

HIGH DEFINITION PRODUCT ROUNDUP

FOCUS ON CAMERAS

BY JOHN FEINS

Though the high definition revolution has in many respects only just begun, soon the high definition renaissance will be in full gear. As ever, it all begins with image acquisition—the camera.

Now that productions and their cinematographers are increasingly being equipped with high definition cameras, filmmaking is starting to undergo a visible shift. The benefits of HD cameras are unprecedented: real-time HD image evaluation on-set; instant replay of a full-color, high-resolution shot; real-time image optimization while shooting; extended recording times, and even freedom from recording cables.

The advent of portable, wireless, super slow motion, and compact HD cameras points to more and more dazzling sights and sounds ahead—everywhere from the cinema to the desktop. Along with some already venerable HD cameras, here are some of the expanding roster of offerings from the major manufacturers.

IKEGAMI

Ikegami Electronics is one of the world's leading manufacturers of high quality professional broadcast equipment. Ikegami offers a broad range of TV cameras for ENG, EFP, Studio, HDTV, CCTV and medical imaging. Ikegami products have received various Emmy® Awards for engineering excellence. The company's universal high definition TV cameras have been widely accepted by the broadcast industry as it continues to migrate to the high definition television format.

HDK-75EX Full Digital HDTV Camera System *Advanced Technology Compacted Light Weight Full Digital HDTV Portable Camera System*

The HDK-75EX is a high performance full digital portable camera with compacted lightweight and sophisticated design with integrated fiber adaptor.

Features

- Full Digital and High Picture Quality using newly developed digital process ICs, precision designed at 0.18µm rule, the video signals are digitized with 12-bit A/D conversion and up to 38-bit internal digital processing circuit. As non-linear processing such as gamma correction is performed digitally, consistent and repetitive high picture quality and stable reliability is assured.
- Compacted and Lightweight body with integrated fiber adaptor Weight: 4.5kgs (Including fiber adaptor, without lens)
- Low Power Consumption : 28W
- Excellent Sensitivity (f10) and S/N ratio (S/N 56dB)



HDK-725P Full Digital HDTV Camera System *Top of the Line Full Digital Native 720p HDTV Portable Camera System*

Using newly developed digital process ICs, precision designed at 0.18µm rule, the video signals are digitized with 12-bit A/D conversion and up to 38-bit internal digital processing circuit. As non-linear processing such as gamma correction is performed digitally, consistent and repetitive high picture quality and stable reliability is assured.

Features

- Employs newly developed IT 2/3" native 720p CCDs
- New HDTV System Accessories, CB-79HD/TA-79HD Triax Adaptor system
The CB-79HD/TA-79HD HDTV new Triax Adaptor system is higher performance, ideally suited for various field applications in the digital era. The system consists of the TA-79HD docking Triax Adaptor and the CB-79HD CCU side Converter Box. The CCU converter box enables use of triax or fiber cable without any reconfiguration. Docking type adaptors for triax or fiber make camera configuration quick and easy. No local AC power is necessary because the CCU provides AC power for the full system. The CB-79HD CCU converter box is only 1U rack size providing efficient use of space.
- New Camera Control Unit, CCU-790A
Connects with Ikegami HDK-series HDTV cameras via SMPTE Fiber Cable, either native 720/60p or 1080i types. The CCU-790A achieves the consistently high picture quality and reliability that digital processing with next Generation 0.18µm ASICs can deliver.
- Optional Engine Board with newly developed ASICs Frame (24p, 30p, 50p etc) & Multi-Format (1080i, 720p) Conversion are available.
- Studio lens and 7-inch VF operation with SE-79D System Expander



HDK-79EC HD Native Multi-format CMOS Camera System *Full Digital and High Picture Quality*

Using newly developed digital process ICs, precision designed at 0.18µm rule, the video signals are digitized with 12-bit A/D conversion and up to 38-bit internal digital processing circuit. As non-linear processing such as gamma correction is performed digitally, consistent and repetitive high picture quality and stable reliability is assured.

Features

- 2/3-inch specified CMOS sensors Native 720/60p, 1080/60i or 1080/24p operation available
- Simultaneous 480/60i Output available from CCU with aspect ratio control
- HDTV System Accessories: The CB-79HD/TA-79HD HDTV new Triax Adaptor system is a higher performance, ideally suited for various field applications in the digital era. The system consists of the TA-79HD docking Triax Adaptor and the CB-79HD CCU side Converter Box. The CCU converter box enables use of triax or fiber cable without any reconfiguration. Docking type adaptors for triax or fiber make camera configuration quick and easy. No local AC power is necessary because the CCU provides AC power for the full system. The CB-79HD CCU converter box is only 1U rack size providing efficient use of space



- Camera Control Unit, CCU-790A
Connects with Ikegami HDK-series HDTV cameras via SMPTE Fiber Cable, either native 720/60p or 1080i types. The CCU-790A achieves the consistently high picture quality and reliability that new digital processing with next generation 0.18umASICs can deliver
- Studio lens and 7-inch VF operation with SE-79D System Expander

HDL-0101 HD RF Camera System *HDTV Digital Wireless Camera System*

The HDTV Digital Wireless Camera System is the ultimate system combining various technologies Ikegami has developed and promoted for years such as high definition television camera technology, image compression, and microwave transmission. Through joint development with NHK and NHK Technical Services, Inc., it has become the first practical high definition digital wireless system using microwave band.



The system consists of HDTV transmission, HDTV receiving and back channel parts. The HDTV transmission part combines the HDL-0101 camera and the PP-53 RF unit. The back channel part includes the back channel transmitter "DMC-2511" and the receiver module built-in the camera. The HDTV receiving part is the PF-503 64QAM-OFDM FPU.

Used as an MPEG2 camera allows for direct transmission or direct feed where a copper cable is available, which reduces the requirement for conventional short-distance FPU transmissions and tape delivery. When the RF unit is docked to the camera, the built-in OFDM system maintains robust operation even in a multi-path environment, so the system can be used in an urban area or with a crowd. In a sports event, this allows for the camera to access areas where cable laying is not possible and gives program production unique capability.

Features

- Digital HD signal transmission with embedded audio
- OFDM transmission provides stable operation
- 4 Preset Bit-rate/Modulation modes are selectable
- Back Channel facility for Intercom and Camera Remote Control

THOMSON

Thomson is the leading provider of technology and service solutions for integrated entertainment and media companies. Capitalizing on and expanding the company's leadership positions at the intersection of entertainment, media and technology, Thomson provides end-to-end solutions to content creators, video network operators, manufacturers and retailers through its Technicolor, Grass Valley, THOMSON and RCA brands.

The Grass Valley™ Viper FilmStream™ Digital Cinematographer's Camera from Thomson

This camera has three 9.2-million pixel Frame Transfer CCDs, and delivers an RGB 4:4:4 10-bit log output that has not been compromised by electronic camera signal processing. Last summer, the Viper FilmStream Camera System shot in the DreamWorks film "Collateral," starring Tom Cruise, which had a number one position at the box office following its opening.



Features

- Captures raw data directly from CCDs
- Unique 4:4:4 RGB Dual Link FilmStream output
- Native 16:9 or 2.37:1 aspect ratios without resolution loss using Dynamic Pixel Management™ technology
- Patented Frame Transfer (FT) CCD technology
- Mechanical shutter guarantees no vertical smear
- Multiple format support:
 - 1080p @ 23.98-, 24-, 25-, and 29.97 frames per second (fps)
 - 1080i @ 50 and 59.94 Hz
 - 720p @ 23.98-, 24-, 25-, 29.97-, 50-, and 59.94 fps
- Electronic viewfinder focus assist tools: crawler and zoom

The Grass Valley™ LDK 4000 camera

This camera is designed for small- to medium-sized broadcasters, digital production studios, and media creation companies that have settled on a single format for HD production. An affordable complement to the LDK 6000 mk II WorldCam multi-format camera, the LDK 4000 supports 1080i- or 720p-production and features low power consumption and Emmy® Award-winning and patented HD Dynamic Pixel Management™ (HD-DPM) image-sensor technology.

Features

- Single-format HD camera supports two configurations:
 - 1080i only
 - 720p only
- Camera package includes:
 - Camera head
 - Base station
 - HD triax cable adapter
 - Choice of a 2- or 5-inch viewfinder
- Low-power consumption
- Emmy® award-winning and patented HD-DPM image sensor technology
- Optional features, control panels, and signal-transmission systems available

LDK 6000 mk II camera

This camera captures true progressive high-definition images, natively, in multiple formats and frame rates. With three 9.2 million-pixel HD-DPM+™ CCDs, the camera offers the highest quality picture available for everything from remote-controlled, portable hand-held, and studio applications to EFP uses for SDTV and HDTV productions.

Features

- Supports 1080i and 720p formats at 50 and 59.94 Hz
- 9.2 million-pixel HD-DPM+ CCDs for optimum image capture
- 12-bit A-to-D conversion
- 22-bit digital signal processing
- 720P and 1080i instant switching capability for studio applications
- Emmy® award-winning dual skin contour circuits makes talent look its best
- Unique focus-assist tools:
 - Crawler, for creating motion on the edges of an object in focus
 - Instant push-button zoom, ideal for focusing on small details
- Smart cards for storing settings
- Unique dual-skin contour circuits
- TriaxHD transmission system rated up to 3300 feet/1000 meters
- Supports standard triax cabling
- Small, robust, lightweight HD base station
- Superior SDTV output on base station
- Small, strong, lightweight magnesium-alloy body—perfect for robotic applications
- Use with SuperXpander enables flexible configuration with studio lenses, accessories

The Grass Valley LDK 6000 mk II WorldCam camera

This camera also captures true progressive high-definition images, natively, in multiple formats and frame rates. With three 9.2 million-pixel HD-DPM+™ CCDs, it offers the highest-quality picture available for everything from remote-controlled, portable hand-held, and studio applications to EFP uses for SDTV and HDTV productions.

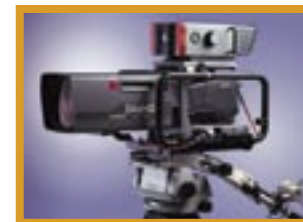


Features

- Format support:
 - 1080i at 50 and 59.94 Hz
 - 1080p at 23.97, 24 and 29.98 Hz
 - 720p at 23.97, 24, 29.98, 50 and 59.94 Hz
- 9.2 million-pixel HD-DPM+ CCDs for optimum image capture
- 12-bit A-to-D conversion
- 22-bit digital signal processing
- Single-button, instant switching capability between all formats
- Emmy® award-winning dual skin contour circuits makes talent look its best
- Built-in frame rate conversions include 3:2 pull-down on 24p-acquired material
- Unique focus-assist tools:
 - Crawler, for creating motion on the edges of an object in focus
 - Instant push-button zoom, ideal for focusing on small details
- Smart cards for storing settings
- Unique dual-skin contour circuits
- TriaxHD transmission system rated up to 3300 feet/1000 meters
- Supports standard triax cabling
- Small, robust, lightweight HD base station
- Superior SDTV output on base station
- Small, strong, lightweight magnesium-alloy body—perfect for robotic applications
- Use with SuperXpander enables flexible configuration with studio lenses, accessories

The Grass Valley LDK 6200 HD Super SloMo Camera System

This is the last major missing link in the HD production chain. The camera features a digital architecture, 12-bit analog-to-digital conversion circuitry, and Thomson's Emmy® award-winning Dynamic Pixel Management (HD-DPM+™) sensors for native multi-format acquisition. The camera is highly flexible and designed to support Triax or fiber-optic cable transmission—and can switch to standard LDK 6000 mk II HD camera operation with the push of a button.



Features

- World's first HD Super SloMo camera
- Multi-format support
- Incredible detail from native HD acquisition
- Digital signal processing uses 12-bit A-D conversion
- Same controls, look, and feel of today's current Grass Valley LDK cameras
- One-button switch to LDK 6000 mk II Standard operation
- Designed to support HD Triax and hybrid fiber signal transmission
- Supports third-party digital disc device for recording, storing HD images

PANASONIC

Panasonic Broadcast & Television Systems Co. is a leading supplier of broadcast, professional video and presentation products and systems. Recently, FOX's American Idol, the nation's most watched television program, announced it is capturing all its feature electronic news packages in high definition—and they have chosen Panasonic VariCam HD Cinema cameras.

AJ-HDC27F

VariCam® Variable Frame Rate 16:9 HD Cinema™ Camera with CineGamma™ Software

The AJ-HDC27 VariCam progressive scan high definition camcorder is the first high definition production camera that is capable of variable frame rate at the touch of a button. Individual frame rates may be selected from: 4-fps to 60-fps in single frame increments. Frame rates may be changed during recording.



Designed as a high quality production camera, this native 720p camcorder can be used for 60-fps or the film-like 24-fps acquisition. When acquiring for 24-fps projects, higher than 24-fps operation can be processed for slow motion effects while slower than 24-fps operation can be processed to speed up motion. The variable frame rates and related variable shutter speeds also create ghost like motion blur effects, warp speed zoom effects, and long exposure still shots reminiscent of what you see in music videos, sci-fi dramas and dream sequences.

The camera has the capability to emulate film's gradual transfer function performance. This function greatly increases the camera's usable dynamic range, especially in traditionally limiting areas such as highlight handling, which until now was a serious limitation for most HD cameras. This "Cine Gamma" provides the user with a much closer approximation of film's renowned

ability to maintain smooth image tonality even when gently compressing extreme highlights. Cinematographers are able through the Cine Gamma feature to control the camera's gamma transfer function to best optimize control over tonality, from extreme highlights to the lowest of shadow areas.

The AJ-HDC27 VariCam serves a triple role: as a 24-fps camera; as a standard 60-fps video camera; and as a variable frame rate special effects camera.

Features

- Colorimetry: standard color is compliant with SMPTE standards. To achieve a desired "look", an advanced color correction scheme utilizes a 12-pole color matrix that allows very specific colors to be set, especially when critical color matching is vital
- New Digital Signal Processing (DSP) offers a higher standard of precision color, detail and gamma processing to ensure optimum picture quality that is repeatable and transferable to all AJ-HDC27 VariCams
- Assignable Scene Files: an externally accessible switch allows for easy access to any of three user-designed set-ups, each with programmable color, detail, gain and gamma
- Scene Files, Internal Memory: a selection of four separate camera set-ups—plus one user standard-reference file—are available through user menu access. Set-ups are stored in camera memory and updated as needed
- Scene Files, Card Storage: camera set-ups can also be saved on a removable SD or Multi-Media Memory Card, which allows quick memory access to user-designed camera settings to achieve a particular look for given scenes. Also useful for matching multiple cameras with the same "look"
- Simple Cinematic Settings: provides for superior versatility in a single camera system when the Film User Menu is chosen
- User 1 / User 2: two externally accessible, user-assignable switches provide direct access (on or off) any one of six operational functions, including Super Gain, Super Black, Black Stretch, Super Iris, and Audio 1 & 2
- Wide Lens Selection: offers the ability to capture superb images with a wide selection of lenses including today's newest HD technology lenses and a large variety of existing prime lenses
- White Balance Selection: select between two programmable automatic white balance conditions (as set by the user) and one preset that can be set for either 32000 or 43000 Kelvin. This feature comes in very handy when moving quickly between dissimilar ambient lighting conditions
- Wide Range Gain: when shooting in wide-ranging light-level conditions, a programmable gain switch can be set to optimize signal levels—choose from -6 dB to +30 dB in thirteen steps
- Low Power Consumption: a moderate 32 Watts power consumption (38 Watts max) means good battery life can be realized. Expect about 1.5 hours from a HyTron 100 battery. The camera runs cool and does not employ a fan, assuring quiet operation.
- 46 Minutes Record Time: employing the large DVCPRO Cassette, a recording time of 46 minutes is possible thanks to the DVCPRO HD video recording format
- Three 1.1-Million Pixel IT CCDs: true to high-definition standards, the Matsushita 720 x 1280 IT CCDs are the key ingredient in creating rich images with about 850 lines horizontal resolution

AJ-HDX400

2/3" 3-CCD 16:9 1080i DVCPRO HD® Camcorder

The AJ-HDX400 is designed for mainstream HD acquisition and recording. The camcorder includes digital super gain (frame cumulative mode) and digital zoom. With high sensitivity and superb image quality, the AJ-HDX400 offers excellent balance, easy operation, and solid reliability.

Features

- F10 sensitivity, digital super gain, and line mix
- 12-bit A/D signal processing for better overall picture quality, with finer gradation, and improved color expression
- Newly developed 2/3" 3-CCD HD shooting system for high image quality and low smear
- Cine-like gamma curve lets you closely replicate the high-quality look and feel of film
- Standard HD-SDI output and built-in SD (NTSC) composite output
- 400 percent digital zoom for superior resolution
- Auto tracking white balance
- Four built-in user scene files and SD Memory Card slot for storing up to eight files
- Multi-function Zebra for contrast adjustment or auto white balance setting
- Precise color management with linear matrix color, 12-axis color correction, and shading correction
- Versatile DTL functions, including skin DTL and continuously variable DTL peak frequency
- Auto knee circuit produces wide dynamic range
- SynchroScan electronic shutter
- Light 9.4 lbs. and well balanced body
- Four-channel 48 kHz, 16-bit digital audio and 5-pin XLR mic jack
- Pre-recording (up to 10 seconds), retake, and interval recording
- Available UniSlot wireless receiver
- Available GPS unit
- Power-save management
- Color bars
- Built-in SMPTE timecode generator/reader with timecode in/out terminal

PANASONIC HD CAMERAS

AK-HC930

Multi-Format HD/SD Studio Camera System with Available 1080i Operation

2.2 million pixel high definition 3-CCD system provides exceptional image quality, sensitivity, and minimal smear.

Features:

- Low power and lightweight camera head enhances operational efficiency
- Latest generation DSP and 12-bit A/D conversion for high performance and outstanding image quality

AK-HC931

Multi-Format HD/SD Studio Camera System with Available 720P Operation

Exceptional 480i performance.

Features

- Upgradable to 720p, 1080i and 24-fps
- Three 2/3" progressive-scan CCD imagers
- Next-generation DSP LSIs, 12-bit A/D conversion circuits
- Ideal for studio and hand-held use
- Variable frame rates (6, 12, 18, 24, 30, 40-fps) for off-speed acquisition
- Latest generation of video processing features
- Lightweight: camera head only 10 pounds



AK-HC910

2/3" 3-CCD 16:9 1080i HD Convertible Camera

The AK-HC910 camera system is ideal for sports, boom or jib mount, point of view, medical imaging, government, high-resolution surveillance or any application where compactness and high definition resolution are important.

Features

- 2.2 million pixel high definition 3-CCD camera system provides exceptional image quality, sensitivity, and minimal smear
- Single-channel transfer system and spatial-offset processing technologies provide improved depth of modulation in high frequency areas
- Low power consumption and compact design
- 12-vector variable masking circuit allows precise and independent hue and saturation adjustment of individual colors
- Enhanced DTL signal processing in horizontal and vertical directions, as well as diagonally both in dark and brightly lit areas of the image, ensures high picture quality with minimal noise

AK-HC900

2/3" 3-CCD 16:9 720P HD Convertible Camera

Features

- 720p native camera with multiple frame-rate capabilities
- Captures film-like 24P HD images for content creation (with optional kit)
- Captures high frame-rate 60-fps images for broadcast sports or analysis applications
- Newly developed DSP ASICs
- Compact camera head weighs just 3.9 pounds
- Three 2/3" CCD imagers
- Variable frame rates (6, 12, 18, 24, 30 and 40-fps) (with optional kit)
- Extensive gain control settings (-6, -3, 0, 9, 18, 30, 42, 54, 62dB)
- Minimum illumination: 0.03 lux



PANAVISION

Panavision is the leading designer, manufacturer and supplier of high precision camera systems, comprised of cameras, lenses and accessories for the motion picture, television series and television commercial markets in North America, Europe and the Asia Pacific region. For information on Panavision's groundbreaking new Genesis camera system, please see the feature interview on page 10.

HD-900F High Definition Camera System

Beginning in 1997, Panavision and Sony announced collaboration on the development of a 24 frame, progressive capture digital high definition camera for use by motion picture filmmakers. Panavising the Sony HDW-F900 camera required a disassembly of the stock camera and replacement of the top cover, carrying handle, bottom supports and mounts with more robust and flexible mounts and handles. Also, a complete new faceplate, lens lock and iris rod support system have been installed. A newly designed Ultraview® Viewfinder with enhanced optical performance and easier to use controls replaces the standard viewfinder. These changes and more were made in order to produce a film friendly system that utilizes many of the standard Panavision accessories, such as the follow focus, matte box, and heads.



In addition to the mechanical modifications to the camera, a unique optical pre-filter gives you better color matching with film emulsions and enhanced resolution for blue screen effects cinematography.

The Panavised HDW-F900 Camera System includes a more robust faceplate and a lens lock that allows for optical recentering of the prism block, a bottom iris rod support system, a standard follow focus, matte box, and the Ultraview ViewfinderT with a larger image size and relocated control.

Includes

- HDW-F900 Sony 24P HDW-F900 High Def Camera—Panavised with more robust faceplate, lens lock
- HDRP HD Remote Control Panel
- HDPS HD 24/12DC Power Supply
- HDSP HD Steadicam Plate
- HDLM HD Low-Mode Bracket
- HDPCM HD Panahead Mount
- HDCH HD Carry Handle
- HDRB HD Rod Bracket
- PLLV Panalens Light with video
- EPL Eyepiece Leveler
- HDMB HD Matte Box 6x 6
- MMB4 Geared 4 Stage Module
- MMBFC-S Flexible Cable w/Handle 18 in.
- MMBFC-L Flexible Cable w/Handle 24 in.
- MMB2 Geared 2 Stage Module
- HDMB4 Bottom Mount 4 x 5
- MFFGB Modular Follow Focus Gear Box
- MFF2SK Modular Follow Focus Two Speed
- MFFSK Modular Follow Focus Single Speed

- HDFB HD FF Bracket
- AB100 AB 14.4 100WA NI Battery
- ABQNI AB NI Quad Charger
- ABSU Up Converter (14.4/24V)

SONY

Sony CineAlta products bring together the quality and universality of 24-frame cinematography with the real-time capability, efficiency and flexibility of Digital High Definition technology. CineAlta products deliver cinema-quality pictures at selectable frame-rates, simplifying International Programme Exchange by minimizing the need for standards conversion and opening up new possibilities for international co-production.

HDW-F900

HD Digital Camcorder

The HDW-F900 HDCAM™ camcorder revolutionized movie making and high-end television production with the ability to capture digital high-definition pictures at 24-progressive-frames per second—introducing digital motion picture capabilities to high-end program origination. The HDW-F900 has outstanding picture quality, flexibility in aesthetics and production methods, and is budget-friendly. A growing number of prominent producers around the world are employing it as a creative alternative to 24-frame film origination.

Moving pictures are digitally imaged in accordance with the CIF (Common Image Format) standard, which specifies a sampling structure of 1920 active pixels horizontally by 1080 active pixels vertically. In addition to recording at 24P, the F900 can switch to record at 25P, 30P progressive scan, and also at either 50 or 60 Hz interlaced. The physical resemblance of the HDW-F900 to the highly successful Digital Betacam™ camcorders is intentional, although there are some subtle but important changes that enhance operational familiarity and ease of use.

Features

- Internal light system: a two pin Power Tap socket provides up to 50w of power from an attached Lithium Ion Battery. This can be used to power a variety of devices, including an on-camera light.
- Stereo Audio Output: the rear mounted 5-pin XLR connector provides two analog audio output channels selectable between 1/2 and 3/4.
- Cassette Loading: loading a tape takes only five seconds for a cassette change. The robust loading mechanism is designed to be dust and drip proof.
- Optical Filter Wheels: two independent filter wheels (each with four positions) are provided. ND and Color Correction filters are installed and an optional servo filter drive unit can be installed allowing the filter setting to be changed with the RM-B150 remote control unit.
- ECS: Extended Clear Scan is particularly useful when shooting scenes that contain computer of TV screens as it minimizes the horizontal bars that can appear. ECS can handle multiple screens within a frame. The ECS shutter speed is continuously variable and can emulate the motion blur of a film camera operating at 24fps with a 180-degree shutter.
- Safe Area Markers: markers can be switched to any aspect ratio.
- Stereo Audio Output: a stereo line output is available from the 5-pin XLR connector on the rear of the camcorder. This provides two analog audio output channels, which can be selected to either Channel 1/2 or Channel 3/4.
- LCD Panel and Diagnostic System: all the main operational controls and switches are

located on the left-hand side of the camcorder. The LCD panel shows a wide range of status and diagnostic displays such as Tape Remaining, Battery Level, Audio Levels, etc.

- Electronic Shutter: the electronics shutter helps in capturing clear images of fast-moving objects by selectively minimizing motion blur.
- Assignable Button: a button just below the white balance-setting switch can be assigned to a function of your choice. Make it Return, Record, Lens Return, or a gain switch for either +12 or +24 hyper gain.

HDC-F950/HDCU-F950

HD Digital 4:4:4 Camera System

Quality, flexibility and modularity are the main attributes of this CineAlta high definition multi-format multi-frame rate digital camera. The highly configurable camera relies on externally available recording options, both tape and disk. The system concept originated from requests of moviemakers working on highly exacting special effects sequences and producers creating elaborate commercials for cinema and television presentation.

The HDC-F950 provides full-bandwidth digital 4:4:4 high-definition Red, Green, and Blue signal processing and output capability, with superb picture quality. These full-bandwidth R, G and B signals can be directly connected to a recording system, or then can be digitally transmitted to the new HDCU-F950 camera control unit via a single optical fiber cable. A variety of camera control signals as well as power to the camera also travel through this composite fiber/copper cable, maintaining the 'single-cable' connection that liberates operators from cumbersome cable handling.

Other innovative features include a significantly extended dynamic range (over previous models), a new 'long term exposure' function, and an innovative gamma-curve editing capability, which allows quick set up of an optimized gamma curve on a PC and subsequent loading of this data to the camera via a MemoryStick™ media card.

The HKC-T950 HD CCD block adapter is a strategic modular element that further enhances the camera system's operational flexibility. The adapter allows the camera's imaging system to become a compact unit that can be extended from the camera body (and the DSP processing system) by up to 50 meters. This facilitates the creative use of the camera system on a Steadicam® and jib arms, the use of precision motion-controlled shooting of movie miniatures, convenient aerial and underwater shooting within highly confined spaces, and the mounting of this miniature imaging system in unusual locations where a full size camera would be restricted.

Features

- HD Digital RGB 4:4:4 acquisition
- Fiber link to CCU or SRW-1 VTR System
- D-range Enhanced (same as HDW-F900v3)
- User Gamma Capability (same as HDW-F900/3)
- Twin viewfinder output
- Selectable frame/field rate

SONY COMPACT HD

Multi-Purpose Compact HD HDC-X310 Camera

In May, 2005 Sony plans to introduce the HDC-X310 multi-purpose HD camera. The new model adds an optical fiber interface that allows cable runs to be increased more than 10 times to a maxi-

imum of 3,300 feet. The new camera can be used in a range of applications including high-definition point-of-view (POV) acquisition in stadiums, conference rooms, houses of worship, or schools.

An array of optional interface cards allow for inexpensive XGA monitoring, SD signal output to integrate with an existing SD system, and even i.LINK® IEEE-1394 (HDV) digital interface connection for HD recording on Sony's newly introduced professional HDV system.

The new HDC-X310 camera retains the core components and features of the HDC-X300. Both cameras use three 1.5-megapixel, half-inch CCDs and feature a range of scanning modes, including 59.94i, 50i, 29.97psf, 25psf and 23.976psf, with 2:3 pulldown. With a minimum illumination of 0.003 lux with slow shutter, the HDC-X300/X310 feature interchangeable lenses and slow shutter functionality (one to 64 frames.) Weighing less than three pounds with no lens, both cameras consume less than 20 watts of power. The HDC-X300/X310 cameras also share an extensive line of accessories.

SONY HDTV CAMERAS

HDC900

HDVS OB and Studio Digital Camera Head

Multi-format, multi-frame rate full size studio camera head. The HDC-900 is capable of capturing 1080 24/25/30 frame progressive or 50/60 interlace images, as well as 480 60 progressive. 720P captures requires the additional HDCU-903 line converter board that resides in the HDCU-900 Camera control unit. The HDC-900 employs a 2.2 million "square" pixel CCD imager, 12-bit AD and a two million gate VLSI for up to 34 bit processing. The HDC-900 requires either the HDVF-700A 7" monochrome CRT viewfinder or HDVF-C700W 6" LCD viewfinder. The HDCU-900 Camera Control Unit is optional.

Features

- Incorporates three 2/3-inch type 16:9 FIT CCD imagers each with 2,200,000 pixels that conform to 1920(H) x 1080(V) CIF (Common Image Format)
- 720P Conversion at the HDCU-900 with HKCU-904 Option Boards
- Can be switched to originate the Common Image Format at 24P, 25P or 30P progressive scan frame rates, or at 50i and 60i interlaced field rates
- Standard definition also available: 480/60i and 480/30P in widescreen or 4:3 mode, or 576/50i and 576/25P in 4:3 mode
- Full digital processing with 12-bit A/D converter and Advanced Digital Signal Processor (ADSP) for excellent picture quality
- Excellent signal-to-noise ratio of 54dB
- Wide dynamic range of 600 %
- High sensitivity of F10 at 2000 lx
- High horizontal resolution of 1000 TV lines
- Automatic set-up
- Five position ND filter and CC filter
- Electronic shutter function
- Clear Scan and Extended Clear Scan (in interlaced modes only)
- Three-channel Skin Tone Detail Correction

HDC910

HDVS IT Imager OB and Studio Digital Camera Head

Multi-format, multi-frame rate full size studio camera. The HDC-910 is capable of capturing 1080 line 50/60 interlace images, as well as outputting 480 60 interlace or 720P 60 (requires the HDCU-903 option board in the HDCU) The HDC-910 uses a 2.2 million "square" pixel CCD imager, 12-bit AD and a two million gate VLSI for up to 34 bit processing. The HDC-910 requires either the HDVF-700A 7" monochrome CRT viewfinder or HDVF-C700W 6" LCD viewfinder.

Features

- Incorporates three 2/3-inch type 16:9 FIT CCD imagers each with 2,200,000 pixels that conform to 1920(H) x 1080(V) CIF (Common Image Format)
- Can be switched to originate the CIF format at 50i and 60i interlaced field rates
- Standard definition also available: 480/60i in widescreen or 4:3 mode, or 576/50i and 576/25P in 4:3 mode
- Full digital processing with 12-bit A/D converter and Advanced Digital Signal Processor (ADSP) for excellent picture quality
- Excellent signal-to-noise ratio of 54dB
- Wide dynamic range of 600 percent
- High sensitivity of F10 at 2000 lx
- High horizontal resolution of 1000 TV lines
- Automatic set-up
- Five position ND filter and CC filter
- Electronic shutter function
- Clear Scan and Extended Clear Scan (in interlaced modes only)
- Three-channel Skin Tone Detail Correction



HDC930

HDVS Portable Studio, OB and EFP Digital Camera Head

Multi-format, multi-frame rate portable studio, OB and EFP camera. The HDC-930 is capable of capturing 1080 50/60 interlace images. 720P captures requires the additional HDCU-904 line converter board that resides in the HDCU-900 Camera control unit. The HDC-930 has a 2.2 million "square" pixel CCD imager, 12-bit AD and a two million gate VLSI. The HDC-930 requires a viewfinder such as the HDVF-20A B/W 2" viewfinder, the HDVF-C30W 2.7" color viewfinder or the HDVF-C750W 6" color LCD viewfinder.

Features

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High Def 4:3:1