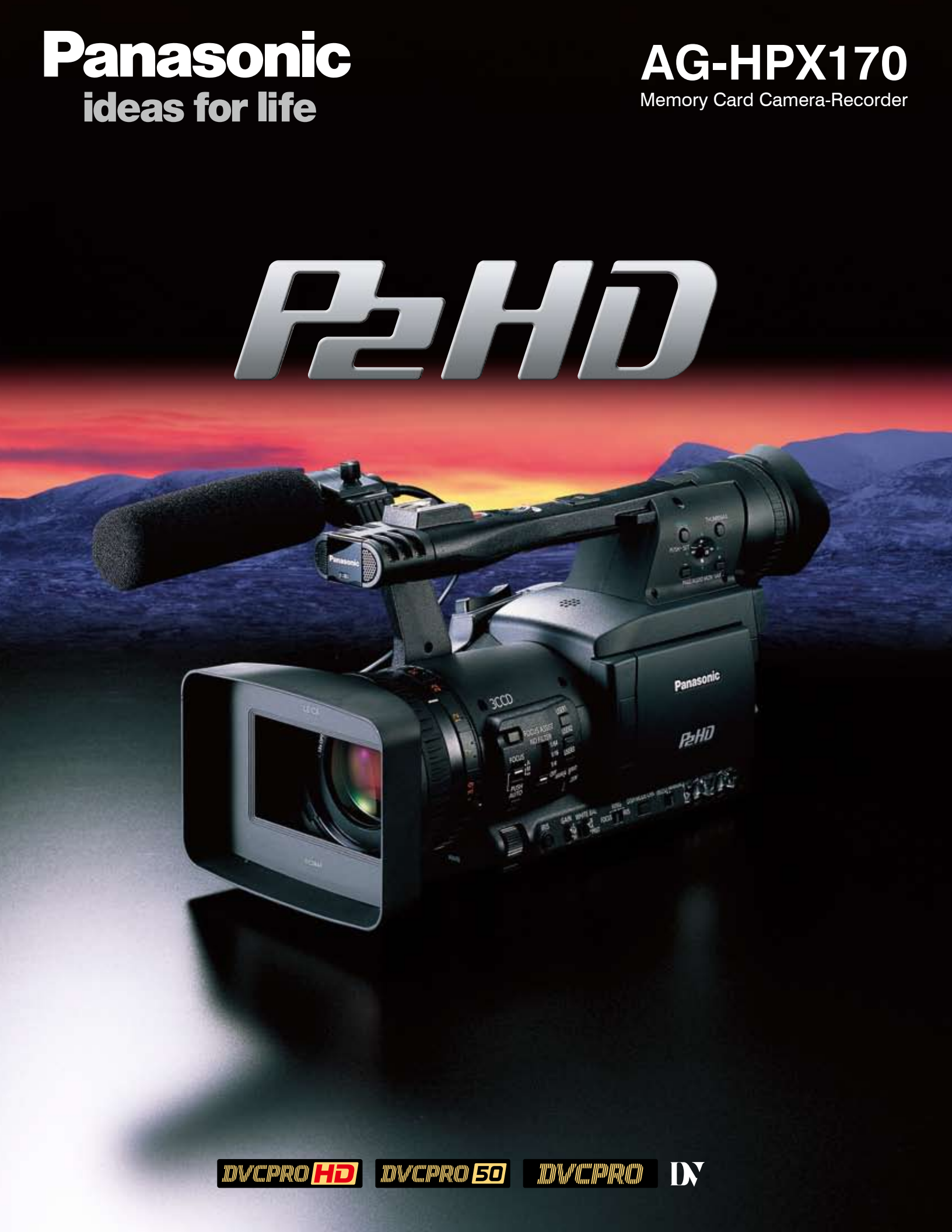
Panasonic
ideas for life

AG-HPX170

Memory Card Camera-Recorder

P2HD



DVCPRO HD DVCPRO 50 DVCPRO DV

Lightest P2 HD Model Brings Even Greater M

A Handheld Camcorder with 28mm Wide-Angle Lens, Superb Image Quality and A

The AG-HPX170 debuts as 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 new model weighs in at only 4.2 pounds (1.9 kg), assuring exceptional mobility.

The AG-HPX170 also introduces a newly designed camera section that features a 28mm wide-angle zoom lens — widest in the class — plus a newly developed 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 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 is an agile, powerful solution to today's broadcasting and image production needs.

Mobility to Video production and News Gathering

Advanced Functions

Compact, Lightweight and Perfectly Balanced

At 4.2 pounds (1.9kg), the super-compact AG-HPX170 debuts as 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 handle a wide range of applications without requiring a conversion lens.

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

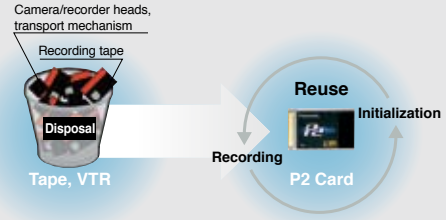
*HD camcorders with integrated lens and 1/3-inch CCD, as of July 2008 (according to a Panasonic survey)

Ecological Benefits — Thanks to Solid-State Technology, Broadcasting Can Help Conservation.

eco ideas

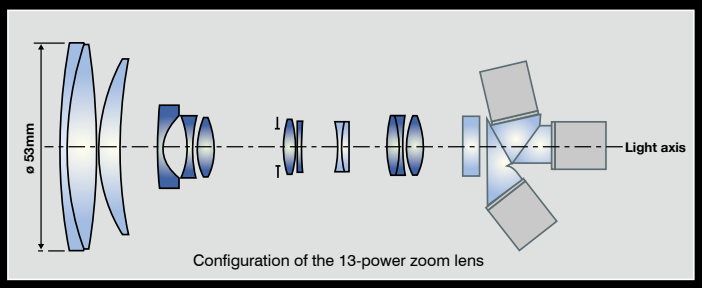
Because P2 cards are re-usable and moving parts are substantially reduced, P2 HD is an environmentally-friendly technology.

The wear-free and dropout-free memory card recording system does not need the tapes required by conventional VCRs. The memory card system reduces waste generated when the heads, tape drive mechanisms, etc., are replaced.



Wide, High-Quality Images with High Sensitivity from a Newly Designed Optical System and High-Performance DSP

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



Configuration of the 13-power zoom 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 new 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 1.9 ft (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 July 2008 (according to a Panasonic survey)

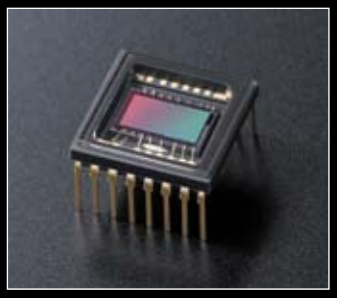

Image of an angle of view equivalent to 31.4 mm


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.

New Progressive CCD Raises Sensitivity and Lowers Noise and Smear



The new 1/3-inch 16:9 progressive CCD on the AG-HPX170 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 1080/60p Scan

Progressive to interlace conversion, cross conversion and down conversion all start with the 1080p/60 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.

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

The digital signal processor developed for the AG-HPX170's 1080/60p video signals uses 14-bit A/D conversion and 19-bit inner processing to attain unprecedented accuracy. While the camera does not record 1080/60p, it is from this capture that all other signals are made. The DSP performs a variety of adjustments, including eight 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.

7-Mode Gamma for Richer Gradation

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

VIDEO GAMMA

CINE-LIKE GAMMA

AG-HPX170 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 contras 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.

Advanced P2 Card Recording Boosts Reliability and Gets Your Finger to the Record Button Faster

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

The AG-HPX170 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 100 Mbps (1080/59.94i, 720/59.94p) 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 can record in 1080/24p, 1080/60i or 720/60p HD, and it's compatible with the SD (480i) format. The multi-codec system allows you to record in DVCPRO HD, DVCPRO50, DVCPRO or DV.

Recording Video Format	Cordec	Recording Time when using two P2 Cards	
		32GB	64GB*
1080/60i 1080/30p (over 60i) 1080/24p (over 60i) 1080/24pA (over 60i) 720/60p 720/30p (over 60p) 720/24p (over 60p)	DVCPRO HD	64 minutes	128 minutes
720/30pN (Native)		128 minutes	256 minutes
720/24pN (Native)		160 minutes	320 minutes
480/60i 480/30p (over 60i) 480/24p (over 60i) 480/24pA (over 60i)	DVCPRO 50	128 minutes	256 minutes
	DVCPRO/DV	256 minutes	512 minutes

*P2 Card of 64GB to be released in autumn 2008.

Large-Capacity P2 Cards — Compact, Speedy and Reliable

The P2 card is an AV media for professional use. It features a large capacity of up to 64 GB*1 (with the AJ-P2C064 to be released in autumn 2008), and about 4 times the data transfer speed of an SDHC Memory Card (Class 6). Extremely light at approximately 0.10 pounds (45 grams), it is very thin and resists impact up to 1,500 G and vibration up to 15 G. Some of its other solid-state memory features that make it ideal for news gathering include operation in temperatures from −4 degrees to 140 degrees F (−20 to 60°C) and storage from −38 degrees to 176 degrees F (−40 to 80°C). AV data is recorded in MXF files for direct transfer to nonlinear editors*2 or networks*3 without the need for digitizing.

*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: PCs must be installed with the included P2 driver in order to mount P2 cards.
*3: For editing, PCs must be installed with P2-compatible editing software available from various companies. Read "Notes Regarding the Handling of P2 Files Using a PC" on the back page.

Immediate Startup and Better Data Protection

When you press the Record button in standby mode, the AG-HPX170 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 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://eww.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 for consecutive overwriting, you can repeatedly re-record during a particular recurring time slot, always mai ntaining 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 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.

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

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.
In 720p mode*, the AG-HPX170 allows the undercranking and overcranking that are used with film cameras to create fast-motion and slow-motion effects.

*In 1080 and 480 modes, the frame rate can be set only to 24p or 30p.

•Normal cinematic shooting (at 24 fps or 30 fps) refers to the same rate as used in film cameras. The AG-HPX170 can record in 1080/24p (over 60i) or 480/24p (over 60i) mode, as well as 720/24p mode. 30 fps is the standard frame rate used in the production of TV commercials, music clips and video software. The AG-HPX170 can also record in 1080/30p (over 60i) or 480/30p (over 60i) mode, as well as 720/30p mode.

•Higher-speed shooting (at over 25 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 24 fps. For a standard speed of 30 fps, anything over 32 fps will be overcranked.

•Lower-speed shooting (at under 22 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 24 fps. For a standard speed of 30 fps, anything under 28 fps will be undercranked.

720p Native Mode

In Native mode, the AG-HPX170 records images at the frame rate set in the camera. For example in 24pN mode, it only records 24 frames instead of the normal 60 frames. Using the AG-HPX170 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 60p Mode

This is a VariCam-compatible mode for recording 60p-converted video. For example, in 24p mode, it records 60 frames by applying a 2:3 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 P2 recorder, DVCPRO HD recorder or hard-disk recorder such as the Focus Enhancements FireStore FS-100.

Framerate	Effect of 24p standard	Effect of 30p standard
12p	200% (Quick)	250% (Quick)
15p	160% (Quick)	200% (Quick)
18p	133% (Quick)	167% (Quick)
20p	120% (Quick)	150% (Quick)
21p	114% (Quick)	143% (Quick)
22p	109% (Quick)	136% (Quick)
24p	100% (Standard)	125% (Quick)
25p	96% (Slow)	120% (Quick)
26p	92% (Slow)	115% (Quick)
27p	89% (Slow)	111% (Quick)
28p	86% (Slow)	107% (Quick)
30p	80% (Slow)	100% (Standard)
32p	75% (Slow)	94% (Slow)
34p	71% (Slow)	88% (Slow)
36p	67% (Slow)	83% (Slow)
40p	60% (Slow)	75% (Slow)
44p	55% (Slow)	68% (Slow)
48p	50% (Slow)	63% (Slow)
54p	44% (Slow)	56% (Slow)
60p	40% (Slow)	50% (Slow)

1080/480 24p Advance Mode

The 1080 and 480 progressive recording systems convert recordings to 60i in 24p, 30p, or 24pA (Advance) mode. The 24p Advance mode uses 2:3:3:2 pulldown, which allows for an easy extraction to a 24p timeline and no quality loss in the process with NLEs that are compatible.*
This lets you maintain superior image quality throughout the production process.

*For information on compatible nonlinear editing systems, visit <https://eww.pavc.panasonic.co.jp/pro-av/> and click "Nonlinear Compatibility Information."
*24p = 23.98p, 30p = 29.97p, 60p = 59.94p and 60i = 59.94i

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 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.

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

Superb Mobility for Low-Angle Shots and Interviews

• The 4.2pounds (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 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.

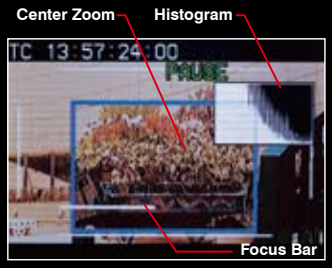
Standard | 13x optical zoom | 13x optical zoom x 10x digital zoom (130x)

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 New Functions

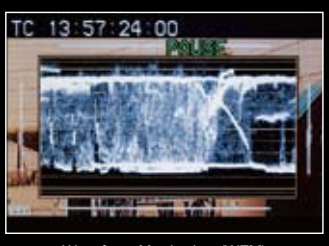
A new focus assist function with HD compatibility has also been added to the AG-HPX170. This is in addition to a center zoom function that enlarges the center of the frame, and a histogram display. You can select from three display modes: center zoom, histogram, or combined center zoom and histogram. A new focus bar display further helps to speed up focusing by indicating the level of focus by the length of the bar. An EVF DTL (detail) 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)

Simplified Waveform and Vectorscope Display

The AG-HPX170 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)

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 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)	New
TEXT MEMO:	Add a text memo	
SHOT MARK:	Add a shot mark	
LVL METER:	Switch audio level meters (Ch1 & 2/Ch3 & 4)	New
LAST CLIP:	Delete a last clip	New
PRE REC:	Pre-rec function	New
F.RATE+:	Flame rate up	New
F.RATE−:	Flame rate down	New

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/Preset) 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).

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://eww.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.

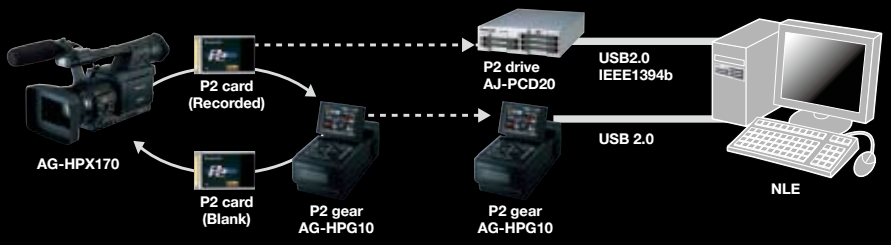
TC Set and User File Copy with Multi-Cameras
Connecting two AG-HPX170 cameras with an IEEE 1394 cable allows the slave camera to synchronize with the master camera which enables time-code-matched editing with multiple cameras for “TC synchro editing”.

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.

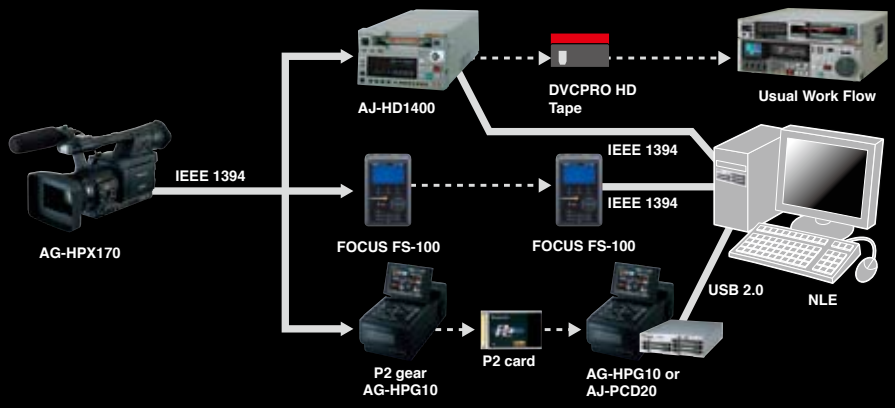
Versatile Operating Style

Simple Solution
Using just an AG-HPX170 and a laptop computer (PC or Mac) you can access each clip or transfer clips via USB 2.0 (PC) or IEEE 1394 (Mac) without a capturing process. By using the P2 gear AG-HPG10, you can also copy files between cards.

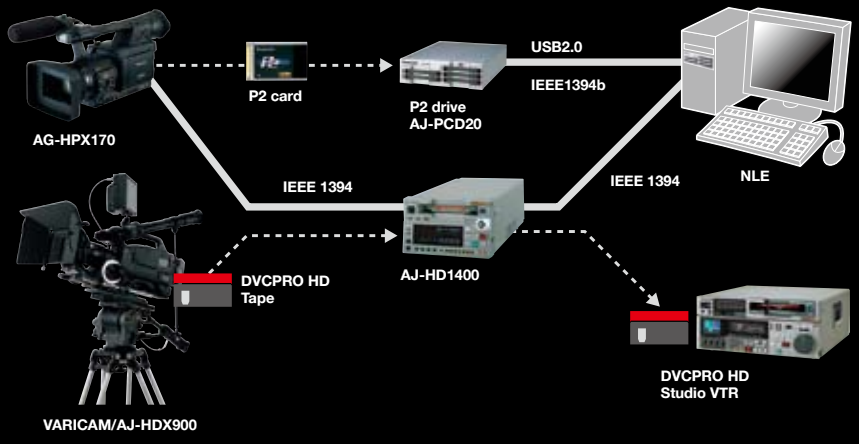
News Gathering
Out in the field, the P2 store hard-disk drive lets you use and re-use the same P2 cards repeatedly. Back in the editing room, connect the P2 store (or a P2 drive) directly to a NLE system. Mobile, reliable and easy to use, the AG-HPX170 is a perfect solution for the news environment as it can get in places that bigger cameras may not be allowed.



HDTV Program Production
Programs for HDTV can be created in the 1080i or 720p format with the AG-HPX170. Recordings can be output to a DVCPRO HD VTR via the IEEE 1394 interface and added to the existing HD production flow. When used with the Focus Enhancements Firestore, virtually any event can be recorded due to the extended recording time available. The P2 gear AG-HPG10 can be used as a backup recorder, or as a drive for uploading to or downloading from a nonlinear editor.

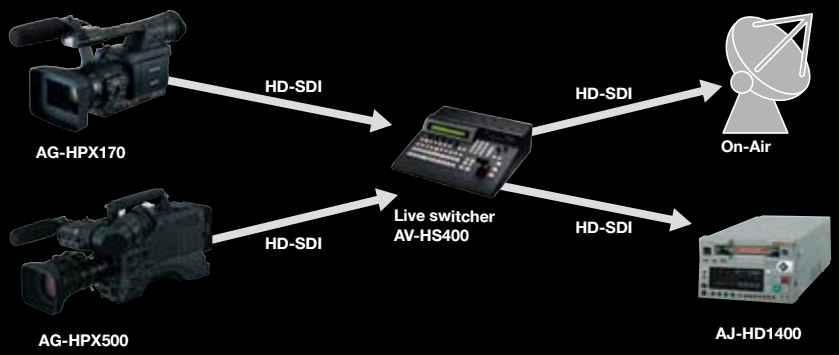


Film, Commercial and Video Production
Use the AG-HPX170 as a main camera on an independent film shoot, or as a second camera on a VariCam or AJ-HDX900 HD production. The AG-HPX170 records in all of these formats so it can go wherever it's needed. Its size and flexibility make it the camera of choice for many applications, and it's mobile and maneuverable, ready for all kinds of specialty shots.



Matches SDI Environments for Both Broadcasting and Production
The AG-HPX170 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, for example, Adobe, Apple, Avid, GrassValley, 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://eww.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

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-P2C016RG
AJ-P2C032RG
R-series memory card

SD/SDHC memory card

AJ-PCD20
P2 Memory Card drive

AJ-PCS060G
P2 “Store” portable hard disk unit

AG-HPG10
P2 “Gear” memory card portable recorder

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

HD/SD LCD Monitors

BT-LH80WU
7.9” HD/SD LCD monitor

BT-LH900A
8.4” HD/SD LCD monitor

BT-LH1700W
17” HD/SD LCD monitor

BT-LH1760
17” 100Hz/120Hz HD/SD LCD monitor

BT-LH2600W
26” 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:	32˚F to +104˚F (0˚C to +40˚C)
Operating Humidity:	10% to 85% (No condensation)
Weight:	Approx. 4.19 lbs (1.9kg) Camcorder only Approx. 4.96 lbs (2.25kg) Incl. two P2 cards and supplied battery
Dimensions (W x H x D):	6-1/8 inch x 7-1/8 inch x 15-11/16 inch (154 × 179.5 × 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×zoom, F1.6 - 3.0 (f=3.9mm to 51mm / 35mm equivalent: 28mm ro 368mm)
Optical Color Separation:	Prism system
ND Filter:	1/4, 1/16, 1/64
Gain Selection:	60i/60p mode: 0/+3/+6/+9/+12/+18 dB, 30p/30pN/24p/24pA/24pN mode: 0/+3/+6/+9/+12 dB, when using slow shutter (1/12 or 1/15), 0dB fixed. when using under 23 fps flame rate, 0dB fixed.
Shutter Speed: (Preset)	60i/60p mode: 1/60 (off), 1/100, 1/120, 1/250, 1/500, 1/1000,1/2000 sec. 30p/30pN mode: 1/30, 1/50 (off), 1/60, 1/120, 1/250, 1/500, 1/1000 sec. 24p/24pA/24pN mode: 1/24, 1/50 (off), 1/60, 1/120, 1/250, 1/500, 1/1000 sec
Shutter Speed: (Synchro Scan)	60i/60p mode: 1/60.0 sec. to 1/249.8 sec. 30p/30pN mode: 1/30.0 sec. to 1/249.8 sec. 24p/24pA/24pN mode: 1/24.0 sec. to 1/249.8 sec.
Shutter Angle:	10° to 360° by 0.5° steps “FILM CAM” mode in scene file operation type
Slow Shutter Speed:	60i/60p mode: 1/15, 1/30 sec. 30p/30pN mode: 1/15 sec. 24p/24pN mode: 1/12 sec. (in 720p mode only)
Frame Rate:	Variable 12/15/18/20/21/22/24/25/26/27/28/30/32/34/36/40/44/ 48/54/60 fps (20steps)
Minimum Luminance:	3lux (F1.6, +12dB gain and 1/24 sec. of shutter speed)
Lens Hood:	Wide-field large type
Filter Diameter:	72 mm

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

Sampling Frequency:	Y: 74.25 MHz, PB/PR: 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: 1080/60i (30p over 60i, 24p over 60i, 24pA over 60i) 720/59.94p (30p over 60p, 24p over 60p) 720/30PN (Native) 720/24PN (Native) DVCPRO 50/DVCPRO/DV: 480/60i (30p over 60i, 24p over 60i, 24pA over 60i)
Audio Recording Format:	PCM digital recording 48 kHz / 16 bits 4ch (DVCPRO HD / DVCPRO 50), 2ch/4ch selectable (DVCPRO/DV)
Recording/Playback Time*:	Approx.16 minutes (Using one AJ-P2C016HG, DVCPRO HD, recording in 1080/60i) Approx.32 minutes (Using one AJ-P2C032HG, DVCPRO HD, recording in 1080/60i)

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, 75Ω, PB/PR: 0.7Vp-p, 75Ω
Analog Composite Output:	Pin jack x 1, 1.0Vp-p, 75Ω

Audio Connectors

XLR Input:	XLR (3-pin) ×2 (Input 1/Input 2) Input High-Impedance Line: 0dBu, MIC: -50/-60dBu (selectable in menu GUI)
Line Output:	Pin-jack × 2 (ch1,ch2) 316mV, 600 Ω
Built-in Microphone:	Stereo micropnone
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: 0.37 lbs (160 g) Dimensions: 2-13/16 (W) inch x 1-1/8 (H) inch x 4-5/8 (D) inch (70 x 44.5 x 116 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.

P2HD

P2 – BRINGING GREATER SPEED AND CREATIVITY TO THE CONTENT CREATORS

P2HD 5 Year Warranty Repair Program*1

Customers who register as users on the website will receive a extended warranty repair valid for up to five years.

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

*1: Please note that this extended warranty is not available in some countries/regions see web site below for details. *2: Not all models eligible for extended warranty coverage. *3: The basic warranty period may vary depending on the country/region see enclosed warranty for warranty coverage. *4: Not all repair work is covered by this extended warranty see enclosed warranty card for warranty coverage. *5: The maximum warranty period may be adjusted depending on the number of hours the device has been used.

Purchase P2 product → Register online within 1 month → "Registration Notice" e-mail sent → **5 years of Warranty Repairs**

Make sure to save the "Registration Notice" e-mail during the warranty period.

Details about user registration and the extended warranty:

For US Customer: www.panasonic.com/broadcast

For Outside US: panasonic.biz/sav/pass_e

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

For US Customer: www.panasonic.com/broadcast

For Outside US: 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 OSX. 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

The PC must be installed with the P2 Viewer software for Windows PC, P2 CMS, or P2-compatible editing software available from Adobe, Apple, Avid, Grass Valley, or Matrox in order to preview P2 files. Note that the specified operating requirements must be met to operate these applications. For playing and editing HD video clips, the PC or Mac must meet additional operating requirements. For software download or other information, visit https://eww.pavc.panasonic.co.jp/pro-av/ and click "P2 Support and Download" or "Nonlinear Compatibility Information."
For the operating requirements of other editing software, visit the website of the relevant software manufacturer.

Panasonic

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ISO 9001 JQA-0443

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UKAS ENVIRONMENTAL MANAGEMENT 051

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

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