Ikegami

HD High Definition

preliminary

Ratings

■Output Format

HDK-97A / CCU970	1080p (59.94Hz or 50Hz) Y, Pb, Pr 4:2:2 Progressive (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 (Option)
	1080i (119.88 Hz 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 (Option)
	1080p (23.98Hz) Y, Pb, Pr 4:2:2 Progressive (HDK-97AP Option)
	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 AIT CCD Sensors
■Optical System	2/3-inch, RGB prism, f1.4
■Lens Mount	BTA- S1005B
■Viewfinder	2" B/W Viewfinder (Standard)
	5" B/W Viewfinder (Option)
	9" LCD Color Viewfinder (Option)

■Input Signals

HDK-97A

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

[HDTV System]	
External Genlock Signal	PS(1Vp-p) or SYNC(0.6Vp-p±6dB) 75 ohm bridged, 1ch (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)
[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.
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-97A

Video Signals	
Analog Signal	R,G,B D-Sub SE CN 1ch
3G-SDI/HD SDI Signal	Serial Digital 75 ohm BNC 1ch
Q-TV Signal	75 ohm VBS 1ch (2nd QTV is factory option)
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

[HDTV System]	
3G-SDI/HD SDI Signal	Serial Digital 75 ohm BNC 2ch 2 outputs per ch (MENU SELECTION)
WFM Signal	Serial Digital Signal SDI 75 ohm BNC 2ch
	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
[SDTV System]	
VBS/SD-SDI Signal	Serial Digital and VBS 75 ohm BNC 2ch each
WFM Signal	Ch1 : Serial Digital 75 ohm BNC 1ch *VBS Output is not available (MENU SELECTION)
	Ch2 : Serial Digital or VBS 75 ohm BNC 1ch (MENU SELECTION)
SD-SDI/VBS PM Signal	Serial Digital or VBS 75 ohm BNC 2ch (MENU SELECTION)
Phase Reference Signal	75 ohm SINGLE END ANALOG 1ch
	HDTV: Tri-Sync(0.6Vp-p) / SDTV: HV(2Vp-p) (Menu Selection)
Audio Signal	
Mic	0dBm XLR-3 (600 ohm Balanced analog) 2ch
Digital Audio	75 ohm Digital Format BNC 1ch 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 Color Temperature	5600K
■Ambient Temperature	-20℃ ~ +45℃(-4°F ~ -113°F)

■Operating Voltage

HDK-97A	+11 ~ 16V
CCU-970	AC100/110/117/220/240V ±10%

■Weight

HDK-97A	Approx 4.5kg (9.9lbs) (Head + FA)
CCU-970	Approx 28kg (61.8lbs) (in standard configuration)

■Dimensions

HDK-97A	W125 x H215 x D350mm
	(W4.92 x H8.64 x D13.78 inches)
CCU-970	W483 x H133 x D454mm
	(W19.02 x H5.24 x D17.87 inches)

Performance

■Sensitivity	F10 at 2000lx (in 1080i)	
■S/N	62dB (in 1080i) (Typical)	

■Limiting Resolution

HDTV System	1000TV lines (in 1080i)	

■Video Frequency Response (CCU 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 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	OFF, 0.35, 0.4, 0.45
■Gain	-3dB, 0dB, +3dB, +6dB, +9dB, +12dB

■Power Consumption

HDK-97A	Camera Head: TBA 2-inch VF: 6W
CCU-970	Approx 110VA (CCU only)
	400VA or less (incl power for camera with cable loss)

16-bit Full Digital 3G HDTV Portable Camera System

HDK-97A *Unicam HD*

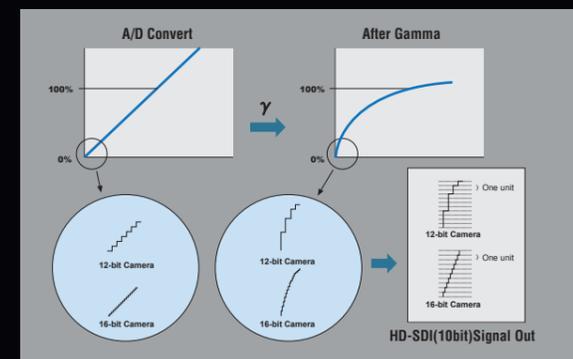Design and specifications are subject to change without notice.

CE

16-bit full digital processing and 3G transmission for highest picture quality

HDK-97A *Unicam HD*

◎**Employs high performance progressive sensors**
◎**Incorporates newly developed FPGA for video DSP**
◎**Supports 60p and 4:4:4 3G HDTV formats**
◎**Compact docking style camera body**
◎**Full compatibility with a wide range of HDK accessories**

Newly developed FPGA

Using mass memory type FPGA, 40/45nm design rule, the video signals are digitized with 16-bit A/D conversion to achieve the highest possible picture quality.

A/D Convert   After Gamma
100%   γ   100%
0%   0%

> One unit
12-bit Camera
> One unit
12-bit Camera   12-bit Camera
16-bit Camera
16-bit Camera   16-bit Camera
HD-SDI(10bit)Signal Out

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.

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 1.5G formats, but also 3G formats such as 1080p 59.94/50Hz 4:2:2 and 1080i 59.94/50Hz 4:4:4.(Option)
Furthermore, 1080i(119.88/100Hz), 1080p(29.97/25Hz), 720p (59.94/50Hz) are available as an option.
The HDK-97AP adds support for the 1080p(23.98Hz) format.

S/N ratio of 62dB (Typical)

Taking full advantage of its excellent sensors and video circuits, the HDK-97A offers superb high quality, natural looking pictures with 1000 TV lines of horizontal resolution, F10 sensitivity, and 62dB S/N ratio in HDTV (1080i59.94).

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 option is available operating at 59.94Hz only.

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.

CCU-970
Simulcast 3G CCU

High Band 3G Transmission

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

Simulcast

Using a down converter and up converter incorporated in the CCU as standard, both HDTV and SDTV signals are provided simultaneously from the CCU. And the CCU 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. (Option)

RET/QTV Video

The CCU 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).
* 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-970 can be used with existing Ikegami HDK-79EX series cameras in 1.5G mode.
* New functions provided by 3G transmission of 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.

Cutting-edge, Network based Control Panel System

The OCP-200 / MCP-200 is an advanced Network based control panel system offered as an alternate to the traditional Ikegami style control panels. The Network system allows any OCP-200 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. Conventional one by one camera control connection is also available.

CCUs   OCPs   Operating Position #1
CPH-200

OCPs   Operating Position #2
CPH-200

Central Maintenance Position
CPH-200

Expanded network configuration.
CCU-970 can connect directly to the network.

Coax Cable
CP Cable