

Presentation of SK-3300 series Digital HDTV Production Cameras

HITACHI

Studio version



Portable EFP version



Features

■ Full HDTV Performance

- True 1080i & 720p(optional) with 2.2M pixel CCDs
- Full digital processing with single DSP and up to 30-bit internal processing
- Resolution - 1000 TV lines
- Sensitivity & S/N - F8.0 at 2000 lx, 56 dB
- Digital optical fiber transmission 1.5Gbps with widely available SMPTE 304M connector
- Digital CCU provides HD SDI
- Same HD & SD signal Phase output from CCU
- Built-in frame sync. DSP for trouble free return video switching



Features



■ Simultaneous SDTV Outputs

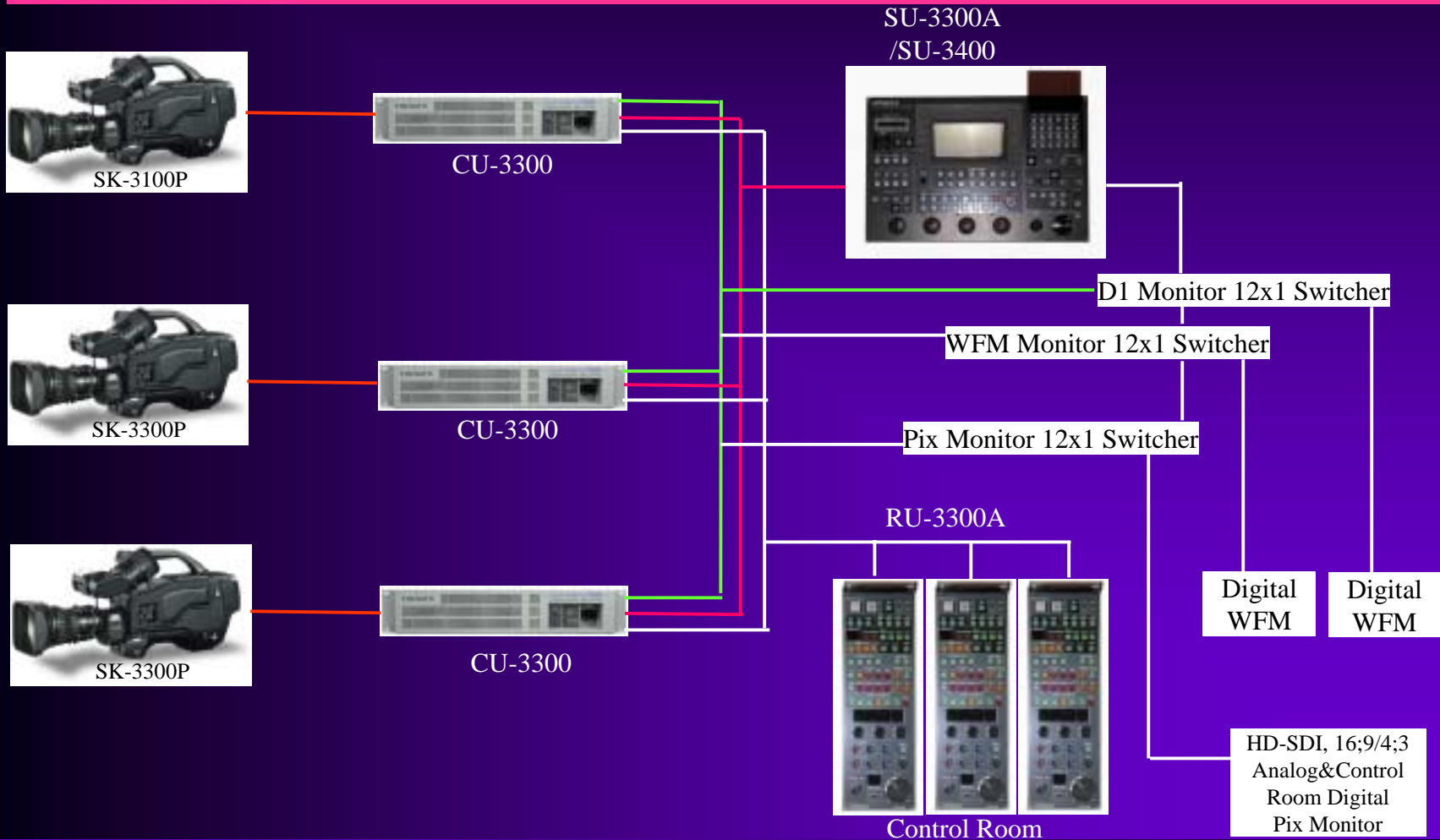
- Down-converted 525i video is better than standard SDTV cameras
- SDTV resolution: 900 TVL (4:3 mode), 750 TVL (16:9 mode)
- Switchable 4:3 and 16:9 aspect ratio for SDTV outputs
- Up-conversion of 480i VF return for HDTV scan rate VF
- 480i CCU digital output: 3 D1 (SMPTE 259M)
- 480i CCU analog outputs: 3 SDTV VBS(NTSC), 2 PIX, 1 WFM

Features

- Dual Adjustment Controls
 - Setup control toggles between HDTV and SDTV
- In addition to ample HDTV video controls the SDTV video has individual control for:
 - Detail setups and frequencies
 - Masking setups



Configuration



Facilities

Camera Control Unit Signal Inputs and Outputs

<i>Digital Inputs</i>	4	* RET D1	<i>Analog Inputs</i>	1	PROMPT VBS
	4	* RET HD SDI & D1		4	* RET VBS
	1	HD 3 level-SYNC		1	GL VBS or HD 3level Sync
<i>Digital Outputs</i>	3	HD SDI	<i>Analog Outputs</i>	3	SDTV VBS (NTSC)
	3	D1		2	SDTV PIX MON or D1
	2	HD SDI PIX		1	SDTV WFM MON or D1
	1	HD SDI WFM	*Selection of 4 different format RET video signals		

Facilities

Camera Control Unit Signal Inputs and Outputs

<i>Audio Inputs</i>	1	Analog PGM	<i>Other In/ Out</i>	TALLY X2 in
	2	INCOM Channel RX		TALLY X2 out
				WFM CTL X1 out
				SYSTEM SEL X1 in (opt)
<i>Audio Outputs</i>	2	Digital AES/EBU (opt)		TRUNK DATA in (opt)
	2	MIC Analog Stereo		TRUNK DATA out (opt)
	2	INCOM Channel TX		19.2Kbps
				AC IN X1
			FIBER X1	

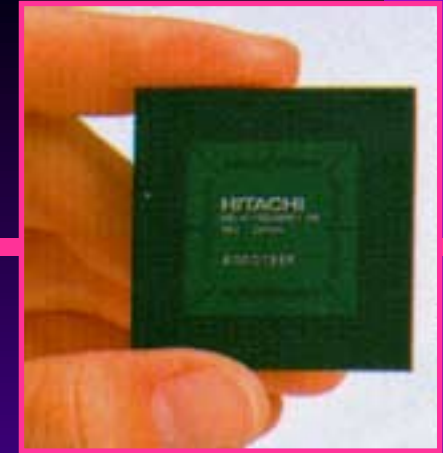
The CCD



- Series introduced at NAB 98 with 1035i line 2M pixel CCDs
- NAB 99 with 1080i first generation 2.2M pixel CCDs.
- 1080i CCD readout frequency=74.16 MHz
- Pixels Total: 2010HX1086V, effective: 1920HX1080V
- 2/3 inch, 16:9 format
- Frame Interline Transfer with no Vertical-Smear
- Also Interline Transfer with low Vertical-Smear

The Hitachi New DSPs

- Hitachi manufactured and programmed
- 0.18 μ m pitch, 1.8 million gates
- 2.5V low power consumption
- Incorporates: Memory, processing and S-P/ P-S conversion
- Dual DSP Processing
One DSP in the Camera use for HDTV, One DSP in the CCU for SDTV signals

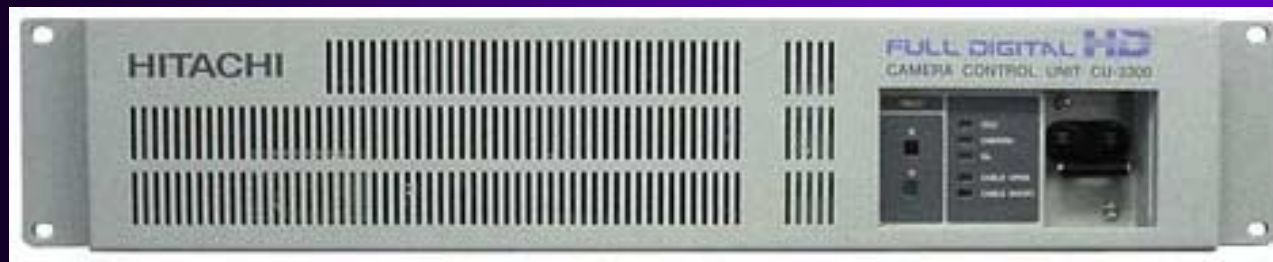


Digital Technology Implementation

- Digital signal processing (DSP) with up to 30-bit internal accuracy
- Digital optical fiber 1.5 Gbps transmission
- SDI outputs for both HDTV and SDTV video
- High quality digital down-converter for SDTV signal
- The up-converter employs digital scan-line interpolation technology in the SDTV video for VF return
- Separate digital processing for HDTV and SDTV video

Reliable & Serviceable CCU design

- HD signal processing, SD signal processing and Power circuit are separated by built-in individual modules.
- Compact & Lightweight CU-3300
Full rack size 2 units, 15kg, 150VA
- Format exchanged by Menu function
- Built-in digital NTSC encoder



SA-3300 Studio Adapter



- Provides complete studio camera features and operational ease using a portable camera head
 - 1080i HD, 7-inch CRT, mono or color, viewfinder with pan and tilt, video selector, box cursor, picture in picture
 - Dual intercom with XLR connectors, program sound, and tracker connector

SA-3300 Studio Adapter

- Two microphone inputs with XLR connectors
- Mount for high quality "box" type studio lens
- Prompter video output and 200W AC to power prompter
- Trunk data in/ out for control of robotic pedestal in virtual studio applications
- Camera can be quickly and easily removed for portable use



New Functions

- 12 bit A/C
- Automatic flesh-tone detection
 - Accurately samples flesh-tone color for adjustment of flesh-tone detail settings
- Dual flesh-tone settings
 - Individually applies flesh-tone detail adjustments to 2 different persons on the scene

New Functions

■ Flesh-tone masking

- Accurately controls flesh-tone color without affecting other color and scene content

■ Slim aperture

- Provides a very fine contouring that is perceived as film-style video detail quality

■ 14-point gamma curve

- Increased digital control points provide for very smooth gamma adjustments and rendition

New Functions

■ Knee saturation

- Restores the scene color in the brightest parts of the picture.
- Can be user adjusted to saturate compressed areas or knee point of the video

■ Black Stretch/ Press

- Manipulates dark areas in the video to provide the of greater dynamic range
- Controls the gamma of low-video portions to aid in enhancing the film-look.

Existing Functions

- 6 Vector Color Correction
- Linear Matrix
- Chroma Saturation
- High Chroma Aperture
- Detail Video Source selection
- 360° Color Detail
- Variable Detail Frequency
- Special Gamma

SK-3300series Advantages

- Employs latest generation 1080i CCDs and Hitachi 30 bit DSP
- 12 bit A/C
- Full featured Studio Adapter facilitates use of portable camera head in studio or EFP applications
- Precision setups due to full digital operation

SK-3300 series Conclusions



- Digital Processing
- Multi-format HDTV
- High Quality Down/Up Converter
- Built-in Frame Sync
- Hitachi Reliability
- Precision setups
- High quality SDTV
- Versatile production tool for today and tomorrow

SK-3300P/SK3300



SK-3300



SK-3100P/SK-3300P

Accessory



Studio adapter



Set Up Unit



Portable LCD VF



Remote Unit