

Panasonic
ideas for life

AG-HPX170 series

Memory Card Camera-Recorder
(AG-HPX172/AG-HPX173/AG-HPX174)

P2HD



DVCPRO HD

DVCPRO 50

DVCPRO

DX

Lightest P2 HD Model Brings Even Greater Mobility A Handheld Camcorder with 28mm Wide-Angle Lens, Superb Image Quality and

The AG-HPX170 series is the lightest member of the P2 Series of camcorders that have revolutionized news gathering and video production. Thanks to an exclusive, P2 card recording design, the AG-HPX170 series weighs in at only 1.9 kg, assuring exceptional mobility.

The AG-HPX170 series has a camera section that features a 28mm wide-angle zoom lens — widest in the class — plus a 1/3-inch 16:9 progressive CCD that provides low-noise, low-smear performance. These high-end features combine with use of the DVCPRO HD codec, with its proven track record in broadcasting, to provide exceptional HD recording quality.

The AG-HPX170 series offers a host of advanced features. Two P2 card slots allow hot swapping for extended recording. Pre-rec and loop-rec functions help ensure that you never miss an important shooting opportunity. There is also 20-step variable frame rate selection, HD-SDI output for uncompressed streaming output, and a waveform monitor/vector scope for outdoor recording convenience. With its superb recording quality, impressive feature set and exceptional mobility, the AG-HPX170 series is an agile, powerful solution to today's broadcasting and image production needs.



Ability to Video production and News Gathering

Advanced Functions



Compact, Lightweight and Perfectly Balanced

- 28mm wide-angle zoom lens – widest in the class*

- Progressive CCD with low noise and low smear

- 20-step variable frame rate selection

- Comes equipped for HD-SDI output

- Waveform Monitoring, vector scope and histogram display



At 1.9kg, the super-compact AG-HPX170 series is the lightest member of the P2 family. It combines small size and light weight with an ideal balance -

the center of gravity is in the hand grip – to bring exceptional comfort and maneuverability to handheld recording.

The zoom lens further enhances shooting ease and convenience, letting the AG-HPX170 series handle a wide range of applications without requiring a conversion lens.

*HD camcorders with integrated lens and 1/3-inch CCD, as of September 2009 (according to a Panasonic survey)

P2 Memory Card Recorder: Lower Operating Costs, Better for the Environment

P2 Reduces Total Cost of Ownership

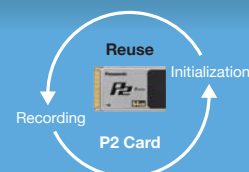
- (1) Faster, easier editing because digitization is not necessary
- (2) Lower media costs because memory cards are reusable
- (3) Lower maintenance costs because there is no moving mechanism

Reducing editing, media and maintenance costs, P2 can help improve your bottom line. Users can also take advantage of a special five-year free-repair service program that Panasonic offers for P2 HD equipment.



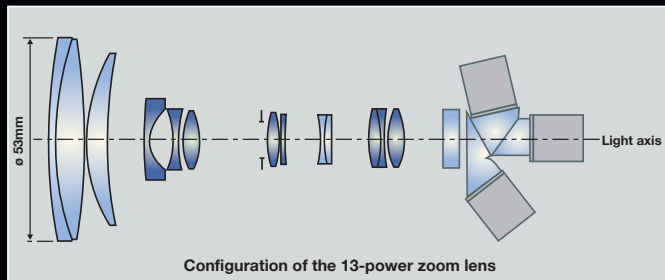
The P2 Card Helps Preserve the Environment: Repeated Reusability and Low Power Consumption

Allowing repeated file copying and initialization, a single P2 card can be used and re-used, again and again. When combined with an IT-based workflow that requires no dubbing, P2 cards can greatly reduce storage media expenses.





28mm Wide-Angle, 13x Zoom Leica Dicomar® HD Lens



The wide-angle zoom lens that gained high popularity in the HVX200 Series has been reduced in size, lightened, and further widened in this 13x zoom lens. The lens structure combines 13 lens elements in 10 groups, with 3 aspherical lenses. The diameter of the front lens element has been reduced from 67 to 53.2 mm, while still achieving a 28mm wide angle (35mm equivalent), the widest of the class.*

The new lens covers most shooting situations without requiring a wide-angle conversion lens. Its minimum object distance (MOD) of about 0.6 meter at the telephoto setting helps to maximize the handheld camcorder's inherent mobility.

The same cam-driven zoom ring that was so popular in previous models ensures accurate zooming. The Leica Dicomar lens incorporates Leica optical technology and know-how throughout. A multi-coating process minimizes flare and ghosting. This results in sharp, crisp, beautifully rendered images with delicate nuances and exceptional shading.

*HD camcorders with integrated lens and 1/3-inch CCD, as of September 2009 (according to a Panasonic survey)



Image of an angle of view equivalent to 31.4 mm



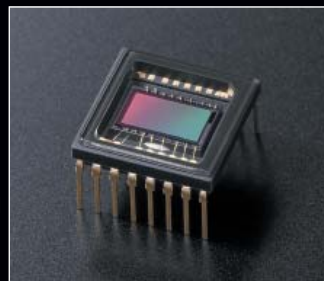
Image of an angle of view equivalent to 28 mm

Optical Image Stabilizer (OIS)

Panasonic's advanced OIS dramatically reduces the blurring caused by hand-held camera work. Optical processing with an automatic correction function helps assure consistently clear, sharp images.

Progressive CCD Raises Sensitivity and Lowers Noise and Smear

The 1/3-inch 16:9 progressive CCD on the AG-HPX170 series further raises image quality. It combines a significantly improved S/N ratio and better low-light performance than previous models. Backed by a high-performance digital signal processor, the CCD brings higher quality to HD images to meet the demands of broadcasters and high-end video producers.



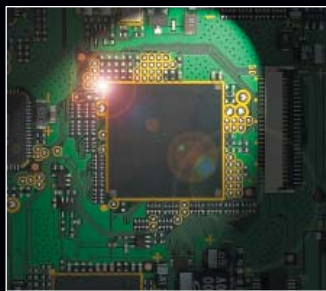
High-Resolution Native Progressive 1080/50p Scan

Progressive to interlace conversion, cross conversion and down conversion all start with the 1080/50p scan. That initial 1080p native progressive scan offers the highest level of vertical resolution possible at this level of camera. Keep in mind that the camera does not record this signal but uses it as a basis for all captures. The result is an HD or SD recording with a level of image quality that cannot be matched by electronically processed scans.

Wide, High-Quality Images with High Sensitivity from Advanced Optical System and High-Performance DSP

DSP with 14-Bit A/D Conversion and 19-Bit Processing

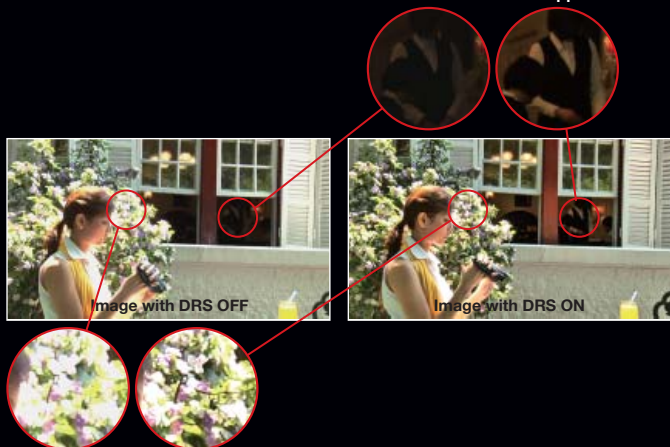
The digital signal processor developed for the AG-HPX170 series's video signals uses 14-bit A/D conversion and 19-bit inner processing to attain unprecedented accuracy. The DSP performs a variety of adjustments, including seven types of gamma settings, for each of the R, G and B channels. It also converts the signals to HD or SD format. With a performance equivalent to the processors used in many higher-end HD cameras, this DSP delivers beautiful images in all video formats.



Dynamic Range Stretch (DRS)

In scenes with mixed contrast, such as when panning from indoors to outdoors, the DRS function automatically suppresses blocked shadows and blown highlights. A gamma curve and knee slope is estimated to match the contrast of each pixel, and applied in real time. When dark, bright, and intermediate shades are all contained in the same scene, this produces excellent gradation for each shade and minimizes blocked shadows and blown highlights. The images that result are enhanced by a visually wide dynamic range.

Blocked shadows are suppressed.



Blown highlights are suppressed.

7-Mode Gamma for Richer Gradation

Drawing on technologies developed for the VariCam, Panasonic has equipped the AG-HPX170 series with advanced gamma functions that address seven different shooting scenarios and enhance your creative abilities. This includes the Cine-Like Gamma, which produces the characteristic warm tone of film recordings.



HD NORM Mode

CINE-LIKE D Mode

AG-HPX170 series Gamma Modes

HD NORM:	Suitable for HD recording
LOW:	Works to flatten out a high contrast scene
SD NORM:	Normal setting for SD (this was available in the DVX100 series)
HIGH:	Provides more contrast and color gradation
B.PRESS:	Provides more contrast and blacks in low contrast scenes
CINE-LIKE D:	The Cine-Like mode shifted to prioritize dynamic range
CINE-LIKE V:	The Cine-Like mode shifted to prioritize contrast

Advanced Image Adjustments Built-In

- Matrix setting including a Cine-Like mode
- Adjustable H detail level, V detail level, detail coring and skin detail
- Adjustable chroma level, chroma phase, color temp and master pedestal
- Knee point settings: Auto, Low, Mid and High
- Scene Files and User files can be saved to an SD Memory Card and shared with other cameras.





Production Quality DVCPRO HD, DVCPRO50 and DVCPRO, and Multi-Codec Recording

The AG-HPX170 series records HD video with outstanding image and audio quality onto a P2 card with the DVCPRO HD codec. This codec, thanks to a low compression ratio at a video bit rate of approximately 100 Mbps (1080/50i, 720/50p) and the easy-to-edit intraframe compression system, is suitable for recording fast-moving subjects with no motion artifacts other than motion blur. The 4:2:2 sampling rate minimizes jaggies at chroma edges. Sound quality is excellent too, thanks to uncompressed 16-bit, 4-channel digital audio recording capability. The AG-HPX170 series can record in 1080/25p or 720/25p HD, and it's compatible with the SD (576i) format. The multi-codec system allows you to record in DVCPRO HD, DVCPRO50, DVCPRO or DV.

Recording Video Format	Codec	Recording Time when using two P2 Cards	
		32GB	64GB
1080/50i, 1080/25p (over 50i) 720/50p, 720/25p (over 50p)	DVCPRO HD	64 minutes	128 minutes
720/25pN (Native)*		128 minutes	256 minutes
576/50i, 576/25p (over 50i)	DVCPRO 50	128 minutes	256 minutes
	DVCPRO/DV	256 minutes	512 minutes

* In the Native mode, AG-HPX170 series records only active frames.

Large-Capacity P2 Cards – Compact, Speedy and Reliable



The P2 card offers a large capacity of up to 64GB*1 in a small and light weight package. Its rugged design withstands even harsh professional use. It is highly resistant to temperature fluctuations, dust, impact and vibrations, and is free of the problems that are common in tapes, such as condensation, head clogging and dropouts. The P2 card promises solid reliability and excellent mobility under the often difficult conditions of field recording. Because data is automatically recorded in blank card spaces, there is no need for cueing and the risk of accidentally overwriting valuable data is eliminated. The newly released, low-cost E series*2 (AJ-P2E016XG/ AJ-P2E032XG/AJ-P2E064XG) provides a new level of lower cost recording capability for those customers budgetary concerns.

*1: Total card capacity includes space for data management, such as system data; therefore, actual usable area is less than the capacity indicated on the card.

*2: When using the P2 card E Series, software updates are necessary for certain P2 devices. For details, visit the Panasonic website at <https://www.pavc.panasonic.co.jp/pro-av/>.

*Advanced P2HD
Boosts Reliability and
Gets Your Finger
to the Record Button Faster*

Immediate Startup and Better Data Protection

When you press the Record button in standby mode, the AG-HPX170 series instantly finds a blank area on the P2 card and begins recording. It can begin recording immediately even when you're using it to preview video. In normal use, there is no chance of accidentally overwriting a recording. Recordings will not be erased unless you intentionally delete a file or initialize the card.

Clip Thumbnail and Metadata Functions



The P2 cam records each recording as a clip (file) and automatically attaches a thumbnail image and file information to it. To preview a clip on the LCD monitor or to check clip data, simply choose the clip you want from the list of thumbnails. It also supports metadata input using a new software keyboard.

Hot-Swap Recording and Other Versatile Functions

- Hot-swap recording:** Thanks to the two card slots, you can hot-swap P2 cards for continuous non-stop recording. With multiple cards you can record for hours without interruption.
- Pre-rec:** While in standby mode, you can continuously store, and subsequently record, up to 3 seconds in HD (7 seconds in SD). This will help to get your shot every time.
- Last clip delete:** Only the most recently recorded clip is deleted with this one-touch function, adding practical convenience to everyday operation. It can be assigned as a User button function if desired.
- Rec check:** You can check the end of the most recently recorded clip with one-touch ease.

Shot Marker and Text Memo

A shot mark, which allows convenient OK and NG marking, can be added to each clip during or after recording. When a P2 card with marked clips is inserted in a PC,* it's possible to have only the marked clips displayed. The AG-HPX170 series also has a text memo function. When recording or previewing a clip, press the Text Memo button at any of up to 100 locations and a blank text memo label is registered.

*This function requires P2 viewer or P2CMS software for Windows PC or Mac computers, which P2 users can download for free. Visit <https://www.pavc.panasonic.co.jp/pro-av/> and click "P2 Support and Download."

Versatile Recording Modes Handle Various Situations

- Loop recording:** Using two P2 cards and setting the AG-HPX170 series for consecutive overwriting, you can repeatedly re-record during a particular recurring time slot, always maintaining a recording of the most recent period. Unlike video tape, P2 cards need no rewinding. They minimize wasted time and allow seamless, continuous recording. This makes them especially useful for unattended monitoring.
- One-shot rec:** Convenient for producing animation, this mode records for a set time (from 1 frame to 1 second) each time you press the Start button.
- Interval rec:** Recording one frame at a time at set intervals (from 2 frames to 10 min.), this mode is useful for monitoring and special ultra-undercranking effects.
- Time stamp:** The date and time can be stamped onto recorded images. Commonly used for evidential images.



Time stamp

4-Channel Uncompressed PCM Audio

You can record 4 channels of uncompressed, high-quality, 16-bit digital audio. In addition to the built-in stereo microphone, the AG-HPX170 series is equipped with two XLR audio input terminals with 48-V phantom power for professional use. Both input 1 and input 2 can be switched between line and mic levels. A switch lets you select built-in mic, input 1, or input 2 for the audio input of both channel-1 and channel-2. Large dials make it easy to manually adjust the levels.

SMPTE Time-Code Generator/Reader

The built-in SMPTE time-code generator/reader lets you select the Drop Frame/Non-Drop Frame and Free Run/Rec Run modes, preset and regenerate, User bits are also provided.





20-Step Variable Frame Rate

Panasonic's VariCam — named for its ground-breaking variable frame rate capability — is widely used in the production of movies, TV programs and commercials. The first application of the variable frame rate function to a handheld camera came with the AG-HVX200 series, and proved extremely popular. It has now been further expanded to 20-step selection* in the AG-HPX170 series. In 720p mode*, the AG-HPX170 series allows the undercranking and overcranking that are used with film cameras to create fast-motion and slow-motion effects.

*In 1080 and 576 modes, the frame rate can be set only to 25p.

•Normal cinematic shooting (at 25 fps) refers to the same rate as used in film cameras. The AG-HPX170 series can record in 1080/25p (over 50i) or 576/25p (over 50i) mode, as well as 720/25p mode. 25 fps is the standard frame rate used in the production of TV commercials, music clips and video software.



•Higher-speed shooting (at over 26 fps*) produces slow-motion effects.

This is especially effective for high-action scenes like car chases or crashes, or to create a dramatic impact in a scene.

*When the standard speed is 25fps mode, anything over 26 fps will be overcranked.



•Lower-speed shooting (at under 24 fps*) lets you attain a fast-motion effect. This technique can be combined with a warp-speed effect to give special emphasis to flowing water, fast-moving clouds, etc.

*When the standard speed is 25 fps, anything under 24 fps will be undercranked.



720p Native Mode

In Native mode, the AG-HPX170 series records images at the frame rate set in the camera. For example in 25p mode, it only records 25 frames instead of the normal 50 frames. Using the AG-HPX170 series to play back the recording at the normal rate, you can preview the speed effect right on the spot, without using a frame rate converter. Native mode also extends the recording time of a P2 card.

720p over 50p Mode

For example, in 25p mode it records 50 frames by applying a 2:2 pulldown. The recording time is the same as in 1080i or 720p mode, but the unit can output a DVCPRO HD stream from the IEEE 1394 connector as it records. This lets you produce a backup copy using a connected external DVCPRO HD recorder or P2 recorder such as P2 mobile, P2 portable or P2 gear.

*VariCam Style Expression
with Expanded, 20-Step
Variable Frame Rate Selection*

Framerate	12p	15p	18p	20p	21p	22p	23p	24p	25p	26p	27p	28p	30p	32p	34p	37p	42p	45p	48p	50p
Effect of 25p standard	208%	167%	139%	125%	119%	114%	109%	104%	100%	96%	93%	89%	83%	78%	74%	68%	60%	56%	52%	50%
	(Quick)								(Standard)	(Slow)										

1080/576 25p Shooting Mode

The 1080 and 576 progressive recording systems convert recordings to 50i in 25p shooting mode. The 25p shooting mode uses 2:2 pulldown and performs 25p/50i conversion with minimum image degradation when recording data is uploaded via an IEEE 1394 interface to a compatible nonlinear editing system. This lets you maintain superior image quality throughout the production process.

16:9/4:3 Aspect Ratio Conversion

The 16:9/4:3 Conversion mode can be used with SD-recorded images or SD output down-converted from HD playback. You can select from three modes: side crop, letterbox, and squeeze.



Side crop

Letter box

Squeeze

Slow, Synchro and High-Speed Shutter

Used with the variable frame rate function, this allows you to create a blurring effect or crystal-clear stop motion sports action. The AG-HPX170 series also features a synchro scan function that's suitable for capturing screen shots from a computer monitor.



Shown above is a sample of operation styles.



Superb Mobility for Low-Angle Shots and Interviews

- The 1.9kg weight (lowest in the class) and comfortable weight balance provide highly stable handheld shooting, while the magnesium alloy diecast chassis boosts ruggedness and durability.
- The upper part of the handle grip contains both the Rec Start/ Stop button and a lens zoom speed control (three speed). This design assures easy shooting even at low angles.
- The new LCD monitor mirror mode is convenient when shooting interviews.



13x Cam-Driven Optical Zoom and 10x Digital Zoom

The cam-driven (mechanical) manual zoom ring provides the same fast, precise zooming and feeling as cameras with interchangeable lenses. The servo-driven zoom also allows slow zooming. The AG-HPX170 series is equipped with a digital zoom* that instantly magnifies the image by any of three fixed values – 2x, 5x or 10x. Use it together with the 13x optical zoom lens, and you get super-telephoto magnification equivalent to a 130x zoom, without the drop in light intensity that happens when using a lens extender.

* The image quality decreases as the digital zoom magnification increases.



Standard

13x optical zoom

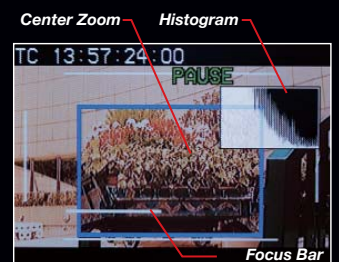
13x optical zoom x
10x digital zoom (130x)

Manual Focus and Aperture Control

The manual focus ring, which gives you a level of operating ease that approaches an interchangeable lens, can be used to control the aperture too, by switching the Ring (Focus/Iris) selector. You can also add backlight correction or spotlight correction to the auto aperture function.

Focus Assist and Other Functions

A focus assist function with HD compatibility has also been added to the AG-HPX170 series. This is in addition to a center zoom function that enlarges the center of the frame, and a histogram display. You can select from three display modes: center zoom, histogram, or combined center zoom and histogram. A focus bar display further helps to speed up focusing by indicating the level of focus by the length of the bar. An Electric View Finder (EVF) DTL (de.tail) button has also been added that lets you emphasize the outline of the image in either the EVF or the LCD monitor for easier viewing.

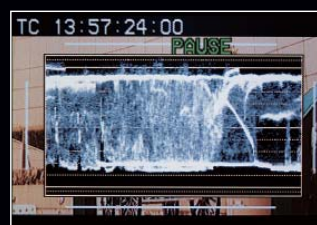


Focus assist ON (BOTH Mode)

A focus bar display further helps to speed up focusing by indicating the level of focus by the length of the bar. An Electric View Finder (EVF) DTL (de.tail) button has also been added that lets you emphasize the outline of the image in either the EVF or the LCD monitor for easier viewing.

Simplified Waveform and Vectorscope Display

The AG-HPX170 series has waveform and vectorscope display functions as well. A single touch of the Waveform Monitoring (WFM) key displays the waveform and vectors of the captured video signal on the LCD monitor.



Waveform Monitoring (WFM)



VECTOR (Vector scope)

*Excellent Operation,
Versatile Assist Functions,
and System Functions for
Broadcasting Work*

Gain Selector and ND Filter

The gain selector has three positions: L is fixed at 0 dB; and M and H can be set to 0, +3, +6, +9, or +12 dB. +18dB can also be accessed as a User button function. Three ND filters (1/4 ND, 1/16 ND, 1/64 ND) are built-in.

Three User Buttons

The AG-HPX170 series allows 16 functions (listed below) to be assigned to the User buttons. The three buttons are arranged in a group for easy use. Assigned functions can be accessed at the touch of a button.

Assignable Functions

REC CHECK:	Rec check function
SPOTLIGHT:	Spotlight compensation
BACKLIGHT:	Backlight compensation
BLACKFADE:	Black fade in/out
WHITEFADE:	White fade in/out
ATW:	Auto tracking white balance
ATW LOCK:	ATW lock function
GAIN 18dB:	+18dB gain up
D. ZOOM:	Digital zoom (x2/x5/x10)
TEXT MEMO:	Add a text memo
SHOT MARK:	Add a shot mark
LVL METER:	Switch audio level meters (Ch1 & 2/Ch3 & 4)
LAST CLIP:	Delete a last clip
PRE REC:	Pre-rec function
F.RATE+:	Frame rate up
F.RATE-:	Frame rate down

Scene File Dial

Set this dial for a set of shooting conditions instantly. Six preset files are provided, and you can change any of the six file names and their settings as desired.

You can also store and load the settings to an SD card.

File Description

F1: —	Standard settings
F2: FLUO.	Indoor shooting under fluorescent lights
F3: SPARK	Highlighting subjects at receptions, dinners etc.
F4: B-STR	Enhanced gradations of luminance in low light scenes
F5: CINE V	Cine-Like setting shifted to prioritize contrast
F6: CINE D	Cine-Like setting shifted to prioritize dynamic range

Support Functions for Greater Convenience

- **White balance:** Three values (A/B/Presets) of white balance with the auto tracking white function.
- **Mode check:** Displays a list of the camera settings on the viewfinder and LCD monitor.
- **Zebra:** Select any two levels from among 50% to 105%, in 5% steps.
- **Center marker:** Provides an accurate numeric display of the brightness at screen center.

Standard HD-SDI Output

An SDI (HD/SD) output terminal enables serial transfer of uncompressed video and audio data. In addition to its use in ordinary digital broadcasting environments, it also allows synchronized recording with a Panasonic digital recorder (P2 HD/HD-D5/DVCPRO HD/AVCHD).

USB 2.0 and IEEE 1394 PC Interfaces

- The USB 2.0 interface lets you transfer P2 files to a Windows PC for use with a nonlinear editing system.
- The IEEE 1394 (6-pin) port supports SBP2 (Serial Bus Protocol 2) and allows direct connection to a Mac, making it easy to transfer P2 files into nonlinear editing system. It also allows synchronized recording with a DVCPRO HD VTR and file transfers to an external hard disk drive.

*Neither operates with bus power.

*PCs must have the P2 driver installed in order to mount P2 cards. For editing, PCs must have P2 compatible editing software installed. Read "Notes Regarding the Handling of P2 Files Using a PC" on the back page.

*For information on compatible nonlinear editing systems, visit <https://www.pavc.panasonic.co.jp/pro-av/> and click "Nonlinear Compatibility Information." For the operating requirements and other details of editing software, visit the web site of the relevant software manufacturer.

TC Set and User File Copy with Multi-Cameras

Connecting two AG-HPX170 series cameras with an IEEE 1394 cable allows the slave camera to synchronize with the master camera which enables time-code-matched editing with multiple cameras for "TC synchro editing".



Other Professional Features and Interfaces

- **Tally lamps:** Provided on the unit's front and rear.
- **Remote:** Controls zoom, rec, focus and aperture.
- **D-4 out:** The analog component output lets you preview on an ordinary HD/SD TV monitor.
- **XLR audio input:** 2-channel mic/line inputs supporting 48V phantom power supply.



Versatile Operating Style

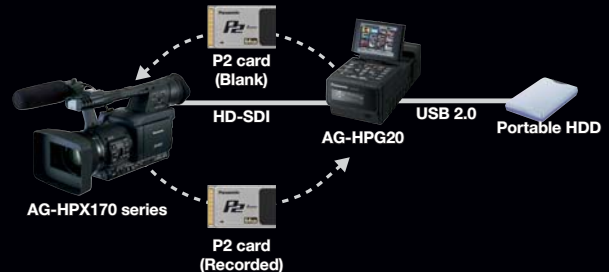
Acquisition and On-site Storage

The AG-HPG20 P2 Portable Recorder enables easy on-site viewing, backup recording and card-to-card and card-to-HDD file copying. The AJ-HRW10G Rapid Writer can transfer the data files easily and rapidly from P2 cards to the internal HDD in the field.



Using a Windows PC or a Mac with P2 Viewer or P2 CMS, it is possible to view files, display properties, perform simple editing, create metadata, edit voice and text memo and copy files*.

* For details, see the rear cover page (Notes Regarding the Handling of P2 Files Using a PC)



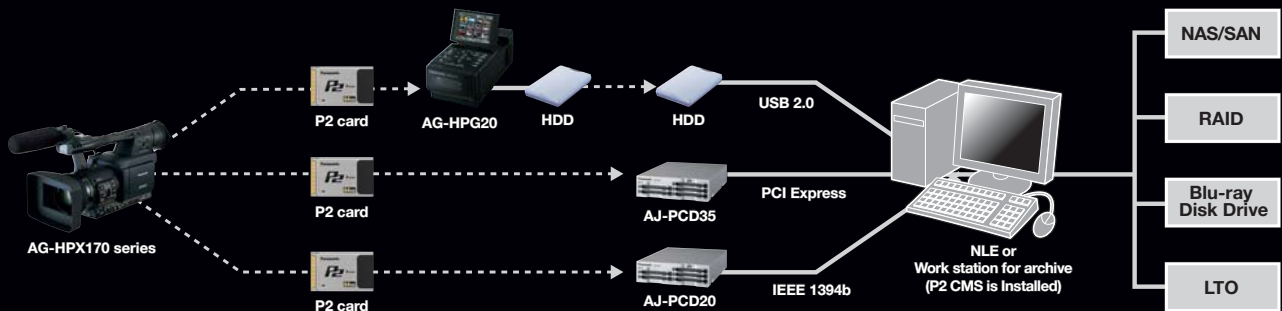
Editing, Production and Archiving

The AJ-PCD35 or AJ-PCD20 P2 drive, and the AG-HPG20 let you use P2 cards in nonlinear editing systems, and HDD units let you use HDD data in the same way*1. There is no need for digitizing, so files can be used immediately as clips. P2 CMS content management software lets you copy P2 files to an HDD while automatically creating a metadata-tagged database to

simplify operations ranging from searching and sorting to file copying, backup and archiving. This makes it easy to backup or archive files onto optical media.*2

*1: For details, see the rear cover page (Notes Regarding the Handling of P2 Files Using a PC)

*2: Cannot be used with some types of nonlinear editing systems, PCs, and software.)



Matches SDI Environments for Both Broadcasting and Production

The AG-HPX170 series comes with a standard HD/SD-SDI output terminal for the serial digital interface in most broadcast studios and high-end image production environments. This also allows it to be used as a compact live broadcast camera.

*Synchronized input is not supported.



Compatibility with Nonlinear Editing Systems

In developing P2 products, Panasonic has been working in collaboration with a number of strategic P2 Partners. There are many nonlinear editing products in the market which have already supported DVCPRO HD-P2 and so many P2 customers are using such editing systems. P2-based DVCPRO HD native editing makes it possible for you to keep high quality video and flexible editing workflow.*

* For information on compatible nonlinear editing systems, visit <<https://www.pavc.panasonic.co.jp/pro-av/>> and click "Nonlinear Compatibility Information." For the operating requirements and other details of editing software, visit the website of the relevant software manufacturer.



Optional Accessories (As of September 2009)



AG-MC200G

XLR microphone

•Sensitivity: •40 ±3.5 dB (0 dB=1V/Pa, 1KHz)
•Maximum Input level: 127 dB (1000Hz,
Distortion within 1%) •S/N: More than 69 dB



CGA-D54

Battery Pack (5,400 mAh)



AG-B25

AC adapter kit



AJ-P2C064AG

AJ-P2C032AG

AJ-P2C016AG

Memory Card (P2 card A series)



AJ-P2E064XG NEW

AJ-P2E032XG NEW

AJ-P2E016XG NEW

Memory Card (P2 card E series*)

* P2 card E series may require to update the software of P2 equipment. please go to the P2 support page from the Panasonic web page <https://www.pavc.panasonic.co.jp/pro-av/>



SD/SDHC memory card



AJ-PCD35

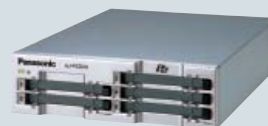
Memory Card Drive

"P2 drive" *

(Interface: PCI-Express)

* Before using P2 card E series, you must install the latest version of the software in the AJ-PCD35.

For the latest version information, please go to the P2 support page from the Panasonic web page <https://www.pavc.panasonic.co.jp/pro-av/>



AJ-PCD20

Memory Card Drive

"P2 drive"

(Interface: USB 2.0 / IEEE 1394b)



AJ-PCS060G

Portable Hard Disk Unit

"P2 Store"



AG-HPG20

Memory Card Portable Recorder

"P2 Portable"

AVC-Intra supported. SDI Input available.



AG-HPG10

Memory Card Portable Recorder

"P2 Gear"



AVCCAM

AG-HMR10 NEW

Memory Card Portable Recorder

"AVCCAM"

AVCHD recording and HD-SDI input/output.

HD/SD LCD Monitors



BT-LH80WU

7.9" HD/SD LCD monitor



BT-LH900A

8.4" HD/SD LCD monitor



BT-LH1710

17" HD/SD LCD monitor



BT-LH1760

17" 100Hz/120Hz
HD/SD LCD monitor



BT-LH2550

25.5" HD/SD LCD monitor

Details



Specifications

GENERAL

Power Supply:	DC7.2V (with Battery) DC7.9V (with AC adaptor)
Power Consumption:	10.9W (when LCD monitor is not used.) 11.7W (when LCD monitor is used.) 13.8W (MAX)
Operating Temperature:	0°C to +40°C
Operating Humidity:	10% to 85% (No condensation)
Weight:	Approx. 1.9kg Camcorder only Approx. 2.25kg Incl. two P2 cards and supplied battery
Dimensions (W x H x D):	154 mm x 179.5 mm x 397 mm

CAMERA

Pick-up Device:	3CCD (1/3-inch interline transfer type, and progressive modes supported)
Lens:	LEICA DICOMAR lens with optical image stabilizer, motorized/manual mode switching, 13 x zoom, F1.6 - 3.0 (f=3.9mm to 51mm / 35mm equivalent: 28mm to 368mm)
Optical Color Separation:	Prism system
ND Filter:	1/4, 1/16, 1/64
Gain Selection:	50i/50p mode: 0/+3/+6/+9/+12/+18 dB, 25p/25pN mode: 0/+3/+6/+9/+12 dB, when using slow shutter (1/12), 0dB fixed. when using under 25 fps flame rate, 0dB fixed.
Shutter Speed:	50i/50p mode: 1/50 (OFF) sec., 1/60 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec., 1/2000 sec. 25p/25pN mode: 1/25 sec., 1/50 (OFF) sec., 1/60 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec.
Shutter Speed: (Synchro Scan)	50i/50p mode: 1/50.0 sec. to 1/248.9 sec. 25p/25pN mode: 1/25.0 sec. to 1/248.9 sec.
Shutter Angle:	10° to 360° by 0.5° steps "FILM CAM" mode in scene file operation type
Slow Shutter Speed:	50i/50p mode: 1/25, 1/12 25p/25pN mode: 1/12
Frame Rate:	variable 12/15/18/20/21/22/23/24/25/26/27/28/30/32/34/37/ 42/45/48/50 fps (20steps)
Minimum Luminance:	3lux, (F1.6, Gain: +12dB, Shutter: 1/24sec.)
Lens Hood:	Wide-field large type
Filter Diameter:	72 mm

Video P2 General (DVCPRO HD, 1080i / 720p)

Sampling Frequency:	Y: 74.25 MHz, P _B /P _R : 37.125 MHz
Quantizing:	8 bits
Video Compression System:	Compression ratio 1/6.7, DCT + variable length code
Video Recording Bit Rate:	100 Mbps

Audio P2 General (DVCPRO HD, 1080i / 720p)

Sampling Frequency:	48 kHz
Quantizing:	16 bits / 4ch
Frequency characteristics:	20 Hz to 20kHz

Memory Card

Recording Format:	DVCPRO HD: 1080/50i, 1080/25p (over 50i), 720/50p, 720/25p (over 50p), 720/25pN (Native) DVCPRO 50/DVCPRO/DV: 576/50i, 576/25p (over 50i)
Audio Recording Format:	PCM digital recording 48 kHz / 16 bits 4ch (DVCPRO HD / DVCPRO 50), 2ch/4ch selectable (DVCPRO/DV)
Recording/Playback Time*:	Approx.64 minutes (Using one 64GB P2 card, DVCPRO HD, recording in 1080/50i) Approx.32 minutes (Using one 32GB P2 card, DVCPRO HD, recording in 1080/50i) Approx.16 minutes (Using one 16GB P2 card, DVCPRO HD, recording in 1080/50i)

VIDEO connectors

SDI Out:	BNC x 1, 0.8Vp-p, 75 HD: SMPTE292M/296M/299M Standard SD: SMPTE259M-C/272M-A/ITU-R.BT656-4 Standard
Analog Component Output:	Component Video Terminal x 1, Y: 1.0Vp-p, 75 Ω, P _B /P _R : 0.7Vp-p, 75 Ω
Analog Composite Output:	Pin jack x 1, 1.0Vp-p, 75 Ω

Audio Connectors

XLR Input:	XLR (3-pin) x 2 (Input 1/Input 2) Input High-Impedance Line: 0dBu, MIC: -50/-60dBu (selectable in menu GUI)
Line Output:	Pin-jack x 2 (ch1,ch2) 316mV, 600 Ω
Built-in Microphone:	Stereo microphone
Phones:	Stereo mini jack (3.5mm diameter)
Built-in Speaker:	20mm round shape x 1

Other Connectors

IEEE 1394:	6-pin Digital x 1 (Input/Output), based on IEEE 1394 standard
USB:	Type mini B connector (USB ver.2.0)
Camera Remote:	2.5mm diameter super mini jack for zoom and rec start/stop 3.5mm diameter mini jack for focus and iris

Monitor, AC Adapter, and Other packages

LCD Monitor:	3.5 inches, LCD color monitor, 210,000 pixels
Viewfinder:	0.44 inches, LCD color viewfinder, 235,000 pixels
AC Adapter:	Weight: 160 g Dimensions: 70 (W) mm x 44.5 (H) mm x 116 (D) mm
Supplied Accessories:	AC adapter/charger, AC cord, DC cord, Eye cup, 5400mAh battery pack, Wireless remote controller with button-type battery, Microphone holder, Shoulder strap, Ferrite core, Component video cable, Pin-BNC conversion plug, P2 card software driver install CD-ROM

*Time shown above is when you record a series of 1 shot to P2 card.

Depending on numbers of shots you record, time will get shorter than the number shown above.

P2 Asset Support System The member's service program

Providing necessary information when you need it

P2 Asset Support System assists your P2HD use by providing extended warranty repairs & various technical information (update notices, operation guides, etc.) upon registration.

Free registration, no membership fees

5-year extended warranty repairs

Exclusive offer for P2HD !

Maximum 5-year extended warranty repairs are applied for P2HD models after registration. Several other services are also provided to members.



1st year	2nd year	3rd year	4th year	5th year
Basic warranty*1	P2HD Extended warranty repair*2			

Latest news only for you

In the member's web site, information is selected and presented for your models only. To be alerted to new firmware information and other releases, an email newsletter can be subscribed to.

Document library

You can filter through and find various technical information (operation guides, technical descriptions, etc.) quickly from the library.

Manage your equipment

You can easily know the update status and past service history of each unit, and can leave comments in free text as memos about your equipment.

* Not all models are eligible for extended warranty coverage.

* Please note that this extended warranty is not available in some countries/region see website below for the details.

*1: The basic warranty period may vary depending on the country/region see enclosed warranty card for warranty coverage.

*2: Not all repair work is covered by this extended warranty see enclosed warranty card for warranty coverage.

The maximum warranty period may be adjusted depending on the number of hours the device has been used.

Details and user registration: http://panasonic.biz/sav/pass_e

Please refer to the latest Non-linear Compatibility Information, P2 Support and Download and Service Information, etc. at panasonic web site.



<https://eww.pavc.panasonic.co.jp/pro-av/index.html>

Notes Regarding the Handling of P2 Files Using a PC

Mounting and Transferring Files

The PC must be installed with the included P2 driver in order to recognize, copy and transfer P2 files. This driver is also necessary when using the PC card slot and when handling P2 files stored on a hard-disk device, such as P2 store. The included P2 driver is compatible with Windows Vista, Windows XP, Windows 2000 and Mac OS X. For other operating requirements, refer to the P2 installation manual. The P2 driver and the P2 installation manual can be downloaded free from a Panasonic website. Visit <https://eww.pavc.panasonic.co.jp/pro-av/> and click "P2 Support and Download."

Preview and Nonlinear Editing

To preview (play) P2 files on a PC, it is necessary to install P2 Viewer software (downloadable for free, for Windows only) or P2 CMS content management software (downloadable for free, for both Windows and Mac), both from Panasonic, or P2-compatible editing software available from other companies (for details, visit https://eww.pavc.panasonic.co.jp/pro-av/sales_o/p2/partners.html). Note that each software places specific requirements on the operating environment, and the operating environment must meet additional requirements to play and edit HD content on Windows PCs and Macs. For P2 Viewer or P2 CMS download and operating requirement information, visit <https://eww.pavc.panasonic.co.jp/pro-av/>. For operating requirements and details of other P2 editing software, visit the website of the relevant software manufacturer.

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Factories of Systems Business Group have received ISO14001:2004-the Environmental Management System certification. (Except for 3rd party's peripherals.)