# Ikegami

# *Unicam HD*

Multi-format CMOS Camera System
## HDK-99  HDK-73

16-bit Full Digital HDTV Camera System
## HDK-790GX  HDK-79GX

3G 16-bit Full Digital HDTV Camera System
## HDK-970A  HDK-97A

# Unicam HD

▶ Multi-format CMOS Camera System HDK-99 HDK-73
▶ 3G 16-bit Full Digital HDTV Camera System HDK-970A HDK-97A
▶ 16-bit Full Digital HDTV Camera System HDK-790GX HDK-79GX

## Ikegami is a leading supplier of high quality professional broadcast cameras.

### More than 38-bit internal Digital Video Processing Technology

Ikegami's advanced imaging and digital processing technology brings out the maximum benefit of high level quantization. It is possible to maximize performance of sensors in combination with various lenses while maintaining rich information volume with high speed processing. Smooth and more natural gradation expression, and vivid and clear coloring are presented.

### Dockalable Configuration

Follows the high operability of the Unicam series for broadcasting Dockable Camera. Docking to fiber adapters according to operation mode is possible for Flexible and economical operations.
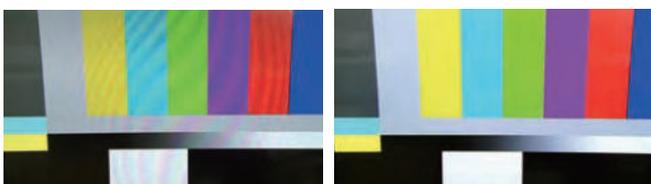
### Moire Reduction Filter (Factory Option) *1

An Anti-Moire Optical Low-Pass Filter can be fitted in the filter wheel to reduce unwanted moire video patterns when shooting a large LED screen, etc.

*1 Except HC-HD300
* If this optional filter is ordered, one of the filters must be replaced.
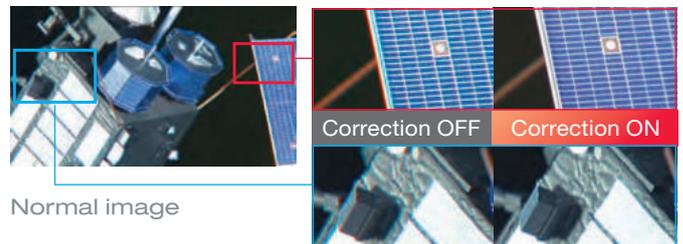
Filter OFF          Filter ON

### Lens chromatic aberration correction function

Acquires correction data from the corresponding lens and automatically corrects lens chromatic aberration based on lens zoom, focus, and iris position information.

Correction OFF    Correction ON

Normal image

### Variable ECC (Electric Color Compensation)

Variably changeable between 2,000k to 20,000k.

### SE-H750 System Expander

The SE-H750 system expander supports operation with large lenses and studio viewfinder for sports and other applications.
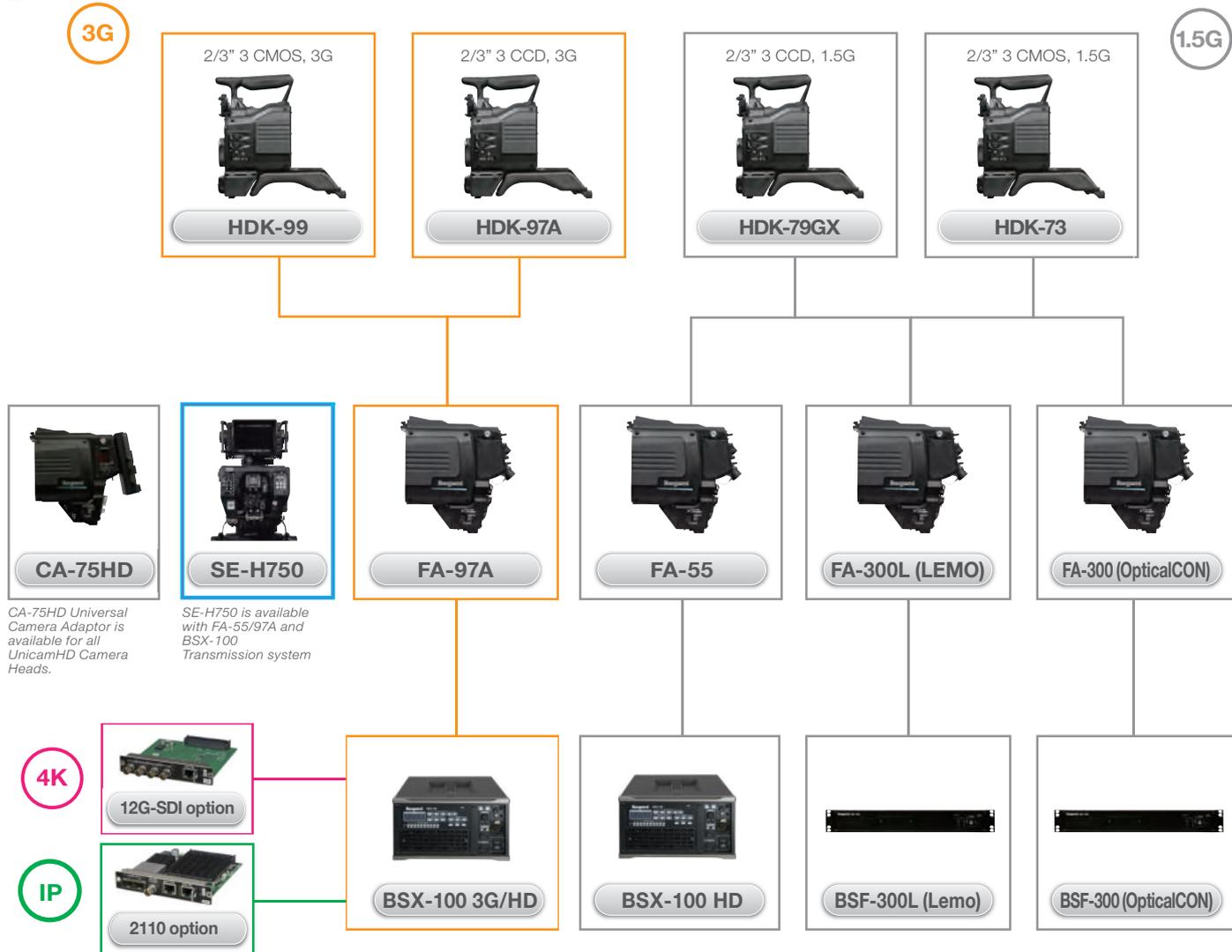
### Digital Extender *2

The built-in digital extender expands the center of picture. The expansion can be selected as 1.5X, 2X, 3X, 4X (4 steps) by the camera menu.

*2 Except HDK-73/HC-HD300

## Connection Diagram

**3G**

| 2/3" 3 CMOS, 3G | 2/3" 3 CCD, 3G | 2/3" 3 CCD, 1.5G | 2/3" 3 CMOS, 1.5G | **1.5G** |



**HDK-99** | **HDK-97A** | **HDK-79GX** | **HDK-73**

**CA-75HD** | **SE-H750** | **FA-97A** | **FA-55** | **FA-300L (LEMO)** | **FA-300 (OpticalCON)**

*CA-75HD Universal Camera Adaptor is available for all UnicamHD Camera Heads.*

*SE-H750 is available with FA-55/97A and BSX-100 Transmission system*

**4K** — **12G-SDI option**

**IP** — **2110 option**

**BSX-100 3G/HD** | **BSX-100 HD** | **BSF-300L (Lemo)** | **BSF-300 (OpticalCON)**

## Focus Assist Function

The Quick EZ 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. The size of area, area color, edge color, and display time on the viewfinder are adjustable in the camera menu.

### Normal Viewfinder Image



*Serial data communication type lens is required.

**trigger**

**Assist Area (sample setting 1)**

Assistant widely, monochrome in the area, image level 60%, edicolor to monochrome, make the edge signal enhanced.

**Assist Area (sample setting 2)**

Display with edge color (wider assist area, monochrome in area, 60% video level, set to edge color cyan)

**Assist Area (sample setting 3)**

Assist area, display with image level set to 100% (color in assist area, area size, image level 100%, edge color set to green)

## ■ 3G 3-CMOS Full Digital HDTV Camera System

# HDK-99

2.6 Mega pixel high performance CMOS sensors

**4K**   **HDR**

(with 4K output option and BSX-100)

HDK-99 with SE-H750

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### Newly Developed High Performance 2.6 Mega pixel 2/3-inch CMOS Sensors

The HDK-99 utilizes three 2/3-inch 2.6 mega pixel CMOS sensors, each capable of capturing full HD 1920 x 1080 resolution images with a dynamic range of 600% in normal mode and an extremely wide 1200% in HLG mode, and giving you an excellent sensitivity of F11 (60Hz) / F12 (50Hz), high signal-to-noise ratio and modulation depth.

### Multi-format

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

### Supports high-band 3G-SDI (1080p 59.94/50Hz) 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 BSX-100 base station supporting 3G-SDI signal.

### 4K ready

**4K**

Optional software license key provides 4K output from a 2K source.

### HDR (High Dynamic Range)

**HDR**

The camera provides an HLG (Hybrid Log Gamma) mode, conforming to ITU-R BT.2100 which is an international standard for HDR. It is now possible to expand the range represented from dark to bright, providing superb bright pictures with High Dynamic Range, and also achieves rich colors with wide color gumut. HLG and various kinds of gamma curve can be flexibly set by users.

### Next Generation High Speed Video Processor, AXII

Ikegami has developed a new processing engine, AXII, for our next generation HD, 4K, and 8K cameras. This ASIC can perform high speed processing of super high resolution video signals in various formats and frame rates. The HDK-99 utilizes this new processor, making it possible to deliver high quality, high reliability and low power consumption. The camera is also capabile of 16-axis color correction and an improved focus assist function.

### 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 picrure without changing the camera positon. (Option)

### 16-Axis Color Correction

The color correction function enables precise color adjustment for all occasions. 16 axes of the color gamut can be fine tuned in both hue and saturation. This function works in real time and is extremely beneficial for live multi-camera applications.

Original                         Corrected by color correction

### Moire Reduction Filter (Factory Option)

An Anti-Moire Optical Low-Pass Filter can be fitted in the filter wheel to reduce unwanted moire video patterns when shooting a large LED screen, etc.

\* If this optional filter is ordered, one of the filters must be replaced.

## ■ 3-CMOS Full Digital HDTV Camera System

# HDK-73

2.6 Mega pixel high performance CMOS sensors

**HDR**

### Newly Developed High Performance 2.6 Mega pixel 2/3-inch CMOS Sensors

HDK-73

The HDK-73 utilizes three 2/3-inch 2.6 mega pixel CMOS sensors, each capable of capturing full HD 1920 x 1080 resolution images with a dynamic range of 600% in normal mode and an extremely wide 1200% in HLG mode, and giving you an excellent sensitivity of F12 (60Hz) / F13 (50Hz) and high signal-to-noise ratio.

### Native Multi-format

The CMOS sensors support progressive and interlace readout, natively supporting 1080i/59.94 and 1080i/50, as well as 720p/59.94 and 720p/50 HDTV formats.

### Advanced Full Digital DSP

This camera is designed from the start base on End-to-End Digital made possible by using CMOS sensors, and includes 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. Up to 38-bits are used within the DSP.

### Lens chromatic aberration correction function

Acquires correction data from the corresponding lens and automatically corrects lens chromatic aberration based on lens zoom, focus, and iris position information.

Correction:OFF　Correction:ON

### 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.

### Quick EZ Focus Assist Function

The Quick EZ 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. The size of area, area color, edge color, and display time on the viewfinder are adjustable in the camera menu.

Focus Assist:ON

### RET and QTV Channels

The featured base stations for the HDK-73 support four channels of return video (RET), two each for SDI and VBS. The selected channel can be output at the camera as an HD-SDI signal (upconverted if input in SDTV) and used to feed a talent monitor or other purpose. In addition there is a separate prompter channel (QTV) with SDTV input at the base station and SD output at the camera.

### Advanced Digital Detail

Both horizontal and vertical Detail Correction circuits for red, green and blue signals are independently and digitally processed. You can obtain the full resolution of a high quality picture with extremely low noise, even under low-light shooting conditions.

### Dockable Camera Body

With a docking style camera body, either an FA(Fiber adapter) or CA (Camera adapter) can be mounted without any external cables depending on the use. A new lower profile and lower weight improve the manuverability for shoulder use.

### Moire Reduction Filter (Factory Option)

An Anti-Moire Optical Low-Pass Filter can be fitted in the filter wheel to reduce unwanted moire video patterns when shooting a large LED screen, etc.
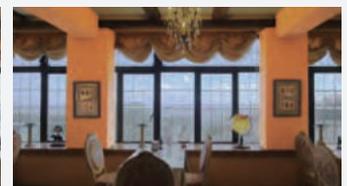* If this optional filter is ordered, one of the filters must be replaced.

### HDR (High Dynamic Range)

The camera provides an HDR function with its HLG (Hybrid Log Gamma) curve. It is now possible to shoot a scene with high dynamic range without lossing gradation in the highlights.

Standard Gamma　　　　　　HDR imHybrid Log Gamma with HDR monitorage

## ■ 3G 16-bit Full Digital HDTV Camera System

# HDK-970A   HDK-97A

**4K**   **HDR**

(with 4K option and BSX-100)

### High Performance 2.3 Mega pixel progressive sensors

Three 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. Furthermore, 1080i (119.88/100Hz), 1080p (29.97/25Hz) are available as an option. The HDK-97AP adds support for the 1080p (23.98Hz) format.

### Next Generation High Speed Video Processor, AXII

Ikegami has developed a new processing engine, AXII, for our next generation HD, 4K, and 8K cameras. This ASIC can perform high speed processing of super high resolution video signals in various formats and frame rates. The HDK-970A/97A utilizes this new processor, making it possible to deliver high quality, high reliability and low power consumption. The camera is also capabile of 16-axis color correction and an improved focus assist function.

### Supports high-band 3G-SDI (1080p 59.94/50Hz) 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 BSX-100 base station supporting 3G-SDI signal.

HDK-970A

HDK-97A

### Supports custom gamma

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

### 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), 1080p (23.98Hz) are options.

### 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 positon. (Option)

### 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 natual reproduction of dark colors.

## ■ 16-bit Full Digital HDTV Camera Sysem

# HDK-790GX   HDK-79GX

**4K**

(with 4K option and BSX-100 on 1080/29.97 PsF format)

The HDK-790GX and HDK-79GX are high quality multi-purpose high end camera models, which can be used for studio, as well as, field applications.

### 2/3-inch 2.3 Mega pixel AIT CCDs

Three 2/3-inch 2.3 Mega pixel AIT CCDs are employed to achieve 1000 TVL horizontal resolution with high signal to noise ratio of 61dB at F10 (1080/59.94i) or F11 (1080/50i) sensitivity.

### Built-in Triple Layer Filter (ND/EFF/ECC)

The triple layer filter system can be remotely controlled from OCP/MCP. The three layers are ND (100%, 25%, 6.2%, 1.6%), EFFECT (Clear, Cross, Snow, Fog) and Electronic Color Compensation (ECC: 3,200K/4,300K/5,600K/6,300K/8,000K). In addition, there is Variable Color Temp. function that enables the camera operator to continuously vary the color temperature from 2,000k to 20,000k for easy and precise adjustment.

### 2 Channels QTV

Two channels of QTV output (VBS) are available at the camera for prompter and external monitoring purposes. The AUX OUT (VBS) connector can be assigned to QTV-1, QTV-2, or Main video by menu.(FA-55)
* 2 channels QTV is standard. (FA-55)   * 2 channels QTV is option in 50Hz. (FA-97A)
* BS/CCU should support 2 channels of QTV.

HDK-790GX

HDK-79GX

### 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.

### HD SDI Trunk

When the camera is operating with FA-97A fiber adaptor and BSX-100, the system allows 1.5G x2 transmission from the camera head to the base station. The second 1.5G video can be transmitted to the CCU as a video trunk channel. For POV or 3D applications, this reduces the quantity of cables required.

### Advanced features made possible with digital technology

Advanced features such as Master Gain Control, Variable Color Temp., Custom Gamma functions are incorporated.

## ■ System Expander
# SE-H750

The SE-H750 System Expander enables the use of the large viewfinder and full studio lenses with the HDK-79GX, HDK-99/73, HDK-97A/97AP 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.    * FA-300/L & BSF-300/L do not support SE-H750 system expander.

STEP  01

Unlock and slide viewfinder

STEP  02

Mount camera

STEP  03

Lock two parts

STEP  04

Completed

## ■ Camera Adaptor
# CA-75HD

Camera adapter for Unicam HD series cameras. Attaching this adapter makes stand-alone operation possible, such as wireless transmission units or ENG-style with portable video recorders.

| Rating | |
|---|---|
| Power Requirement | DC12V 10W max. |
| Power Consumptiom | Approx. 10W  (max.) |
| Dimension | 160 x 235 x 240 (mm) |
| Weight | 2.0kg |
| Input signals | |
| Return | HD-SDI RET in BNC x 1 |
| External sync. | GenLock in BNC x 1 ( BB or 3 state SYNC) |
| Audio | AUDIO IN XLR 3pin x 2 |
| Remote control | Remote 8pin |
| Output signals | |
| HDTV | HDSDI out x 2. |
| Audio | Embeded audio CH 1/2. |

**3G Fiber Base Station and Camera Adaptor**

# FA-97A / BSX-100 Hybrid 2K/4K

**4K**  4K ready   IP ready

The BSX-100 is a new rack-mountable fiber transmission unit for UnicamHD series cameras. High quality 4K ultra HD and 3G/HD-SDI outputs are supplied simultaneously when connected with a UnicamHD progressive scan camera, such as an HDK-99 or HDK-97A (with FA-97A). It includs so called Super Resolution non-linear processing, a new technology to reconstruct high resolution signals which is not possible in conventional HD processing! The BSX-100 is a half rack size 3RU base station which supports not only Ikegami's conventional one-by-one ICCP remote control, but also Ethernet based network control system, allowing customers to choose right on their needs. The optional 12G-SDI module and the ST-2110 Media over IP card round off the all-round package.



FA-97A



BSX-100



MoIP



12G-SDI

## 4K Processing

### 4K Processing

BSX-100 base station can provide 4K signal output while being used with HDK-99 3G-HDTV camera. This option is activated by a software key and enables the output of a 4K signal via 3G-SDI Quad-link. Additionally a 12-G Output Board can be installed to gain another 4 x 12G/3G-SDI outputs. In conjunction with the MoIP board, BSX enables full SMPTE 2110 integration.

### 3G Transmission System

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

### 4 Return Video Input

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

### BSX-100 Cofiguration

| Option | BSX-100 | 12G | 4K | 3G/HD | IP |
|---|---|---|---|---|---|
| 4K license | BSX-100H | | ○ | ○ | |
| 12G-SDI board | 4K license | ○ | ○ | ○ | |
| MoIP board | BSX-100H | | | ○ | ○ |
| MoIP board | 4K license | ○ | ○ | ○ | ○ |

## IP Integration

### SMPTE-2110 MoIP

BSX-100 enables the transport of seperate video, audio and meta data as independent IP multicast streams via the optional MoIP module. It supports uncompressed IP transmission and reception by 10GbE or 25GbE networks with full redundancy, PTP timing and NMOS support.

### 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.

### 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.

### Simulcast Output

Simultaneous output of high quality 4K and 3G-SDI/HD-SDI is available when 4K output option is implemented. BSX-100 features simultanious conversion to deliver HDR/BT.2020 and SDR/REC.709 signals at the same time, providing superb bright and high dynamic images with rich colors.

## HDTV Fiber Transmission Unit
# FA-300 / BSF-300

▶ Fiber Based Remote System for affordable and flexible integration
▶ SMPTE-type: Broadcast standard SMPTE connector (FA-300L, BSF-300L)
▶ Neutrik-type: Excellent dust and dirt protection for using OpticalCON DUO connector (FA-300, BSF-300)

### FA-300 Fiber Adaptor/ BSF-300 Base Station

The lightweight and compact size (1.5 RU) BSF-300 is easily integrated into any studio, mobile truck, or portable flypack. When you use a hybrid fiber cable, the base station provides power to the fiber adaptor and the camera itself. Maximum length in powered system using hybrid fiber cable is up to 350m (1148ft) with VFL201A. (If VFL-P700, it is 250m (820ft))

### PSU-300 Power Supply Extension Unit

It supplies power to the fiber adaptor and camera head via a hybrid cable, and extends the overall cable length to make the system flexible.
 * SMPTE connector is not available for PSU-300.

Note:  SE-H750 System Expander is NOT applicable to FA-300 due to power limitation.

### Operation Control Panel
# OCP-300

OCP-300 not only supports Ikegami's conventional serial ICCP control, but also Ethernet Network control systems, allowing full flexibility for a wide range of system integartion. It includes color touch screen with rotary encoder operation, SD Memory card file management and control depth configuration for the safe and easy operation. Power over Ethernet PoE+ eliminates the need for external power supplies. Ooptional camera-select and multi-camera operation licenses turns OCP-300 into a complete Master Control Panel.

| Specifications | |
|---|---|
| Power Requirement | DC +12V (+10 to +18V) |
| Power Consumption | approx. 12W |
| Cable Length(Max.) | 50m(CP cable, ARC connection) |
| | 65m(CP cable, Serial connection) |
| | 100m(LAN cable(more than CAT5e, Ether connection) |
| Operating Temperature | 0 to 45 °C(+32 to +113°F) |
| Storage Temperature | 0 to +60°C(+32 to + 140°F) |
| Operating Humidity | 30 to 90%(non-condensing) |
| Dimensions | W102 x H354 x D82.2mm (W4.01 x H13.94 x D3.24 inch) |
| Weight | approx. 1.44kg(3.17lbs) |

## Viewfinders

2-inch color viewfinder
**VFL201A**

7-inch LCD viewfinder
**VFL701A**
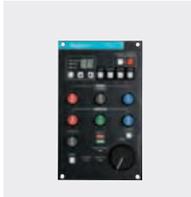
7-inch color viewfinder
**VFL-P700**
(Europe, Asia model)

7-inch color viewfinder
**VF700WA**
(US model)

## Camera Select Unit

**CSU-110** (2U)

## Operation Control Panel / Master Control Panel

**RM-51A**  **OCP-10**  **OCP-100**  **OCP-300**  **MCP-300**

## Network Hub

**BSH-300** (1.5U)

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## Virtual Control Panel
# VCP

VCP is an application software which provides camera control from a Windows PC (Windows7/Windows10).

### Remote operational control for up to 5 system cameras

Up to 5 virtual panels can be displayed on the PC.

### User Customization

Functions can be assigned to on/off switches and variable controls on the panel.

### Expanded functions by license

There are expandable camera control functions as an option in VCP.

**OCP Type**
- suitable to add more functions

**RM type**
- basic GUI

### Application Example

**Ethernet Switch**

**BS/CCU**
(Ethernet supported)

**BS/CCU**
(Ethernet non-supported)

**Box camera**
(Ethernet non-supported)

**BSH-300**
(Type-B)

**OCP-300**

**Windows PC**
(Ikegami VCP software)

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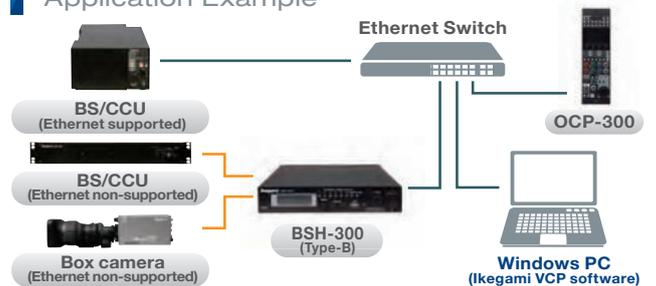
## Virtual Master Panel
# VMP

VMP is an application software which provides camera control, maintenance and centralized management for system cameras from a Windows PC (Windows7/Windows10).
* Supported devices : CCU-430/CCU-980/BS-98/OCP-300/MCP-300

### File Management

User can manage camera files on the PC.

### Camera Information Monitoring

Monitoring of Camera Status, Diagnostics, and Optical Level is available.

### Panel Assignment

Panel assignment can be easily switched using a matrix table.

### Application Example

**Ethernet Switch**

**BS**

**Windows PC**
(Ikegami VMP software)

**OCP**

**MCP**
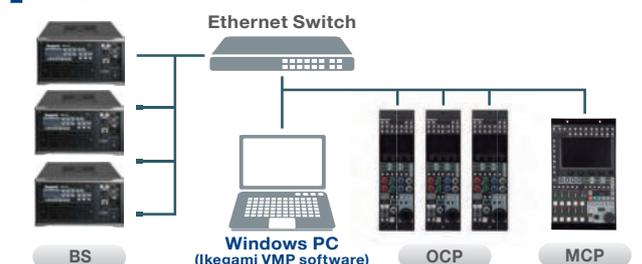
# HDK-99  HDK-970A  HDK-97A     Connection Diagram

VFL701A

HDK-970A

Headset

BSH-300(Type-C)

CP Cable

OCP-100
/OCP-10

OCP-100
/OCP-10

MCP Cable

MCP

Pedestal / Tripod
System

Pedestal          Cam  Head

Tripod     Dolly

Ethernet cable

MCP-300

Ethernet cable

OCP-300/
OCP-10 (Ethernet type/option)

PoE+ Switch

Ethernet cable

VFL-201A     VFL-701A     VFL-P700

Fiber
Cable

BSX-100

CP Cable

CP Cable

Lens

HDK-99

HDK-97A

FA-97A

B

CSU

A

MCP Cable

OCP      OCP

MCP

Tripod Mount Plate
T-430

MIC-1  MIC-2  Headset

Cam  Head     Tripod          Dolly

System Expander

VFL-701A

SE Main Body

Script Lamp

Tally  Box

RET SW Box

Lens

Lens
Supporter

SE-H750
System
Expander

Pedestal / Tripod
System

Pedestal          Cam  Head

Tripod     Dolly

A: 1x OCP to 1x CCU: Direct connetion
B: OCP & MCP operation

# HDK-73  HDK-790GX  HDK-79GX  Connection  Diagram

VFL-701A

HDK-790GX

Pedestal/Tripod System

Pedestal  Cam Head  Tripod  Dolly

VFL-201A  VFL-701A  VFL-P700

HDK-79GX

Lens

HDK-73

MIC-1  MIC-2  Headset

FA-97A

FA-55

Tripod Mount Plate T-430

Cam Head

Tripod

Dolly

FA-300/L*

BSH-300(Type-C)

CP Cable

OCP-100/OCP-10

OCP-100/OCP-10

Ethernet cable

MCP-300

MCP Cable

MCP

Ethernet cable

OCP-300/OCP-10 (Ethernet type/option)

PoE HUB

Ethernet cable

Ethernet cable

BSX-100

B

CSU

Fiber Cable

CP Cable

CP Cable

A

MCP Cable

OCP  OCP

C

Fiber Cable

Fiber Cable

BSF-300/L*

CP Cable

CP Cable

CP Cable

MCP

BSH-300(Type-B)

System Expander

VFL-701A

SE Main Body

Script Lamp

Tally Box

RET SW Box

Lens

Lens Supporter

SE-H750 System Expander

FA-300*

OpticalCON DUO Fiber Cable

PSU-300

Single Fiber Cable

BSF-300*

Pedestal/Tripod System

Pedestal  Cam Head  Tripod  Dolly

A: 1x OCP to 1x CCU: Direct connetion
B: OCP & MCP operation
C: Network connection (alll cameras can be controlled by OCP-300)
* FA-300/L & BSF-300/L do not support SE-H750 system expander.

# Unicam HD  Camera Specifications

| | | HDK-99 | HDK-970A | HDK-97A | HDK-790GX | HDK-79GX | HDK-73 |
|---|---|---|---|---|---|---|---|
| Image Sensors | | 2/3-inch 2.6 million pixel 3CMOS | 2/3-inch 2.3 million pixel Progressive CCD Sensors | | 2/3-inch 2.3 million pixel AIT CCD Sensors | | 2/3-inch 2.6 million pixel 3CMOS |
| Optical System | | RGB F1.4 | | | | | |
| Ratings | Sensitivity | F11 (1080/59.94i)/ F12 (1080/50i) at 2,000 lux | F10 (1080/59.94i)/  F11 (1080/50i) at 2,000 lux | | | | F12 (1080/59.94i)/ F13 (1080/50i) at 2,000 lux |
| | S/N | 62 dB HDTV | | | 60 dB HDTV | | |
| | Modulation Depth | 60% or more | 50% or more | | | | 60% or more |
| | Limitng Resolution | 1,000 TV ch or more | | | | | |
| Dimensions | With FA Exclude VF | W138.5 x H270 x D337 mm | W315 x H328.5 x D398 mm | W138.5 x H270 x D337 mm | W315 x H328.5 x D398 mm | W138.5 x H270 x D337 mm | |
| Weight | With FA Exclude VF | 4.9 kg (approx.) | 24 kg (approx.) | 5.1 kg (approx.) | 24 kg (approx.) | 4.6 kg (approx.) | 4.6 kg (approx.) |
| Operating Condition | Ambient Temperature | -20°C – +45°C | | | | | |
| | Relative Humidiity | 30% – 90%: Non-condensing | | | | | |
| Operating Voltage | DC input (Into FA) | +11 – +16 V DC | AC100/110/117/ 220/240 V ± 10% | +11 – +16 V DC | AC100/110/117/ 220/240 V ± 10% | +11 – +16 V DC | |
| ND Filter | 1 | CAP | | | 100% | | |
| | 2 | 100% | | | 25% | | |
| | 3 | 25% | | | 6.20% | | |
| | 4 | 6.20% | | | 1.60% | | |
| | 5 | 1.60% | | | CAP | | — |
| CC/Effect Filter | A | CROSS | | | ( I ) CLEAR | | — |
| | B | 3,200 K | | | ( II ) CROSS | | — |
| | C | 4,300 K | | | ( III ) SNOW | | — |
| | D | 6,300 K | | | ( IV ) FOGGY | | — |
| | E | 8,000 K | | | ( V ) CLEAR | | — |
| Color temperature Filter (ECC) | A | — | | | | 3,200 K | |
| | B | — | | | | 4,300 K | |
| | C | — | | | 5,600 K | 6,300 K | |
| | D | — | | | 6,300 K | 8,000 K | |
| | E | — | | | 8,000 K | — | |
| | 5600 K | ○ | | | | — | |
| | Variable | ○ (2,000 K – 20,000 K) | | | | | |
| | Smooth step ECC | — | | | ○ (0.3 sec – 2 sec) | | |
| Scanning System Format | 1080p (59.94/50 Hz) | ○ | | | — | | |
| | 1080i (119.88/100 Hz) | △ | | △ | — | | |
| | 1080i (59.94/50 Hz) RGB4:4:4 | — | ○ | | — | | |
| | 1080i (59.94/50 Hz) | ○ | | | | | |
| | 720p (59.94/50 Hz) | ○ | | | — | | ○ |
| | 1080p (29.97/25 Hz) | ○ | | | — | | |
| | 1080PsF (29.97/25 Hz) | — | ○ | | | | — |
| | 1080p (23.98 Hz) | ○ | | | — | | |
| | 1080PsF (23.98 Hz) | — | | | | | |
| | 1080pd (23.98 Hz) | — | | | | | |
| Gain | -6, +18 dB | ○ | △ | | | ○ | |
| | -3, +3, +6, +9, +12 dB | ○ | | | | | |
| Smooth Gain Up | | ○ | — | | ○ | | |
| Lens Aberration Correction | | ○ | | | | | |
| Focus Assist | | ○ | | | | | |
| Auto Setup | Full, Level, Quick | ○ | | | | — | |
| | AWB, ABB | ○ | | | | | |
| Custom Gamma | | ○ (Hybrid Log-Gamma) | ○ | | easy mode only | | ○ (Hybrid Log-Gamma) |
| CCD accumulation | | — | | | ○ | | — |
| Digital Extender | | ○ (1.5X, 2X, 3X, 4X) | | | | | — |
| SD card slot | | ○ | | | | | |

○ : standard
△ : option

# Unicam HD  BS Specifications

| | | BSX-100 | BSF-300/L |
|---|---|---|---|
| **Input Signals** | | | |
| External Sync Signal | | REF: Tri-level SYNC/BB x 2 (Loop thru)<br>(HDTV/SDTV auto detect) | BNC type, 1 ch (HDTV/SDTV auto detect)<br>HD: PS(1 Vp-p) or Tri-Sync Signal<br>(0.6 Vp-p±6 dB) 75 ohm bridged<br>SD: VBS (1 Vp-p) or BBS 75 ohm bridged |
| Return<br>Video Signal | 3G/HDTV | 3G-SDI/HD-SDI 4 ch    (Auto detect) Active Loop through | — |
| | SDTV | — | VBS 75 ohm Single End, BNC type 2 ch<br>(SDI/VBS selectable) |
| | HDTV/SDTV | — | 75 ohm Single End, BNC type 2 ch<br>(SDI/VBS selectable) |
| Q-TV Signal | HDTV | HD-SDI 1 ch<br>(Asynchronous Embedded Audio 4 ch) | — |
| | SDTV | — | VBS  1 Vp-p 75 ohm Single End, BNC type 1 ch |
| **Output Signals** | | | |
| Main<br>Video Signal | 3G/HDTV | 3G-SDI/HD-SDI 4 ch | — |
| | SDTV | — | VBS  1.0 Vp-p 75 ohm BNC type 2 ch |
| | HDTV/SDTV | — | HD-SDI (SMPTE 292M)/SD-SDI (SMPTE 259M),<br>75 ohm BNC type 4 ch<br>(HD-SDI/SD-SDI selectable) |
| | 4K | 4K optional license 1920 x 1080 Progressive Square Division 3G/HD-SDI 75 ohm (BNC) x 4<br>12G optional output module 12G/3G/HD-SDI 75 ohm (BNC) x 4 | — |
| WFM Signal | HDTV/SDTV | — | Serial Digital 75 ohm BNC type 1 ch<br>(HD-SDI/SD-SDI selectable) |
| PM Signal | 3G/HDTV | 3G-SDI/HD-SDI BNC 1 ch 1 output | — |
| | HDTV/SDTV | — | Serial Digital 75 ohm BNC type 1 ch<br>(HD-SDI/SD-SDI selectable) |
| | SDTV | — | VBS  1.0 Vp-p 75 ohm BNC type 1 ch |
| Trunk Signal | HDTV | 3G-SDI/HD-SDI BNC 1 ch 1 output | — |
| Sync Signal | | 75 ohm Single end analog 1 ch 1 output<br>HDTV: Tri-Sync (0.6 Vp-p) /SDTV: HV (2 Vp-p) (Select by menu) | |
| Mic | | 0 dBs/+4dBs Low output 2 ch 2 outputs | 0 dBs/+4 dBs Low 2 ch |
| Digital Audio | | AES/EBU Digital BNC  1 ch 1 output 48 KHz Sampling,<br>24 bit Pro, 2 ch pair (AES3 compliant) | — |
| **Communication/Control Signal** | | | |
| Intercom | ENG/PROD (2 ch) | 4-Wire or Clearcom or RTS | |
| | 4-wire | 0 dBm 600 ohm 2 ch | |
| | Clearcom | -15 dBs 200 ohm 2 ch | |
| | RTS | 0 dBm 200 ohm 2 ch | |
| Program Sound Input | | 0 dBs 600 ohm/10k ohm switchable<br>3 ch | 0 dBs standard  600 ohm/10k ohm 2 ch<br>-20 dBs/0 dB/+4 dBs selectable |
| Tally | Input | R/G/Y 3 ch Contact (MAKE) /<br>Power (POWER) selectable | Contact R/G |
| | Output | R/G/Y 3 ch OPEN (OFF) /GND (ON) 50 mA (max) | R/G 2 ch OPEN (OFF) /<br>GND (ON) 50 mA (max) |
| Remote control | Arcnet BNC | — | — |
| | Ethernet RJ-45 | RJ-45 1 ch | — |
| | OCP CP Connector | ICCP 1 ch | |
| | MCP CP Connector | — | ICCP 1 ch |
| Data Trunk (Option for camera side) | | Data Trunk 1/Data Trunk 2  RS-422 2 ch | RS-422 1 ch |
| **General** | | | |
| Operating Voltage | | AC100 to 240V ±10% | |
| Power Consumption | | Approx. 90VA (BS only)<br>160 VA or less (incl power for camera with cable loss) | Approx. 55 VA (BSF-300 only) |
| Ambient Temperature | | Operating temperature 0°C – +45°C<br>Storage temperature -30°C – +60°C | Operating temperature 0°C – +40°C<br>Storage temperature -30°C – +60°C |
| Relative Humidity | | 30% – 90% (Non-condensing) | |
| Dimensions | | W216 x H123 . 6 x D407.2 (excluding prtrusions) | W483 x H66.4 x D405 mm |
| Weight | | 8 kg (Approx.) | 7 kg (Approx.) |

## Unicam HD  FA Specifications

|  | HDK-970A | HDK-790GX | FA-97A | FA-55 | FA-300/L |
|---|---|---|---|---|---|
| Input Signals | | | | | |
| External Sync Signal | Sync. 0.6 Vp-p ± 6 dB 75 ohm  BNC 1 ch | | | | |
| Audio Signal | -60 dB +4 dB (Variable) /-20 dB (Fixed)  XLR 2 ch (600 ohm balanced) | | | | |
| Intercam Signal | XLR Type or 110 Type 2 ch | | | | |
| Trunk Signal HDTV | HD-SDI BNC 1 ch (1.5G format only) | | HD-SDI BNC 1 ch (Option) (1.5G format only) | — | |
| Output Signals | | | | | |
| 3G-SDI/HD-SDI Signal | 3G-SDI/HD-SDI  BNC 1 ch | HD-SDI  BNC 1 ch | 3G-SDI/HD-SDI  BNC 1 ch | HD-SDI  BNC 1 ch | |
| Analog Video Signal | MONI-OUT/SYNC-OUT (Select by menu + Switch) BNC  1 ch, MONI: Y singal, SYNC: 0.6 Vp-p (Tri-level sync signal) | | G, B, R 0-Sub SE 1 ch (For System Expander) | G, B, R D-Sub SE 1 ch (For System Expander) HD Y or VBS output (MON  Out Terminal) VBS Output (AUX  OUT Terminal) (Select by menu) | HD Y or VBS output VBS Output (AUX  OUT Terminal) |
| Q-TV Signal HDTV | HD-SDI BNC 1 ch | | | — | |
| Q-TV Signal SDTV | — | | — | VBS 1 ch (AUX OUT: Select by menu) | |
| Monitor Output | HD-SDI VF/RET/ MON/HD-QTV (Select by menu) BNC 1 ch | HD-SDI VF/RET/ MON/HD-QTV (Select by menu) BNC 1 ch (HD-QTV: option) | HD-SDI VF/RET/ MON/HD-QTV (Select by menu) BNC 1 ch | MAIN VF/RET/HD-SDI (Select by menu) BNC 1 ch, RET video HD SDI 4:1:1 | MAIN VF/RET/HD-SDI (Select by menu) BNC 1 ch, RET video HD SDI |
| DC Output | — | | | +12 VDC 500 mA (max), 4-pin type 1 ch | |

## Unicam HD  BS Specifications

|  |  | BSX-100 | BSF-300/L |
|---|---|---|---|
| Scanning System | 1080p (59.94/50 Hz) | O | — |
| | 1080i (119.88/100 Hz) | Optional | — |
| | 1080i (59.94/50 Hz) RGB 4:4:4 | O | — |
| | 1080i (59.94/50 Hz) | O | |
| | 720p (59.94/50 Hz) | O | |
| | 1080p (29.97/25 Hz) | Optional | — |
| | 1080PsF (29.97/25 Hz) | Optional | — |
| | 1080p (23.98 Hz) | Optional | — |
| | 1080PsF (23.98 Hz) | Optional | — |
| | 1080pd (23.98 Hz) | Optional | — |
| | 2160p (59.94/50 Hz) | Optional | — |
| | 2160p (29.97/25 Hz) | Optional | — |
| Max. Cable Distance | | 2,000 m | 350 m (with 2" viewfinder) 250 m (with 7" viewfinder) |

# Unicam HD

CE

U402C195-IB1.25