL.03-5700-4117 / FAX.03-5748-2200
 ■ Beijing Office : No.417 Jia Tai International Mansion, No. 41 East Fourth Ring Road, Chaoyang District, Beijing, China TEL.010-85711804 / FAX.010-85711804

Ikegami Electronics (U.S.A.), INC.

■ URL : <http://www.ikegami.com>

■ Headquarters : 37 BROOK AVENUE, MAYWOOD, NJ 07607 TEL.(201) 368-9171 / FAX.(201) 569-1626

Ikegami Electronics (Europe) GmbH ■ URL : <http://de.ikegami.co.jp>

■ Headquarters : Ikegami Strasse 1, D-41460 Neuss, Germany TEL.02131-1230 / FAX.02131-102820
 ■ U.K. Branch : Unit E1 Cologne Court, Brooklands Close, Windmill Road, Sunbury-on-Thames, Middlesex TW16 7EB, England TEL.01932-769700 / FAX.01932-769710



EXCLUSIVE REPRESENTATIVE:

Ikegami®

TVlogic

evertz

VISLINK
News & Entertainment

sencore
Where Content Meets Technology™

autoscript
a clearer picture

Telemetrics Inc.
Camera Control Systems

interra
systems

AVP

Vinten

Value Your Content
thinklogical
Trust Our Proven Ingenuity

CueScript™
A WAY WITH WORDS...

SILVUS
TECHNOLOGIES

Video **Clarity**
Tools for Video Analysis

ImmediaTV

CRYSTAL™

AJA
AJA VIDEO SYSTEMS INC.

PHABRIX®
broadcast excellence

NVERZION®

ATCI

TBC



PHASE Engenharia Ind. e Com. Ltda.

Av. Olegário Maciel 231, Lojas 101 a 105
Barra da Tijuca | Rio de Janeiro, RJ | CEP 22 621 200
Tel +55.21.2493.0125

Av. Ibirapuera 2.907, Conj. B306 & 7 - Ed. Conv. Corp. Plaza – Torre C
Indianópolis | São Paulo-SP | CEP 04029-200
Tel +55 11 3589-0125

phase@phase.com.br | www.phase.com.br