Panasonic
ideas for life

AJ-**HDX900**
DVCPRO HD Camera-Recorder

DVCPRO HD **EX**

A Universal HD Camera-Recorder that Puts High-End Performance Within Your Reach

The AJ-HDX900 produces the high-quality HD content that's in growing demand as HD production and broadcasting continue to expand worldwide.

This new camera-recorder uses the DVCPRO HD format, with its long track record and proven reliability in broadcast use. Able to record in both the 720p and 1080i digital TV formats, the AJ-HDX900 excels in the HD production of TV programs, music and video clips, corporate video and other content for use virtually anywhere in the world.

A progressive HD CCD and 14-bit digital processing assure outstanding image quality. A new filmlike gamma curve and newly developed dynamic range stretching (DRS) function respond to high-end production needs.

The first full-size HD camera-recorder to come equipped with IEEE 1394 digital output, the AJ-HDX900 offers quick, easy linking with IT systems such as hard disk recorders.

The AJ-HDX900 is also compatible with a newly developed Remote Control Unit (RCU), for added operational and functional flexibility. Even with all of these features and performance, the AJ-HDX900 is surprisingly affordable.

As the perfect complement to the AJ-HDX900, Panasonic is making available the AJ-HD1400 compact recorder. With these two new high cost-performance units, Panasonic is offering versatile, high-quality HD production systems at a cost of SD production.
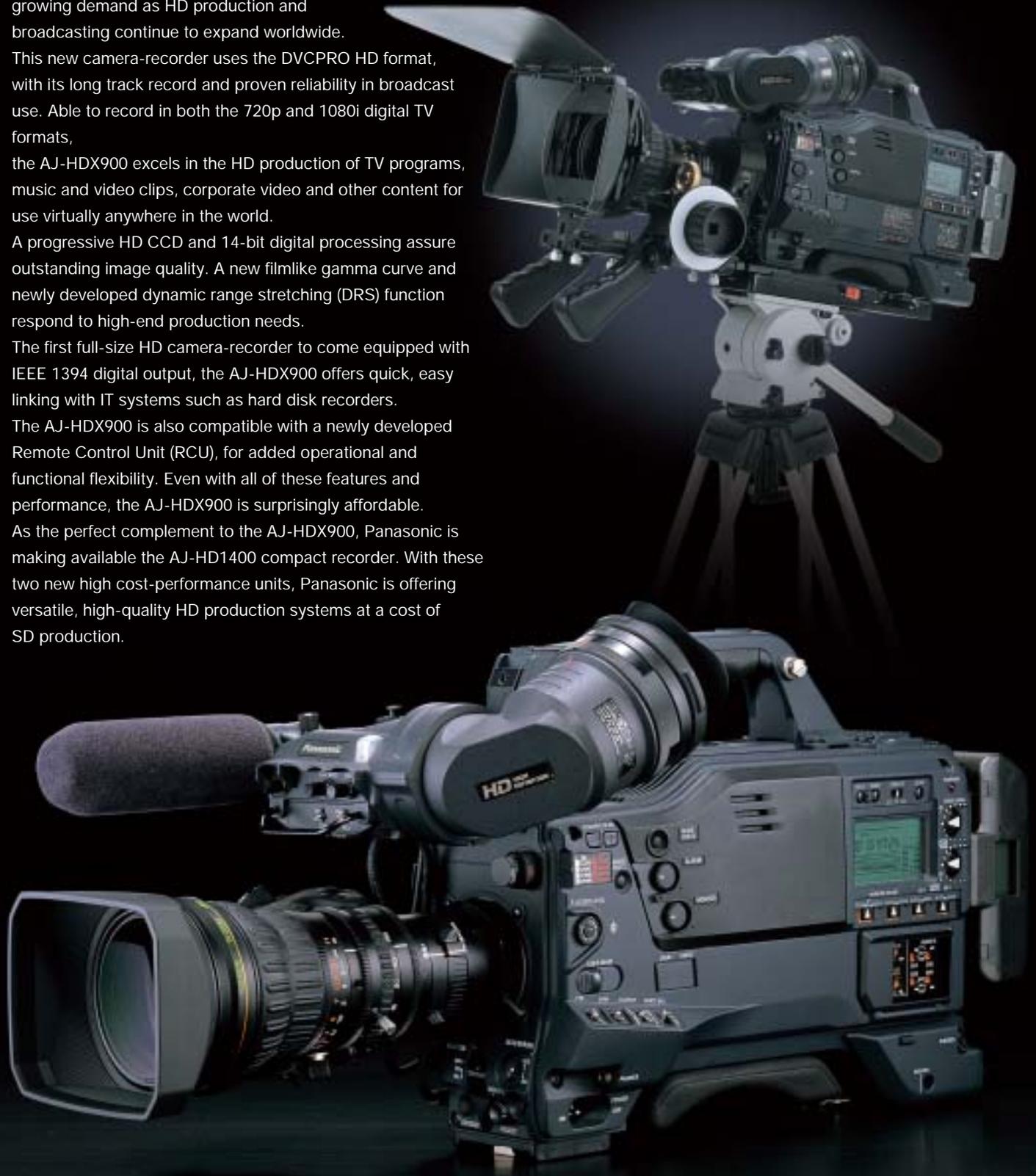
The 720p/1080i HD Multi-Format Camera

Able to record in the 11 HD formats listed below, the AJ-HDX900 can produce content for use virtually anywhere in the world. And with its versatile features, the AJ-HDX900 can be used to produce virtually any kind of HD video content — TV programs, music videos, stock footage, corporate video and much more.

Records in these HD Formats

	59.94Hz area	50Hz area
1080	1080/59.94i 1080/29.97p (over 59.94i) 1080/23.98p (over 59.94i) 1080/23.98pA (over 59.94i)	1080/50i, 1080/25p (over 50i)
720	720/59.94p, 720/29.97p (over 59.94p), 720/23.98p (over 59.94p)	720/50p, 720/25p (over 50p)

## Progressive HD CCD Provides High Sensitivity and Superior Image Quality

The 2/3" 1-million-pixel IT 3CCD system delivers superb HD imagery combined with exceptional sensitivity of F10 at 2,000 lx. The AJ-HDX900 can capture outstanding shots in lighting as low as 0.032 lx (at +62 dB gain). The native progressive video format, which drives the CCDs continuously in progressive mode, outputs high-quality HD images that are suitable for use in filmlike production or in combination with computer graphics.

14-bit Digital Conversion

In the AJ-HDX900, we offer a 14-bit A/D conversion system, an upgrade over a conventional 12-bit system. We also incorporated a new high-performance digital signal processing (DSP) circuit. The 12-axis color correction matrix lets you make fine adjustments in specific color regions. Functions such as skin detail let you further fine-tune the image.

New Filmlike 3 Gamma Curve

We also added a new Filmlike gamma mode called Filmlike 3, to the popular Filmlike 1 and Filmlike 2 gamma modes found in the AJ-SDX900 and AJ-HDX400. Filmlike 3 produces a film-like texture that makes images more emotionally expressive. This makes Filmlike 3 a good choice for certain TV programs, music and video clips, and other content.
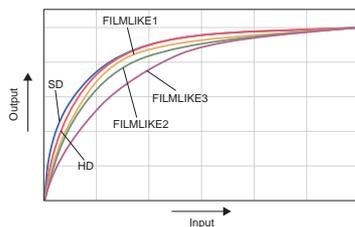
Gamma Curve

Video Gamma Image
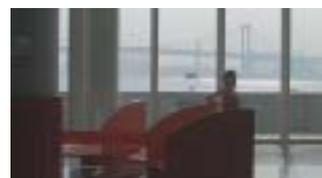
Filmlike 3 Gamma Image

DVCPRO HD: Professional Quality Pictures

Designed to broadcast specifications, the DVCPRO HD codec combines a video bit rate of 100 Mbps with 4:2:2 sampling and intra-frame compression. This reliable recording system also minimizes quality degradation with fast-moving subjects and is highly resistant to drop-out.
The DVCPRO HD-LP format allows 33 minutes of recording on a medium-size cassette with reliable 1/4" metal particle tape.

New DRS (Dynamic Range Stretching) Function

DRS further extends the auto knee function. It recognizes the average brightness of highlight and shadow areas and then automatically adjusts the aperture and uses knee control to suppress blown highlights in the shadow areas. In scenes with mixed dark and light areas, such as when moving from indoors to outdoors, DRS automatically provides a wider dynamic range with minimal blown highlights and blocked shadows with no need to manually tweak the camera for each specific condition.

DRS "OFF" Image

DRS "ON" Image

Digital Super Gain (Cumulative Mode)

The AJ-HDX900 provides an easy-to-use, pushbutton super gain function with a maximum gain of +36 dB. In addition, it introduces a new digital super gain (in cumulative mode) utilizing the variable frame rate technology of Varicam and allowing an extra gain of +20 dB (at 6 fps). Unlike conventional gain adjustment, digital super gain is virtually noise-free*, so picture quality is preserved intact. With super gain and digital super gain, the AJ-HDX900 allows ultra-high-sensitive shooting at up to +62 dB.

Nomal Gain UP Image

Digital Super Gain UP Image

*At maximum gain (+62 dB) there may be a slight amount of noise.

48-kHz/16-bit, 4-Channel Digital Audio

The AJ-HDX900 can record full 48-kHz/16-bit digital audio on all four channels. You can freely select the audio source for each channel, choosing from mic, line, wireless receiver, and others. A 5-pin XLR jack with 2-channel compatibility is used for the front mic input. Using the AJ-MC900G optional stereo microphone lets you record stereo with a single mic.

Top VTR Operation Key

Rear Side VTR Settings

Front Side Camera Setting

Rear Panel Connectors

Camera front SW

Rear Side Connectors

FUNCTIONS

User Scene Files

Store specific camera settings in built-in memory, then retrieve them when needed for quick, easy setup. Four files with settings can be stored in the camera's memory. Files can also be copied onto an SD Memory Card, allowing storage of up to eight files.

Customized User Buttons

Three user buttons are provided. Assign a function to each, and then you can select those functions with pushbutton ease. You can also customize the on-screen menu with the items you use most often, and display them by simply pressing a button. One of the three user buttons can be isolated as a USER MAIN button for easy blind-touch operation.

Prerecording Function

The AJ-HDX900 is ready to catch sudden, spontaneous scenes you might otherwise miss. When the camera is in standby mode, the prerecording function continually stores in memory up to 7 seconds (presettable) of the most recent video and audio material entering the camera. When you press the REC button, that material is recorded onto the tape before real-time recording begins.

Interval Recording and One-Shot Recording

The interval REC function records at preset intervals, which is useful in monitoring or observation applications, or when you want to create a frame-by-frame effect.
Use the One-shot REC function, which starts recording each time you press the REC button, to create claymation and other special-effect productions.

On-Screen Menu

The AJ-HDX900 features the same easy-to-use menu layout that was so popular in the AJ-SDX900. You can customize the menu and create a unique user menu that displays the items you use most often.

Electronic Shutter with "Half-Speed" and Syncro-Scan

The electronic shutter has six fixed speeds of up to 1/2000 sec, plus "Half-Speed" (180 degree) slow and synchro-scan capability.

Shutter Speed (50Hz):	1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000 sec. and Harf (180°)	
Shutter Speed (59.94Hz):	1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000 sec. and Harf (180°)	
Syncro Scan Shutter:	1/60.3 to 1/249.8 sec.	(59.94 Hz)
	1/30.2 to 1/249.8 sec.	(29.97 Hz)
	1/24.1 to 1/249.8 sec.	(23.98 Hz)
	1/50.2 to 1/209.5 sec.	(50 Hz)
	1/25.2 to 1/209.5 sec.	(25 Hz)

Lightweight, Well Balanced Body

The AJ-HDX900 offers a lightness in operation that is not entirely reflected in its 9.9-lb (4.5-kg) weight. Designed specifically to provide excellent balance while shooting, it doesn't become front-heavy when equipped with lens, battery, and wireless receiver. Camera work is comfortable because the AJ-HDX900 maintains a natural, horizontal position when held on the shoulder or lifted by the handle. The body height is also minimized to give the operator a clear view front and rear.

Designed for Ease of Operation

The position, function, and shape of all switches, dials and terminals have been designed in response to feedback from video professionals to allow quick operation and prevent errors for greater reliability.

- The Audio Rec level adjustment features a push lock function.
- The Audio Input level adjustment (front) can be switched ON/OFF and allocated to desired channels.
- The Easy-Slide Shoulder Pad can be slid with one hand, and securely locked in position.
- A 3-point locking viewfinder mount allows precise adjustment.

Power-Save Management (SAVE REC) Function

This function reduces power consumption during recording to a low 36 watts by interrupting playback-related circuits.

Enhanced Camera Functions and Specifications

- Displays a zebra pattern for contrast adjustment, auto white balance setting, and color bar output.
- One touch of the mode check button displays the camera settings for easy confirmation.
- Displays markers for 4:3 screen (side cut) indication to let you check the trimming while shooting in SD.
- ND filter (CLEAR, 1/4ND, 1/16ND, 1/64ND) and CC filter (Cross, 3200K, 4300K, 6300K).
- Rec Review function for easy checking of recorded results
- Quick response: enters standby mode about 3 seconds after the power is turned on; begins recording in about 0.5 second (2 seconds in Power Save mode).

SYSTEM

Supports the New RCU

The AJ-HDX900 comes equipped with a 10-pin RCU terminal for connecting the optional AJ-RC10G Remote Control Unit. The AJ-RC10G comes with a 10-pin multi-cable that can connect to the AJ-HDX900's down-conversion video OUT terminal for monitoring at the RCU. The AJ-RC10G provides detailed control of gamma, flare and the AJ-HDX900's versatile paint functions. The AJ-RC10G has a slot for SD memory card; you can save scene settings on a memory card for easy transfer to other cameras.

IEEE 1394 for Easy Backup

The AJ-HDX900 comes with an IEEE 1394 (6-pin) output terminal for degradation-free output of DVCPRO HD compression data in all HD formats. Data can be captured directly to a DVCPRO HD-compatible nonlinear editor.

Also, connect the AJ-HDX900 to a DVCPRO HD digital VTR (such as the AJ-HD1400 or HD1200A) or FOCUS FireStore FS-100 hard disk recorder, and you can record on the AJ-HDX900 while simultaneously making a backup copy on the connected unit.

IEEE 1394 or HD-SDI

1080i, 720p

AJ-HDX900

AJ-HD1400
for Back-up Recording
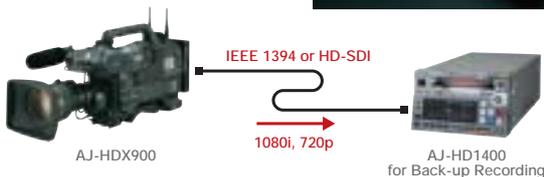
* Please refer "IEEE1394 Compatibility Table" at
<https://eww.pavc.panasonic.co.jp/pro-av/>.

HD SDI/SD Down-Conversion Output

The AJ-HDX900 comes equipped with two BNC video line outputs for flexible monitoring or line recording use.
• MON OUT: Outputs EE or VTR playback images in HD-SDI or HD-Y format
• VIDEO OUT: Switchable between HD-SDI/SD-SDI (down conversion) and analog composite (down conversion) output.

AJ-RC10G Remote Control Unit

A dedicated selector switch improves operating ease. The HD/SD down converter comes built-in. Aspect mode is selectable. Provides the high image quality needed for either monitoring or live on-air transmission.

DC Power Supply for an LCD Monitor

A 1.5-A DC output (4-pin) is provided for powering the BT-LH900 or LH900A 8.4" LCD monitor, which can serve as a viewfinder.

GPS Unit

By mounting the optional AJ-GPS900G GPS unit, the AJ-HDX900 can record real-time position data (latitude, longitude, and altitude) onto the tape, conforming to UMID standards.

* GPS unit is not available in some areas.

Other Functions

• Shading correction function that adjusts for use of a lens extender.
• Color bar (switchable between SMPTE, ARIB, and full color) and standard audio signal (1-kHz test tone) output
• Built-in SMPTE time code generator/reader, with time code In/Out terminal
• Multiple battery support, including Anton Bauer batteries
• UniSlot® wireless receiver compatible

* UniSlot® is a trademark of Ikegami Tsusinki Co., Ltd.

AJ-HVF21G
2" HD EVF
59.94Hz/50.00Hz
switchable

AJ-GPS900G
GPS Unit
*Not available in some areas.

AJ-MC900G
Stereo Microphone
(5-pin)

AJ-MH800G
Microphone Holder

SHAN-TM700
Tripod Adapter

SD Memory Card

Anton/Bauer Ultra Light

FireStore FS-100
Portable DTE Recorder
(FOCUS Enhancements, Inc.)

Anton/Bauer
Battery Charger Package
HTP-T230

Anton/Bauer
Dionic Batery

Anton/Bauer
Battery Charger

Anton/Bauer
TITAN70 AC Adaptor/
Battery Charger

AJ-SC900
Soft Carrying Case
*Not available in some areas.

AJ-HT901G
Hard Carrying Case
*Not available in some areas.

SHAN-RC700
Rain Cover
*Not available in some areas.

AJ-RC10G
RCU (Remote Control Unit)
• 10P Remote Cable 10m

BT-LH900A 8.4" HD/SD LCD monitor
BT-LH1700W 17"Wide HD/SD LCD monitor
BT-LH2600W 26"Wide HD/SD LCD monitor

AJ-HD1400
DVCPRO HD Recorder
• Equipped with IEEE 1394 and HD-SDI

Microphone (Phantom +48)
AJ-MH800G Microphone Holder
Anton/Bauer Ultra Light
AJ-GPS900G GPS Unit *not available in some areas.
UniSlot® Wireless Mic Receiver
BNC cable (HD-SDI)
4-pin DC cable
BT-LH900A 8.4" LCD Monitor
AJ-MC900G Microphone Kit
AJ-HVF21G 2.0" HD EVF
2/3" HD Lens
AJ-HDX900
Anton/Bauer Gold Mount Plate
Anton/Bauer Batteries
Anton/Bauer Battery Charger
DC Cable (XLR)
AC Adapter
IEEE 1394 cable
Fire Store FS-100 Portable DTE Recorder
SD Memory Card
AJ-HT901 Hard Carrying Case
Shoulder Strap
SHAN-TM700 Tripod Adapter
SHAN-RC700 Rain Cover
AJ-SC900 Soft Carrying Case (not available in some area)
Tripod
10-pin Remote Cable
AJ-RC10G Remote Control Unit
*Down Convert SD BNC Cable
Picture Monitor BT-LH900A BT-LH1700W BT-LH2600W
SD Memory Card
■ Standard Accessories

SPECIFICATIONS

General

Power Supply:	DC 12 V (11 V to 17 V)
Power Consumption:	36 W
Operating Humidity:	10 % to 85 %
Operating Temperature:	32°F to 104°F (0°C to +40°C)
Dimensions : (W x H x D)	5-1/16" x 10-11/16" x 13" (129 x 271 x 329 mm)
Weight:	About 9.9 bs (4.5 kg) About 16.7 lbs (7.6 kg) in full-operation
Continuous Rec Time:	About 120 min. with Anton/Bauer Dionic 90

Camera Section

CCD Elements:	2/3″ HD Progressive CCD
Picture Elements:	Total: 1370 (H) x 744 (V), Effective: 1280 (H) x 720(V)
Optical System:	F 1.4 prism system
Optical Filters:	CC: Cross, 3200K, 4300K, 6300K ND: CLEAR, 1/4ND, 1/16ND, 1/64ND
Quantization:	14 bits
Sampling Frequency:	74.1758MHz (59.94Hz), 74.25MHz (50Hz)
Programmable Gain:	−3/0/+3/+6/+9/+12/+15/+18/+21/+24/+27/+30 dB
Super Gain:	+30/+36 dB
Digital Super Gain:	+6/+10/+12/+15/+20 dB
Line Mix Gain:	+6 dB (On/Off)
Shutter Speed:	1/60 (50Hz), 1/100 (59.94Hz), 1/120, 1/250, 1/500, 1/1000, 1/2000 sec. and HALF
Syncro Scan Shutter:	1/60.3 to 1/249.8 sec. (59.94i, 59.94p) 1/30.2 to 1/249.8 sec. (29.97p) 1/24.1 to 1/249.8 sec. (23.98p, 23.98pA) 1/50.2 to 1/209.5 sec. (50i, 50p) 1/25.2 to 1/209.5 sec. (25p)
Sensitivity:	F10 at 2000 lx, 89.9% reflect
Minimum Illumination:	0.032 lx at +36 dB +20 dB +6 dB Gain
Video S/N:	54 dB (typical)
Horizontal Resolution:	700 TV lines at centre
Registration Error:	Less than 0.03 % (whole zone, without lens distortion)
Lens Mount:	2/3" Bayonet type

VTR Section

Recording Fromat:	DVCPRO HD-LP
Tape:	6.35 mm wide metal tape (DVCPRO HD M cassette)
Tape Speed:	67.640 mm/s (59.94Hz), 67.708 mm/s (50Hz)
Max Rec Time:	Approx. 33 min (using AJ-HP33EMG)
FF/REW Time:	About 1.5 min. (using AJ-HP33EMG)

Video

Sampling Frequency:	Y: 74.1758 MHz (59.94Hz), 74.25MHz (50Hz) PB/PR: 37.0879 MHz (59.94Hz), 37.125 MHz (50Hz)
Quantization:	8 bits

Compression Method:	DCT and Variable-length Coding
Compression Ratio:	1/6.3 (1080-50i/1080-25p), 1/6.7 (others)
Error Correction:	Reed Solomon Product Code
Bit Rate:	100 Mbps
Band Width:	Y: 20MHz, PB/PR: 10MHz

Audio

Sampling Frequency:	48 kHz (sync. with video)
Quantization:	16 bits
Frequency Response:	20 Hz to 20 kHz, ±1.0 dB (reference level)
Dynamic Range:	More than 85 dB (1kHz, AWTD)
Distortion:	Within 0.1% (1 kHz, reference level)
Wow & Flutter:	Below measurable limit
Head Room:	20 dB (AJ-HDX900P), 18 dB (AJ-HDX900E)

Input

MIC In:	XLR-5pin x 1, Stereo, −40/−50 dBu, Phantom +48 V
Audio In:	XLR-3pin x 2 (CH1/CH2), LINE/MIC/MIC+48 V switchable LINE: −3/0/+4 dBu, MIC: −60/−50 dBu, MIC+48V: −60/−50 dBu,
Wireless In:	25pin D-sub, −40 dBu
Genlock In:	BNC x 1, 1.0 Vp-p, 75Ω
Timecode In:	BNC x 1, 0.5 to 7.0 Vp-p, high impedance

Output

Video Out:	BNC x 1, HD-SDI/SD-SDI/Compsite switchable HD-SDI/SD-SDI: 0.8 Vp-p, 75Ω Composite: 1.0 Vp-p, 75Ω
Monitor Out:	BNC x 1, HD-SDI/HD-Y switchable HD-SDI: 0.8Vp-p, 75Ω, HD-Y: 1.0Vp-p, 75Ω
Audio Out:	XLR-5pin x 1, CH1/CH2, −3/0/+4 dBu
Timecode Out:	BNC x 1, 2.0 Vp-p, low impedance
Phones:	Stereo mini jack x 2

Others

Lens:	12-pin x 1
Remote:	10-pin x 1, for AJ-RC10G
DC In:	XLR-4pin, DC11V to 17 V
DC Out:	4-pin x 1, DC11V to 17 V, max. 1.5 A
EVF:	20-pin x 1 (59.94Hz/50Hz switchable)
DVCPRO:	6-pin x 1, IEEE 1394 standard digital Interface
GPS:	6-pin x 1, for AJ-GPS900G
Receiver :	UniSlot® Wireless Receiver

*DVCPRO HD-LP tapes recorded with the AJ-HDX900 cannot be played on a conventional DVCPRO HD VTR (AJ-HD150/AJ-HD130DC).
*UniSlot® is a trademark of Ikegami Tsusinki Co., Ltd.

Panasonic®

[Countries and Regions]

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Austria	+43 (0)1 610 80 773	Malaysia	+60 3 5549 5422 (PSE)	Switzerland	+41 (0)41 259 96 32
Bahrain	+973 252292		+60 3 5546 7000 (PM)	Taiwan	+886 2 2725 9100
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ISO 9001
JQA-0443

ISO 14001
JACO
UKAS ENVIRONMENTAL MANAGEMENT 051

Factories of Systems Business Group have received ISO14001:2004-the Environmental Management System certification.

SP-HDX900PE1

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