

Ikegami

HD
High Definition

Top-of-the-Line,
Full Digital HDTV Companion Camera System

HDK-790EXIII

HDK-79EXIII



Ikegami is the world-leading company of highest quality broadcast and professional video production equipment. The HDK-790EXIII / HDK-79EXIII are superb HDTV cameras with high reliability. They have full compatibility and identical colorimetry for a perfect match between Studio and Portable cameras.

Top-of-the-Line, Full Digital HDTV Companion Camera System

HDK-790EXIII / HDK-79EXIII

Achieving 14-bit full digital process, 60dB at F10 performance for industry leading picture quality, exceptional functionality and high reliability.



HDK-790EXIII

HDK-79EXIII

- Incorporating a full digital process ASIC, 0.18um design rule.
- Newly developed 2/3" 2.3Mega pixel AIT (Advanced Interline Transfer) HD CCD sensors
- Multi-format, Multiple application use
- Enhanced operational flexibility with versatile peripherals.

New DSP with 14-bit Full Digital

Incorporating advanced full digital process ASIC, 0.18um design rule.

Using sophisticated full digital process ICs, precision designed at 0.18um rule, the video signals are digitized with 14-bit A/D conversion and up to 38-bit internal digital processing circuits.

The latest 14-bit A/D conversion

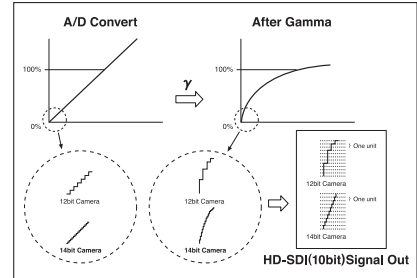
14-bit A/D converters maximize the color gradation for the darker parts of the picture, providing a high-level of digital signal process capability. It preserves fine gradation and details when reproducing the dark areas of the picture.

DTL Correction

A detail correction system, including digitally processed horizontal, vertical and diagonal correction signal for red, green and blue video, is incorporated into the camera head, and obtains noise-free full resolution HDTV picture quality even if the camera is used in stand-alone configuration.

Independent DTL

With Independent DTL systems in the CCU, the type and amount of compensation can be optimized for the different requirements of HDTV and SDTV.



Multi-standard/Simulcast Broadcasting

2/3-inch 2,300,000-pixel AIT CCDs with newly developed circuit

2/3-inch 2,300,000-pixel 1080i AIT CCD image sensors are employed to achieve superb picture quality with a horizontal resolution of 1,000 lines and a S/N ratio of 60dB. In addition, newly developed CCD drive and sampling circuit achieves higher video reliability.

DTV Multi-format

1080/60i, 720/60p, 1080/24p, 480/60i and other frame conversion available with optional Engine board fitted.

Simulcast (HDTV and SDTV)

Using a down converter incorporated in the CCU as standard, the HDK-790EXIII/79EXIII can be operated as a high-end NTSC studio camera. A high sampling frequency of 27MHz achieves maximum resolution of 900 TV lines in the NTSC format. Both HDTV video and SDTV (NTSC) are provided simultaneously from the CCU and in both digital and analog form. Monitoring video signals (WFM and PM) are likewise provided in both HDTV and SDTV to adapt to different system installations and to permit continued use of conventional monitoring.

Acceptable Field frequency both 59.94Hz and 50Hz

*Note: Supported by the specified viewfinder



CCU-790A Front Panel



CCU-790A Rear Panel

Sophisticated features made possible with digital technologies

FINE DTL function

Includes a color correction function that enables two-axis color correction to be adjusted for each of the primary colors (Red, Green, Blue) plus digital correction to make color correction of two user-selected colors of the subject. Color correction before being realized provides more true color reproduction.

Six-Vector Color Corrector + Two-Axis Custom Color

Includes a visual correction function for subject colors and background color, and is adjusted for each of the six primary colors (Red, Green, Blue) plus digital correction to make color correction of two user-selected colors of the subject. Color correction before being realized provides more true color reproduction.

Super KNEE

Enhanced Digital DTL

Of the highlighted parts and provides natural color reproduction under high light. Richer reproduction of details in skin tone and in dark backgrounds is realized.

Super KNEE

KNEE DTL function provides better expression in highlight scene, improving on the color balance. The color balance is automatically adjusted without clear color balance dependence on the brightness. Natural color reproduction under high light is realized.

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Menu Preset function

Master FLARE

All menu items including Level and Control settings can be preset and easily recalled from the control panel. The Master FLARE function enables some adjustments to be set and recalled from the control panel. The Master FLARE function enables some adjustments to be set and recalled from the control panel. The Master FLARE function enables some adjustments to be set and recalled from the control panel.

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Clear VF DTL function

Video band edging gives the impression that fine parts of subjects of high frequency image are made clearer. This function makes resolution in the edging of the image exclusively in the viewfinder, to make the precise point of focus easier to find, and to make it easier for the cameraperson to focus.

HD-SDI Output from the camera Head

HD SDI output is provided from the camera head, and by using VTR connector (option), direct connection is possible with HD digital equipment, such as an HD VTR.

RET Video and teleprompter Video

The CCU-790A accepts two channels of return video input as standard. It is available with up to 4ch as a factory option. Input signals can be selected from HD-SDI, D1 component and VBS signals. The CCU includes an up converter permitting a SDTV return video signal (D1) to be viewed on the HD viewfinder. The CCU transmits the HD return video signal(each Y, PB, PR) and two NTSC Q-TV video signals (Q-TV1, Q-TV2) to the camera for teleprompter and external monitoring purposes.



HDK-790EX III Rear



HDK-79EX III Rear

Data Trunk (Option)

The CCU-790A accepts the RS-422 data line as option.

Well balanced and Low Center-of-Gravity

Both the studio and portable cameras are compact with low center-of-gravity. Especially for the portable camera there is excellent balance when operated on the shoulder. Regarding the 7-inch viewfinder for HDK-790EX III, the position is lower and closer to the optical axis of the camera head.

Easy access to Double Return Switch

A Return select switch is located on the hand grip and left side on front of the portable camera to control the selection when the camera is held off the shoulder, such as on the hip for low angle shots.



Front left



Handle grip

Camera Number Display Function (Option)

Camera Number can be displayed in white LED on the right side of the camera head. In case of Arc net based assignable control operation, the camera number can be automatically displayed in accordance with CCU number, even when exchanging cameras within the system.



Engineer Setup File and Factory Setup File

All Menu items including Level and Control settings can be preset and easily recalled (Engineer Setup File). All settings can be easily reset to the factory default settings (Factory Setup File). Either Engineer Setup File or Factory Setup File can be easily recalled.

High Performance Viewfinders

For the HDK-79EX III, a 2-inch 16:9 high definition VF for portable application is available. Employing a magnifying eyepiece in the 2-inch VF, visibility is further improved. In addition, a 9-inch LCD color viewfinder is available as an option.



On-Line Diagnostics

An On-line Diagnostic System monitors a range of circuits including video, control, fiber optic transmission, pulse and power supply.

Serial Lens Support

Zoom/Focus control available from the MCP, control can be assigned to a switch on the camera handle. (Supported by MCP-150/MCP-200) Moreover it is possible to check the size and the position of the focus area on the VF when PF lens is attached.

Rotating Camera Cable Connection

The SMPTE standard fiber camera cable connector is provided with a pivoting mount on both the portable and studio camera heads. This permits a natural bend to the cable, even for example, when the portable camera is placed on the ground.



HD-SDI Embedded Audio available in stand-alone operation

Lower noise when Gain-up

Employing a low-noise feed-back type amplifier circuit in Master gain up, as well as, providing noise cancel circuits in all video related boards, eliminates noticeable noise and obtains a better signal-to-noise with high gain up.

State of the Art, Expanding HDTV System Accessories

CB-79HD/TFA-79HD HDTV Triax System

Ikegami's advanced HDTV triax system is available for the HDK-790EXIII and HDK-79EXIII. The TFA-79HD, housed in a rugged weather resistant case, is used together with the CB-79HD at the CCU side for full resolution transmission of HD signals over conventional triax cable.

Transmission Distance

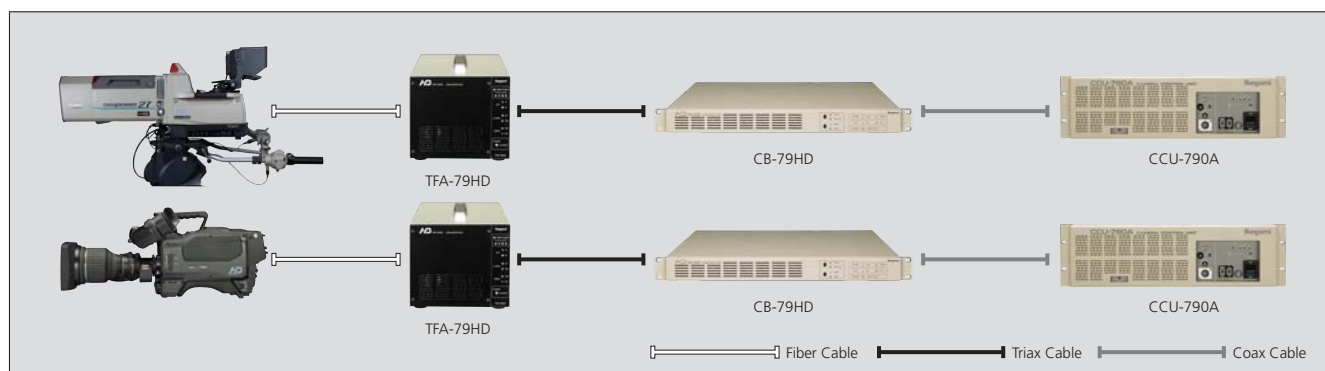
Up to 850m (2,800ft.)	by 8.8mm diameter triax / Fujikura
Up to 1,550m (5,100ft.)	by 14.5mm diameter triax / Fujikura
Up to 500m (1,600ft.)	by 9.2mm diameter triax / Belden type 9267
Up to 1,000m (3,300ft.)	by 13.2mm diameter triax / Belden type 9232



TFA-79HD (Camera side)



CB-79HD (CCU side)



SE-H700 System Expander

The SE-H700 System Expander enables the use of the 9-inch LCD color viewfinder and full studio lenses with the HDK-79EXIII, converting the portable camera into a full facility studio camera.

- Cable-less structure provides easy docking and undocking.
- No optical axis error due to the bayonet ring fixing method.
- Portable lens can be attached.



Space-Saving Design

Suitable for small-sized HD vans and rental / flight-pack systems.

A half-rack base station BS-79 is available, permitting full SMPTE fiber cable extension with a compact base station. It supports HDTV/SDTV simulcast operation with an up converter / down converter built into its half-rack size. It is suitable for small-sized HD vans and rental / flight-pack systems. The HDK-790EXIII and HDK-79EXIII with the System expander can be connected with the BS-79 (factory option / AC operation only.)

BS-79 Half-Rack Base Station



BS-79 Front



BS-79 Rear

Cutting-Edge, New Control Panel System

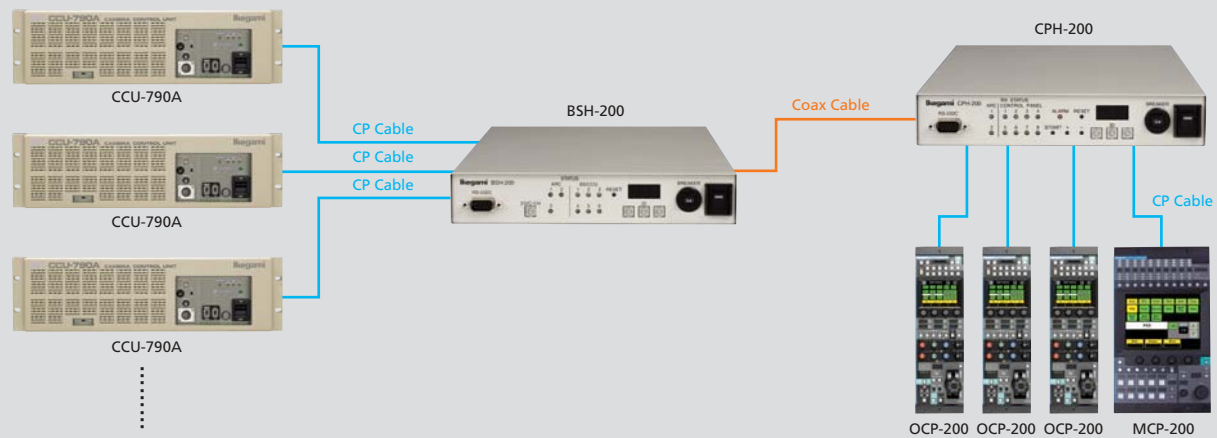
The OCP-200 / MCP-200 is a new Network based control panel system offered as an alternate to the traditional Ikegami style control panels. The Arc-net system allows any OCP-200 to control any camera with assignment set at the OCP itself. System wiring is simplified with control of up to 96 cameras via a single coax cable between CCU locations and video control locations. The OCP-200 and MCP-200 include touch screen LCDs. 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.



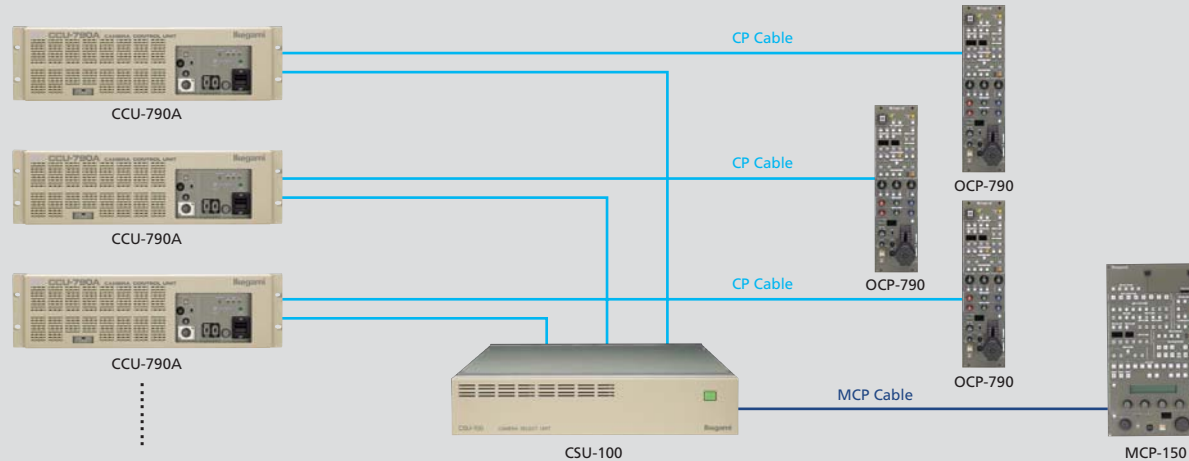
OCP-200

MCP-200

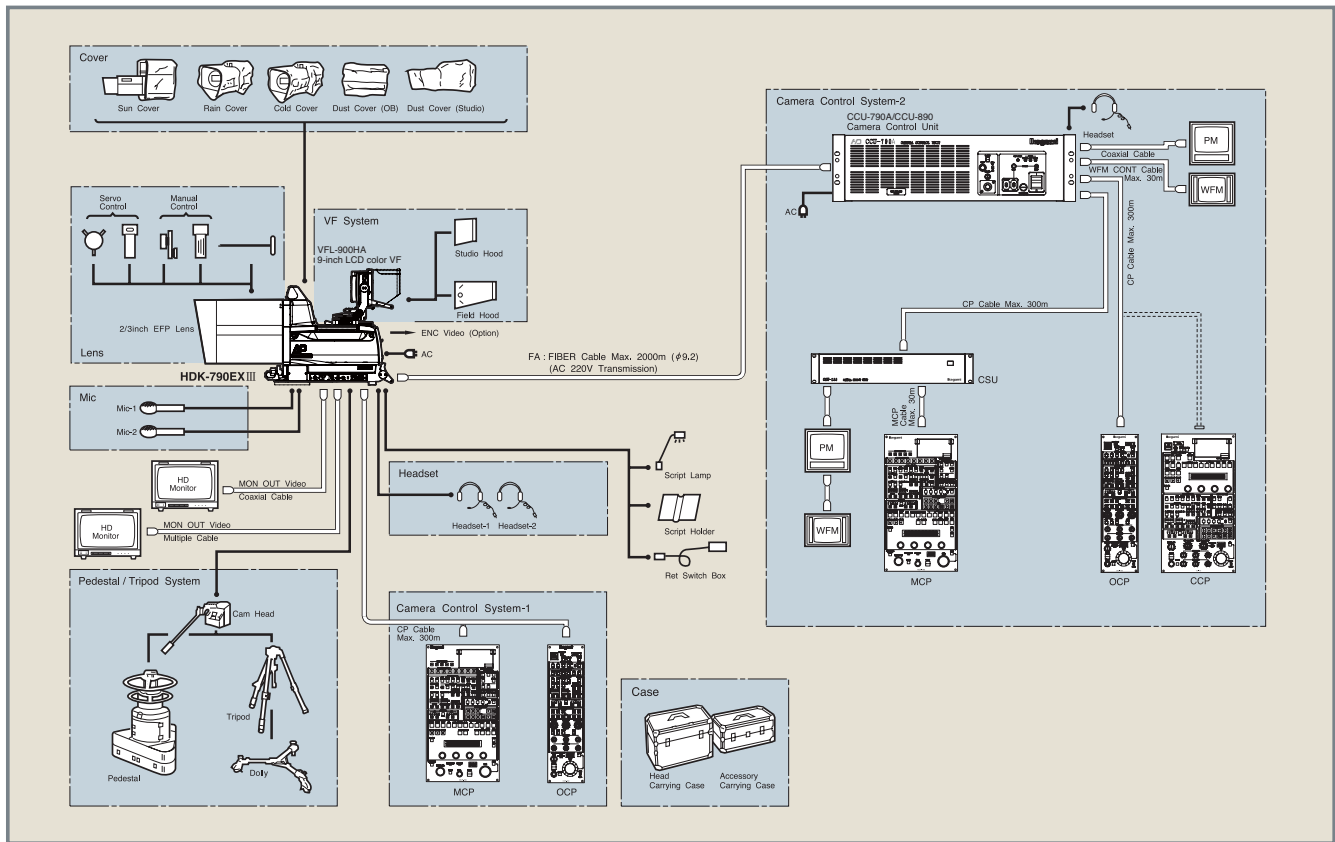
Arc net based camera control system



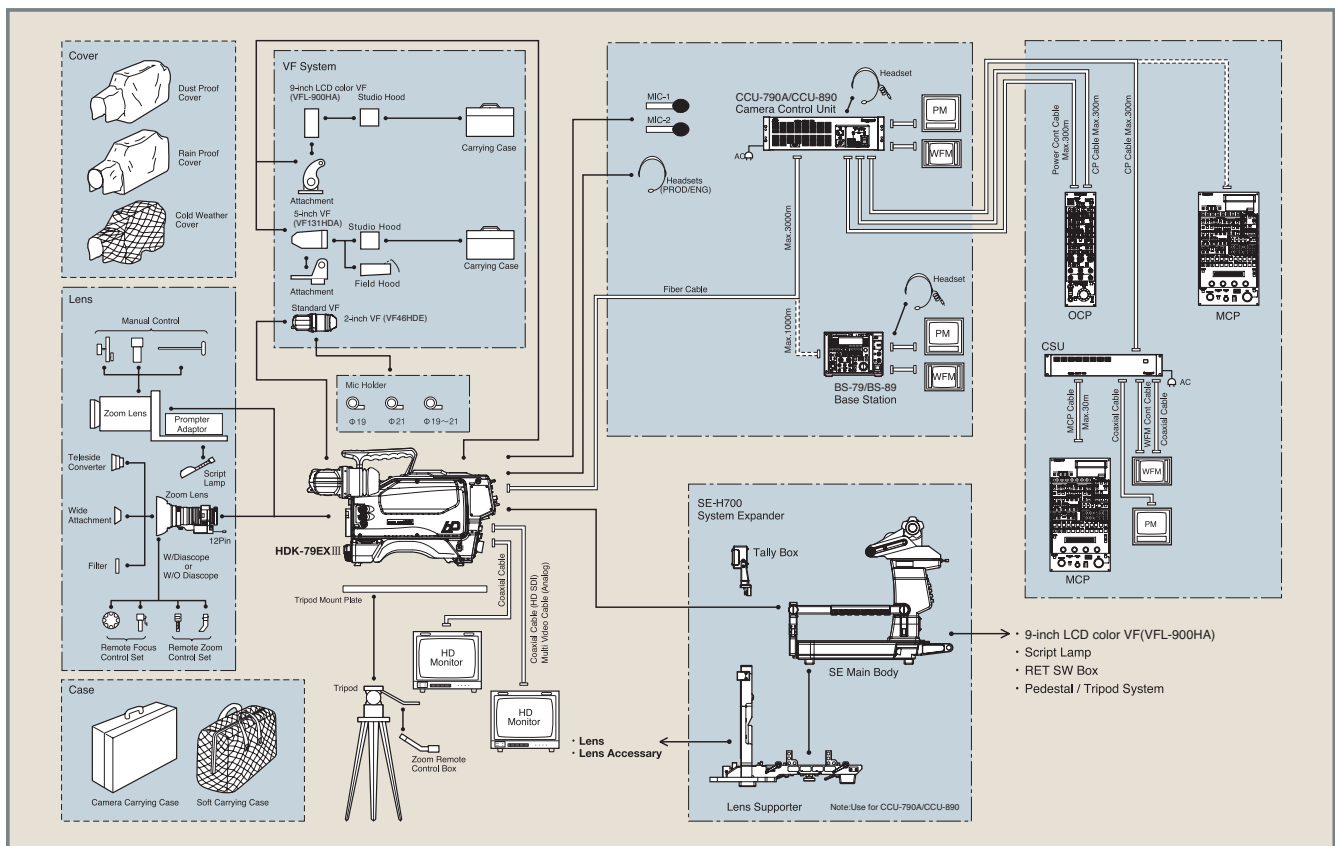
Conventional one by one camera control connection



System Diagram HDK-790EXIII



System Diagram HDK-79EXIII



HDK-790EXIII / HDK-79EXIII

Ratings

■ Scanning System

- HDK-790EXIII / 79EXIII 1125 (59.94Hz or 50Hz, selectable)
- CCU-790A 1080 lines 59.94Hz 2:1 interlaced
480i lines 59.94Hz 2:1 interlaced
1080 lines 59.94Hz 2:1 interlaced 2-3 pull-down (option)
1080 lines 59.94Hz 2:1 interlaced variable frame (option)
1080 lines 29.97Hz 1:1 non-interlaced (option)
1080 lines 29.97Hz SF non-interlaced (option)
1080 lines 23.98Hz 1:1 non-interlaced (option)
1080 lines 23.98Hz SF non-interlaced (option)
720 lines 59.94Hz 1:1 non-interlaced (option)
720 lines 59.94Hz 1:1 non-interlaced variable frame (option)

■ CCD image sensor

..... 2/3-inch 2,300,000-pixel AIT CCD

■ Optical system

..... 2/3-inch 3CCD, f1.4

■ Lens mount

..... BTA S-1005B (standard)

■ Viewfinder

● HDK-790EXIII 9-inch LCD color viewfinder (standard)

● HDK-79EXIII 2-inch B/W viewfinder (standard) or
5-inch B/W viewfinder (option) or
9-inch LCD color viewfinder (option)

■ Input signals

● HDK-790EXIII / 79EXIII

External SYNC signal..... SYNC 0.6Vp-p ±6dB
Audio signal*..... -60, -50, -40, -30, -20, -10, 0, +4dB 600Ω(2ch, balanced)
(after selecting, variable 5dB available)
(*option for HDK-790EXIII)

Intercom signal..... 2ch (ENG/PROD) (Standard : XLR type)

● CCU-790A

[HDTV system (SMPTTE274M and SMPTTE292M)]
Phase reference signal..... PS/S 0.6Vp-p ±6dB 75Ω bridged, 1ch
Return video signal..... PS 1.0Vp-p 75Ω 2ch (standard)
4ch (factory option)
(Input signal is SDI signal)

[NTSC system]

Return video signal..... VBS 1.0Vp-p 75Ω 2ch (standard)
4ch (factory option)
(Input signal is Analog or SDI signal)

External genlock signal..... VBS/PS/S 1.0Vp-p 75Ω bridged, 1ch

Q-TV signal..... VBS or PS 1.0Vp-p 75Ω Single End, 2ch

Intercom/Tally

Intercom (ENG/PROD)..... (4-wire or Clearcom or RTS)

4-wire..... 0dBm 600Ω 2ch

Clearcom..... -15dBs 200Ω 2ch

RTS..... 0dBm 200Ω 2ch

Tally..... contact/voltage R, G 2ch

Program sound..... 0dBs 600Ω 2ch

■ Output signals

● HDK-790EXIII / 79EXIII

Video signals
Analog signal..... R, G, B or Y, PB, PR each 1ch,
75Ω(multi-pin connector :HDK-79EXIII stander, HDK-790EXIII option)

HD SDI signal..... Y, PB, PR 4:2:2 serial digital 2ch
(BNC connector, Camera cable connector) (SMPTTE292M)

Q-TV signal..... Analog signal, 2ch 75Ω(BNC connector)

Return out..... HD SDI signal

VTR signal..... BTA S-1005B (Factory option)

Monitor signal..... Y or VF signal select 1ch, 75Ω(BNC connector)

Intercom signal..... 0dBs 2ch (ENG/PROD) (Standard : XLR type)

● CCU-790A

[HDTV system]

Analog video signal (SMPTTE274M)
Y, PB, PR 75Ω each 1ch
(R, G, B signal output is selectable by internal switch)

HD SDI signal (SMPTTE294M)..... 75Ω 3ch

WFM signal..... R, G, B, Y select 1.0Vp-p 75Ω or HD-SDI 75Ω 2ch (factory option)

PM signal..... R, G, B, Y select 1.0Vp-p 75Ω 2ch

PM-SDI..... PM-SDI 0.8Vp-p 75Ω 2ch (factory option)

[NTSC system]

Composite video signal..... VBS 1.0Vp-p 75Ω 3ch

Component video signal..... R, G, B 0.7Vp-p 75Ω each 1ch

(Y, PB, PR signal output is selectable by CCU Menu)

Component serial signal (D1)..... (SMPTTE259M) 270Mbit/s
0.8Vp-p 75Ω 4ch

WFM signal..... R, G, B, Y, ENC select 1.0Vp-p 75Ω or SDI 75Ω 2ch

PM signal..... R, G, B, Y, ENC select 1.0Vp-p 75Ω or SDI 75Ω 2ch

Phase reference signal..... sync 0.6Vp-p 75Ω 1ch
(HD or SD automatically selectable)

Audio Signal

Mic..... 0dBm 600Ω 2ch
Digital audio..... AES 3ID 1Vp-p 75Ω 1ch
(In conformity with AES/EBU)

Intercom/Tally

Intercom (ENG/PROD)..... (4-wire or Clearcom or RTS)

4-wire..... 0dBm 600Ω 2ch

Clearcom..... -15dBs 200Ω 2ch

RTS..... 0dBm 200Ω 2ch

■ Filter

	1	2	3	4	5
ND	CAP	CROSS	3200K	4300K	6300K
CC	CROSS	3200K	4300K	6300K	8000K

■ Electric color temperature

..... 5600K

■ Ambient temperature

..... HDK-790EXIII / 79EXIII : -20° C ~ +45° C (-4° F ~ +112° F)
CCU-790A : -0° C ~ +45° C (+32° F ~ +112° F)

■ Relative humidity

..... 30%~90% (Non-condensing)

■ Operating voltage

● HDK-790EXIII AC100/110/117/220/240±10%

● HDK-79EXIII 11~16V

■ Weight

● HDK-790EXIII 24kg (52.91 lbs) (without lens)

9-inch LCD color viewfinder : 2.1kg(4.63 lbs)

● HDK-79EXIII 4.5kg (9.92 lbs) (without lens)

2-inch B/W viewfinder : approx. 0.8kg (1.76 lbs)

● CCU-790A approx. 30kg (66 lbs)

■ Dimensions

● HDK-790EXIII W315 X H462 X D517mm
(W12.4 X H18.19 X D20.35 inches)

● HDK-79EXIII W125 X H270 X D337mm
(W4.92 X H10.63 X D13.27 inches)

● CCU-790A W438 X H132 X D430mm
(W17.24 X H51.97 X D16.93 inches)

Performance

■ Sensitivity..... F10/2,000 lx

■ S/N

HDTV system..... 60dB

NTSC system..... 64dB

■ Modulation depth

HDTV system..... 45% or more (800 TV lines, 27.5MHz)

NTSC system..... 90% or more (400 TV lines, 5MHz)

■ Limiting resolution

HDTV system..... 1,000 TV lines

NTSC system..... 900 TV lines

Video frequency response (Base Station output)

Y output..... Below 60Hz..... Falling

60Hz~30MHz..... within ±1.0dB

Over 30MHz..... Falling

PB, PR output signal..... Below 60Hz..... Falling

60Hz~15MHz..... within ±1.0dB

Over 15MHz..... Falling

NTSC output signal (Ych 100kHz, output signal from external camera control equipment)

Below 60Hz..... Falling

60Hz~4.5MHz..... within ±0.5dB

4.5MHz~8.0MHz..... within ±1.0dB

Over 8MHz..... Falling

■ Audio Frequency response (Base Station output)

Y output..... Below 100Hz..... Falling

100Hz~10kHz..... within ±1.0dB

Over 10kHz..... Falling

■ Contour correction

Vertical..... Sline

Horizontal..... Boost frequency, 13MHz~24MHz (HDTV)

Boost frequency, 2.7MHz~8.9MHz (SDTV)

Gamma..... OFF, 0.35, 0.4, 0.45

■ Gain

..... -3dB, 0dB, +3dB, +6dB, +12dB (Standard)

■ Power consumption

● HDK-790EXIII approx. 500VA (including 9-inch LCD color viewfinder and CCU)

● HDK-79EXIII Camera Head : 28W / 2-inch VF : 6W

Design and specifications are subject to change without notice.

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