HSC Series HD/SD System Camera

HSC-300RF, HSC-100RF Optical Fiber Camera
HSC-300R, HSC-100R Digital Triax Camera

SONY

Power HAD FX

HSC - The World Standard for High Definition Production

Sony proudly introduces four all-new powerful HD/SD system cameras in its HSC Series, which contains Sony's latest broadcast technologies.

The HSC-300R and HSC-100R incorporate digital triax technology, which allows systems to be configured with conventional digital triax, while the HSC-300RF and HSC-100RF incorporate optical fiber technology, enabling long-distance signal transmission.

Each of these HSC Series cameras is equipped with sophisticated 16-bit A/D conversion circuitry, as well as three superb 2/3-inch CCDs to achieve high levels of picture quality.

Sony also offers large-lens operation with the HSC-300R and HSC-300RF in combination with HDLA-1500 Series Large Lens Adaptors. These adaptors have been widely accepted for use with the flagship model of Sony's HDC Series, and feature a unique Quick Mount design to maximize camera operability.

Excellent Picture Quality

Multi-format Operation

HSC-300R HSC-300RF HSC-100R HSC-100RF

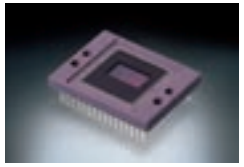
Users can choose from a wide range of capturing modes, including 1080/29.97PsF*1, 1080/25PsF*1, and 1080/23.98PsF*1 as well as 1080/50i, 1080/59.94i, 720/50p, 720/59.94p, 576/50i, and 480/59.94i.

*1 Optional HZC-PSF3 software is required. 1080/23.98PsF is for HSC-300RF and HSC-100RF.

Sophisticated 2/3-inch CCD

HSC-300R HSC-300RF HSC-100R HSC-100RF

HSC Series cameras are equipped with field-proven 2/3-inch-type full-resolution 1920 x 1080 CCDs. Due to Sony's advanced sensor technologies, the CCD imager offers a high sensitivity of F10 for 59.94 Hz and F11 for 50 Hz with a remarkable signal-to-noise ratio (S/N) of -60 dB (HD) for high-quality pictures in all kinds of demanding shooting environments.



High-quality 16-bit A/D Conversion and DSP LSI

HSC-300R HSC-300RF HSC-100R HSC-100RF

Each of these cameras also incorporates a high-performance 16-bit A/D converter with the latest technologies, enabling captured images to be processed with maximum precision. Also, the Auto Lens Aberration Compensation function can optimize lens performance to provide stunning picture quality.

Smart Flexibility

Digital Extender Function

HSC-300R HSC-300RF HSC-100R HSC-100RF

The Digital Extender function expands the size of the image by a factor of two in the center of the image sensor's captured image. This function works without decrease in sensitivity, such as an F-number drop, which typically occurs when using conventional optical extender functions.

Auto Lens Aberration Compensation 2 (ALAC2) Function

HSC-300R HSC-300RF HSC-100R HSC-100RF

The ALAC2 function automatically reduces lens chromatic aberration by both horizontal and vertical compensation when a lens that supports the ALAC2 function is attached.

Versatile Camera Interfaces

HSC-300R HSC-300RF HSC-100R HSC-100RF

HSC Series cameras provide a wide range of inputs and outputs via the connector panel, including HD-SDI output, SD-SDI output, VF signal, return signal, and SDI Prompter signal. Moreover, an intercom channel (ENG/PROD) is also provided.

Digital Triax Operation

HSC-300R HSC-300RF HSC-100R HSC-100RF

HSC-300R and HSC-100R cameras utilize a very high-quality digital triax system that expands operability in field applications, as well as in studio production. This digital triax system can be integrated into conventional triax-based infrastructures, enabling an easy upgrade from existing systems. The latest digital triax transmission system offers long cable runs of up to 1,800 m (5,905 feet)*2 for the HSC-300R and up to 1,200 m (3,937 feet)*2 for the HSC-100R, via ϕ14.5 mm cable between the camera and the CCU.

*2 The maximum cable length depends on the camera system configuration, lens type, and the number of cable connections.

Optical Fiber Operation

HSC-300R HSC-300RF HSC-100R HSC-100RF

HSC-300RF and HSC-100RF cameras incorporate a optical fiber transmission system as standard which enables signal transmission over a long distance. The developed optical fiber transmission system offers long cable runs of up to 2000 m (6562 feet)*3 between the camera and the CCU.

*3 The maximum cable length depends on the camera system configuration, lens type, and the number of cable connections.

Large Lens Operation

HSC-300R HSC-300RF HSC-100R HSC-100RF

In addition to the compatible devices mentioned above, highly versatile HDLA-1500, HDLA-1505, and HDLA-1507 Large Lens Adaptors are also available. These adaptors allow the HSC-300R and HSC-300RF to be used for many different production applications, and enable users to choose the optimum viewfinder for each shooting condition. This capability makes the HSC-300R and HSC-300RF the most flexible portable cameras in their class. Installing the HDLA-1500/1505/1507 Large Lens Adaptor is very simple and eliminates time-consuming adjustments such as lens centering or additional wiring.

Smart Flexibility

Simple Yet Versatile System Configuration

HSCU-300R HSCU-300RF

HSC Series cameras offer flexible configuration with the highly compact 1.5 RU-size HSCU-300R and HSCU-300RF Camera Control Unit, creating a standardized 19-inch rack system that is ideal for space-limited production areas. When the front panel of the HSCU-300R or HSCU-300RF is replaced with the optional HKCU-FP2 CCU Front Control Panel, a simple remote control system can be configured. Many camera functions can be controlled using the knobs and switches on the HKCU-FP2.
Furthermore, when optional HZCU-MC3 camera operating software is installed, the HSCU-300R and HSCU-300RF can connect to the HSC-300R and HSC-300RF respectively with the MSU-1000/1500 Master Setup Unit or RCP-1000 Series Remote Control Unit. This enables the HSC-300R and HSC-300RF to be used as a simple studio system or as part of a large-scale broadcasting system consisting of multiple cameras.

HSCU-300R

HSCU-300R with optional HKCU-FP2

HSCU-300R Rear Panel

Operating Versatility

Robust Design

HSC-300R HSC-300RF HSC-100R HSC-100RF

In order to survive the stresses of professional use, the main chassis of HSC Series cameras is made of a magnesium-alloy casting. This rigid body ensures the camera is highly durable and helps to protect its lightweight precision components such as integrated optical elements and electronics.

Position-adjustable Shoulder Pad

HSC-300R HSC-300RF HSC-100R HSC-100RF

The position of the shoulder pad can be adjusted – either forwards or backwards – to provide users with optimum weight balance. This is particularly useful when the camera is docked with any type of lens or camera adaptor. In addition, no tool is required for this adjustment.

Two Types of Focus Assist Function

HSC-300R HSC-300RF HSC-100R HSC-100RF

- Viewfinder Detail: adds dedicated image-enhancing edge signals directly to the viewfinder, enabling the camera operator to recognize a focusing point
- Focus Assist Indicator: displays an indicator for adjustment at the bottom or other position of the viewfinder frame; this is particularly beneficial when shooting with a wide-viewing angle

Optimized Handle Shape for Stable Shooting

HSC-300R HSC-300RF HSC-100R HSC-100RF

The designed carrying handle enhances camera operability. A protrusion positioned on the front of the handle enables the user to hold the camera with added stability while shooting. In addition, the non-slip structure of the handle's lower surface helps users to grasp the handle firmly.

ND/CC Dual Optical Servo Filters

HSC-300R HSC-300RF HSC-100R HSC-100RF

HSC-300R and HSC-300RF cameras are equipped with Neutral Density (ND) and Color Correction (CC) optical servo filter units, which can be remotely controlled from a remote control panel (RCP) or a master setup unit (MSU).

Function-assignable Switches

HSC-300R HSC-300RF HSC-100R HSC-100RF

These HSC Series cameras have dedicated assignable switches available for frequently used functions. Located on both the side and rear panels, these switches allow functions such as electronic color-temperature conversion to be assigned as required. Buttons on the handle are also available as function-assignable switches. All of these switches greatly enhance the camera's operational convenience.

Built-in High-quality Down Converter

HSC-300R HSC-300RF HSC-100R HSC-100RF

This down converter enables superior SD images as standard.

HSC Series Creative Versatility

Selection of Multiple Gamma Tables

HSC-300R HSC-300RF HSC-100R HSC-100RF

In addition to artistic and skillful lighting, in-camera gamma setting plays an important role in dealing with contrast range and giving a specific “look” to an image. In order to meet a broad array of customer demands, seven types of standard-gamma and four types of hyper-gamma table are provided.

HyperGamma

HSC-300R HSC-300RF HSC-100R HSC-100RF

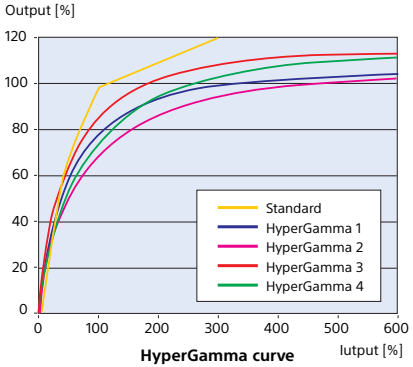
HyperGamma is a set of new transfer functions designed to provide powerful contrast handling by making maximum use of the capacity and wide dynamic range of the CCD sensor.

These functions are quickly accessed via the set-up menu, and camera operators can select one curve from a choice of four that best suits their needs and conditions. For example, they can select to enhance natural reproduction in low-key areas to achieve greater flexibility in wide dynamic scenes.

Low Light Condition

High Contrast Scene

Simulated images



HyperGamma curve

Multi-matrix Function

HSC-300R HSC-300RF HSC-100R HSC-100RF

The Multi-matrix function of the HSC Series allows color adjustments to be applied over a color range specified by the operator. The color spectrum is divided into 16 areas of adjustment, where the hue and/or saturation of each area can be modified. This function is especially useful when only the hue of certain colors needs to be adjusted for special-effects work.

Multi-matrix is extremely effective for capturing images with similar color tone in a system configured with existing SD cameras or other models of camera. This function enables the picture from another model of camera to be easily matched.

Multi-matrix OFF

Multi-matrix ON

Simulated images

Adaptive-matrix Function

HSC-300R HSC-300RF HSC-100R HSC-100RF

This enables ideal color conversion for shooting even under excessively strong ambient lighting conditions, such as live shooting under bright monochromatic blue light. These conditions would typically cause a conventional matrix function to exceed the color conversion range.

Master White Gain

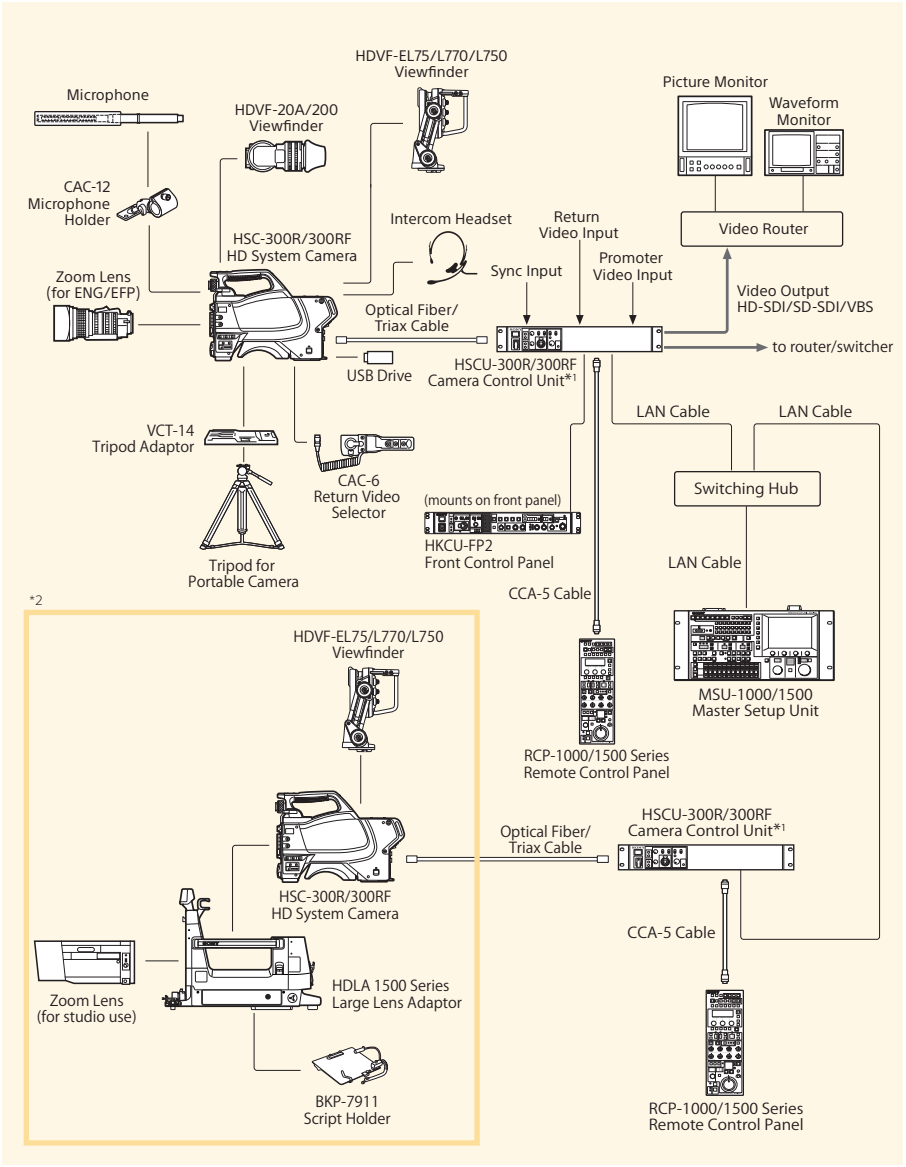
HSC-300R HSC-300RF HSC-100R HSC-100RF

The Master White Gain function of the HDC Series enables step-less adjustment of gain levels. This makes it possible to adjust the gain level more precisely compared to conventional stepwise adjustment.

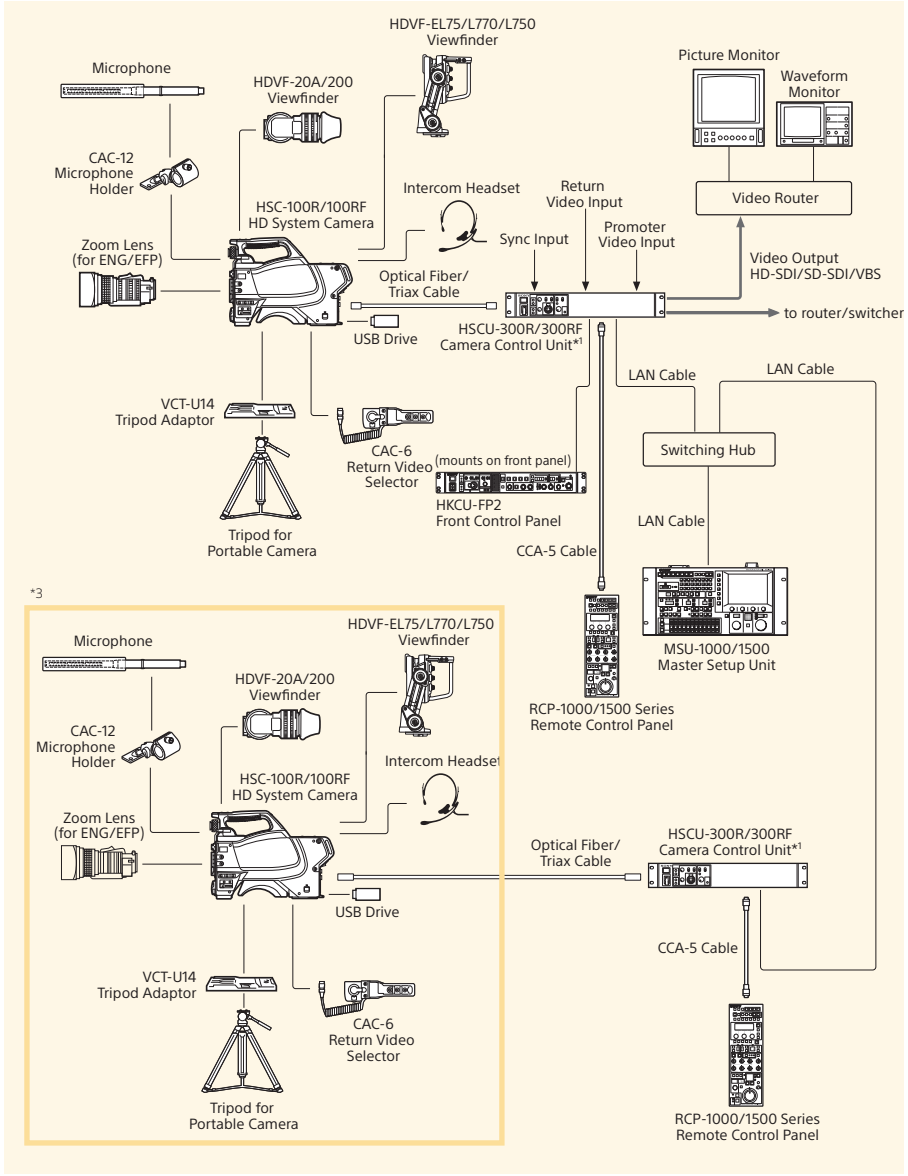
Simulated images

System Configuration Examples

HSC-300R **HSC-300RF**



HSC-100R **HSC-100RF**



*1 Optinal HZCU-MC3 software is required for multi-camera operation.

*2 This area can be replaced with the HSC-100R/100RF.

*3 This area can be replaced with the HSC-300R/300RF.

Optional Accessories

HDLA-1500
Large Lens Adaptor
(to attach the HDVF-EL70)

HDLA-1505
Large Lens Adaptor
(to attach the HDVF-EL75)

HDLA-1507
Large Viewfinder Adaptor
(to attach the HDVF-EL70)

HKCU-FP2
CCU Control Panel

RCP-1000
Remote Control Panel

RCP-1001
Remote Control Panel

RCP-1500
Remote Control Panel

RCP-1501
Remote Control Panel

RCP-1530
Remote Control Panel

HDVF-20A
2.0-inch* CRT B/W
Viewfinder

HDVF-200
2.0-inch* CRT B/W
Viewfinder

HDVF-L770
7.0-inch* LCD Viewfinder

HDVF-L750
7.0-inch* Viewfinder

HDVF-EL70
7.4-inch* Color HD
Viewfinder

HDVF-EL75
7.4-inch* Color HD
Viewfinder

VFH-790
Outdoor Hood for
HDVF-EL70/EL75/L770/L750

CAC-12
Microphone Holder

CAC-6
Return Video Selector

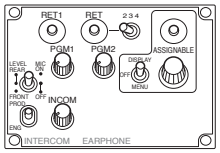
VCT-14
Tripod Adaptor

* Viewable area measured diagonally.

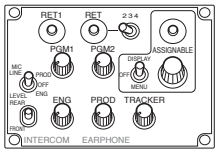
Control/Intercom Panels and Connectors

HSC-300R **HSC-300RF** **HSC-100R** **HSC-100RF**

Operation Panel

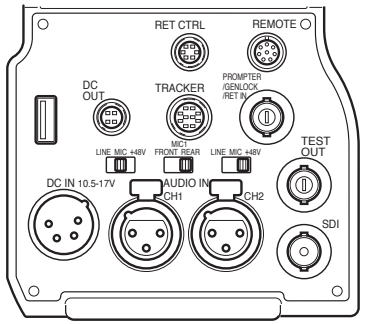


(for 60 Hz countries)



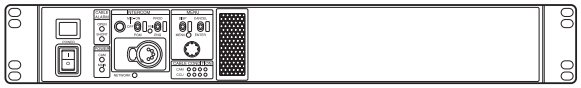
(for 50 Hz countries)

Connector Panel

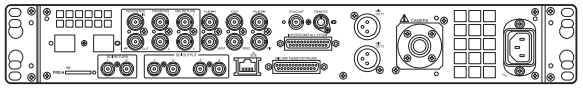


HSCU-300R **HSCU-300RF**

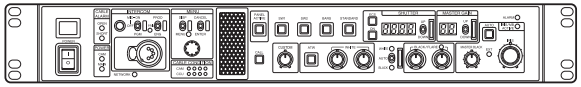
Front Panel



Rear Panel



HKCU-FP2 CCU Control Panel (Option)



Specifications

HD/SD System Camera

	HSC-300R	HSC-300RF	HSC-100R	HSC-100RF
General				
Power requirements	DC 180 V, 1.0 A (max.), DC 12 V, 7 A (max.)			
Operating temperature	-20°C to +45°C (-4°F to +113°F)			
Storage temperature	-20°C to +45°C (-4°F to +113°F)			
Mass	4.5 kg (9 lb 15 oz)	4.1 kg (9 lb 10 oz)	4.5 kg (9 lb 15 oz)	4.1 kg (9 lb 10 oz)
Camera				
Pickup device	3-chip 2/3-inch type CCD			
Effective picture elements (H x V)	1920 x 1080			
Signal format	1080/50i, 59.94i, 720/50p, 59.94p, 1080/25PsF*1, 29.97PsF*1, 23.98PsF*1			
Spectrum system	F1.4 prism system			
Lens mount	Sony bayonet mount			
Built-in filters	CC A: CROSS, B: 3200 K, C: 4300 K, D: 6300 K ND 1: CLEAR, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND		CC Electrical ND 1: CLEAR, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND	
Sensitivity (at 2000 lx, 3200 K, 89.9% reflectance)	F10 (59.94 Hz) / F11 (50 Hz) at 2000 lx (3200 K, 89.9% reflectance)		F10 (59.94 Hz) / F11 (50 Hz) at 2000 lx (3200 K, 89.9% reflectance)	
Signal-to-noise ratio (typical)	HD : -60 dB (1080i)			
Horizontal resolution	HD : 1,000 TV lines SD : 900 TV lines			
Shutter speed selection	1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 (s) (59.94i mode) 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000 (s) (50i mode)			
Modulation depth	HD : 45% at 27.5 MHz (1080i) SD : 90% at 5 MHz			
Input/output connectors				
Audio input (CH1, CH2)	XLR 3-pin, female (x1 each) For MIC: -60 dBu (may be selected to -20 dBu by menu or HSCU operations), balanced For LINE: 0 dBu, balanced			
Mic 1 input	XLR 3-pin, female (x1)			
Return control input	6-pin (x1)			
Prompter output/Genlock input/Return input	BNC (x1), 1 Vp-p, 75 Ω			
DC input	XLR 4-pin (x1), DC 10.5 V to 17 V			
DC output	4-pin (x1), DC 10.5 V to 17 V, 0.5 A (max.), 2-pin (x1), DC 10.5 V to 17 V, 2.5 A (max.)			
Test output	BNC (x1)			
SDI output	BNC (x1)			
Earphone output	Stereo mini jack (x1)			
CCU	Triax (x1)	Fiber (x1)	Triax (x1)	Fiber (x1)
Tracker	10-pin (x1)			
Intercom	XLR 5-pin, female (x1)			
Remote	8-pin (x1)			
Lens	12-pin (x1)			
Viewfinder	20-pin (x1)			
Supplied accessories				
	Operating instruction (1), Cable clamp belt (1), Switch label (1)		Operating instruction (1), Cable clamp belt (1), Switch label (1), Warranty booklet (1)	

*1 An optional software HZC-PSF3 is required. 1080/23.98PsF is for HSC-300RF and HSC-100RF.

Camera Control Unit

	HSCU-300R	HSCU-300RF
General		
Power supply	AC 100 V to 240 V, 50/60 Hz	
Operating temperature	5°C to 40°C (41°F to 104°F)	
Storage temperature	-20°C to +60°C (-4°F to +140°F)	
Mass	7.9 kg (17 lb 7 oz)	6.7 kg (14 lb 12 oz)
Input/output connectors		
Camera	Triax (x1)	Fiber (x1)
Intercom/Tally/PGM	D-sub 25-pin, female (x1) • Intercom (PROD/ENG), 4W/RTS/CC, 0 dBu • Tally (R, G) • PGM 2 systems, -20/0/+4 dBu	
Remote	8-pin multi-connector (x1)	
Trunk / Mic remote*2 / WF remote*2 / WF mode	D-sub 25-pin, female (x1), Trunk : RS-422A 1 system	
LAN	RJ-45 (x1), 10BASE-T, 100BASE-TX	
Input connectors		
AC input	AC 100 V to 240 V	
Serial return input	BNC (x2) HD-SDI : SMPTE 292M, 0.8 Vp-p, 75 Ω, 1.485/1.4835 Gbps SD-SDI : SMPTE 259M, 270 Mbps HD-SDI/SD-SDI selectable	
VBS return input	BNC (x2) VBS: 1.0 Vp-p, 75 Ω	
Reference input	BNC (x1) with loop-through output BNC (x1) HD : SMPTE 274M, tri-level sync, 0.6 Vp-p, 75 Ω SD : Black burst (NTSC: 0.286 Vp-p, 75 Ω; PAL: 0.3 Vp-p, 75 Ω)	
Prompter input	BNC (x2), VBS signal, 1.0 Vp-p, 75 Ω, 2 ch	
Output connectors		
Mic output	XLR 3-pin, male (2), 0/-20 dBu	
HD-SDI/SD-SDI output	BNC (x2) HD-SDI : SMTPE 292M, 0.8 Vp-p, 75 Ω, 1.485/1.4835 Gbps SD-SDI : SMPTE 259M, 0.8 Vp-p, 75 Ω, 270 Mbps HD-SDI/SD-SDI selectable	
HD-SDI/SD-SDI monitor output	BNC (x2) HD-SDI : SMTPE 292M, 0.8 Vp-p, 75 Ω, 1.485/1.4835 Gbps SD-SDI : SMPTE 259M, 0.8 Vp-p, 75 Ω, 270 Mbps HD-SDI/SD-SDI selectable	
Pr/R/R-Y, Y/G/Y, Pb/B/B-Y	HD Component video: Y (100% white): 0.7 Vp-p, Pr/Pb (75% color bar): 0.7 Vp-p, 75 Ω HD RGB video R/G/B (100% white): 0.7 Vp-p, 75 Ω SD Component video: Y (100% white): 0.714 Vp-p, Pr/Pb (75% color bar): 0.756 Vp-p, 75 Ω SD RGB video R/G/B (100% white): 0.7 Vp-p, 75 Ω	
VBS output	BNC (x2), VBS 1.0 Vp-p, 75 Ω	
PIX output	BNC (x1), VBS/R/G/B (VBS 1.0 Vp-p, 75 Ω)	
Sync/WF output*2	BNC (x1), Sync output: HD: BTA-S001A, tri-level sync, 0.6 Vp-p, 75 Ω SD: composite sync, 0.3 Vp-p, 75 Ω HD sync/SD sync selectable WF output: VBS/SEQ/R/G/B (VBS 1.0 Vp-p, 75 Ω)	
Supplied accessories		
	Number plates (1 set), Operation manual (1)	

*2 Selectable

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