

**Panasonic**  
ideas for life

**P2HD**  
**AG-HVX200A**  
Memory Card Camera-Recorder

A powerful 13x zoom lens with a wider, 30mm angle of view (35mm equivalent),  
and a new progressive CCD greatly improves S/N ratio and lowers smear.



**DVCPRO HD**

**LEICA** Mini **DV** Digital  
**DICOMAR** Video Cassette





Iditarod - Sled dog race in Alaska

# The AG-HVX200A — P2 HD Camcorder for a Wide Range of Video Productions.

Panasonic's handheld P2 HD camcorders are packed with advanced video technologies. The AG-HVX200 is widely praised as a revolutionary professional production tool for an array of applications, from filmmaking through broadcasting.

The P2 card's excellent mobility, reliability and instant playback ability were proven in demanding applications in the field, from the one-chance-to-capture-it pressure of the Olympic Games to the extreme weather of the Iditarod in Alaska. Features like the DVCPRO HD codec's high image quality, variable frame rate recording — the first ever in a handheld camcorder — and the HD/SD multi-format with built-in DV tape drive were appreciated by video creators everywhere. The original AG-HVX200 continues to provide new solutions to the production of movies, documentaries, short movie features, and more.

Now, the P2 handheld camera takes another step forward. The new AG-HVX200A with its newly-developed CCD raises the signal to noise performance while enhancing the low-light performance of the camera as well. Coupled with a new 30mm wide-angle zoom lens, this new version of the HVX200 addresses even more applications and meets the needs of user with more critical needs.



Producing "Paths to Civilization" in China



Producing a documentary in Polynesia

Producing a movie in Japan



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# True High Definition

IMAGE QUALITY FOR THE PROFESSIONAL



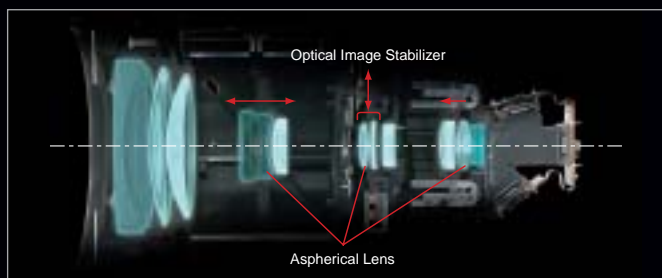
## Designed Leica Dicomar 13x Zoom Lens System for HD Applications

### The Leica Dicomar® HD Lens

Developed specifically for HD recording, this lens system features a large 82-mm (diameter) filter along with 15 lens elements in 11 groups, including three aspherical lenses.

The Leica Dicomar lens incorporates Leica optical technology and know-how throughout. The use of low-dispersion glass reduces color aberration and increases resolution, while a multi-coating process minimizes flare and ghosting. This results in sharp, crisp, beautifully rendered images with delicate nuances and exceptional shading.

\*Leica and Dicomar are registered trademarks of Leica Microsystems IR GmbH.



### Wider-Angle 13x Zoom Lens

The powerful 13x zoom lens, specially designed for HD recording, has a wide 30mm angle of view (35mm equivalent). The new lens, which is based on Panasonic's acclaimed wide-angle lens design, 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.



Angle of view with the AG-HVX200 at the wide-angle setting (32.5 mm)



Angle of view with the AG-HVX200A at the wide-angle setting (30.3 mm)

The same cam-driven zoom ring that was so popular in previous models ensures accurate zooming.

### OIS (Optical Image Stabilizer)

Panasonic's advanced OIS (Optical Image Stabilizer) 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 and DSP Achieve Higher Sensitivity and Image Quality

### New Progressive CCD Raises Sensitivity and Lowers Noise and Smear

The new 1/3-inch 16:9 progressive CCD on the AG-HVX200A 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.



### DSP with 14-bit A/D Conversion and 19-bit Processing

The AG-HVX200A's developed digital signal processor for 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 new DSP helps the AG-HVX200A deliver beautiful images in all video formats.



### 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 capture. The result is an HD or SD recording with a level of image quality that electronically processed scans cannot match.

### DVCPRO HD: The Image and Sound Quality Broadcasters Demand Supports Multi-Codec Recording

#### The Superb Images and Sound of DVCPRO HD Codec

Using the DVCPRO HD codec recording system, the AG-HVX200A records HD video with outstanding image and audio quality onto a P2 card in file format. 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 and is advantageous in image compositing and motion tracking. Sound quality is excellent too, thanks to DVCPRO HD's uncompressed 16-bit, 4-channel digital audio recording capability.



DVCPRO HD in Turin Olympics

### HD/SD Multi-Format Recording

The AG-HVX200A can record onto a P2 card in 1080/24p<sup>\*1</sup>, 1080/60i or 720/60p HD, and it's compatible with the SD (480i) format currently used in television production. The multi-codec system allows you to record in DVCPRO HD DVCPRO50, DVCPRO or DV<sup>\*2</sup> where ever you need to go based on your client needs.

<sup>\*1</sup>: In 1080/24p, Images are recorded in 60i by 2:3 pull-down.

<sup>\*2</sup>: The P2 card can be used for recording video in any codec. Mini DV tape can record video in the DV format. Both 16:9 and 4:3 aspect ratios are supported in SD, 16:9 only in HD.

#### Video format and codec supported by AG-HVX200A

| Recording Video Format <sup>*1</sup> | Codec              | Media       | Rec. Time <sup>*3</sup> |                      |            |
|--------------------------------------|--------------------|-------------|-------------------------|----------------------|------------|
| HD                                   | DVCPRO HD          | P2 card     | 64 minutes              |                      |            |
|                                      |                    |             |                         | 1080/60i             |            |
|                                      |                    |             |                         | 1080/24p (over 60i)  |            |
|                                      |                    |             |                         | 1080/24pA (over 60i) |            |
|                                      |                    |             |                         | 1080/30p (over 60i)  |            |
|                                      |                    |             |                         | 720/60p              |            |
|                                      |                    |             |                         | 720/24p (over 60p)   |            |
|                                      |                    |             | 720/30p (over 60p)      |                      |            |
| 720/24pN (Native) <sup>*2</sup>      | 160 minutes        |             |                         |                      |            |
| 720/30pN (Native) <sup>*2</sup>      |                    | 128 minutes |                         |                      |            |
| SD                                   | DVCPRO50           | P2 card     | 128 minutes             |                      |            |
|                                      |                    |             |                         | 480/60i              |            |
|                                      |                    |             |                         | 480/24p (over 60i)   |            |
|                                      |                    |             |                         | 480/24pA (over 60i)  |            |
|                                      | 480/30p (over 60i) |             | 256 minutes             |                      |            |
|                                      | DVCPRO/DV          |             |                         | 480/60i              |            |
|                                      |                    |             |                         | 480/24p (over 60i)   |            |
|                                      |                    |             |                         | 480/24pA (over 60i)  |            |
|                                      | DV                 |             |                         | mini-DV Tape         | 63 minutes |
|                                      |                    |             |                         |                      |            |
| 480/60i                              |                    |             |                         |                      |            |
| 480/24p (over 60i)                   |                    |             |                         |                      |            |
| 480/24pA (over 60i)                  |                    |             |                         |                      |            |
| 480/30p (over 60i)                   |                    |             |                         |                      |            |
| 480/60i                              |                    |             |                         |                      |            |

<sup>\*1</sup>: 24p=23.98p, 30p=29.97p, 60p=59.94p and 60i=59.94i

<sup>\*2</sup>: In the Native mode, AG-HVX200A record only active frames.

<sup>\*3</sup>: P2: using two 32GB P2 cards. (half with a single card)

DV: using a AY-DVM63 mini-DV tape



# P2 Card Revolution

THE SPEED AND CONVENIENCE OF P2



A Semiconductor Memory  
that Reflects Today's Leading Digital Technologies

## Super-Compact, Large Capacity and High Speed

P2, which stands for Professional Plug-in, is a compact solid-state memory card designed for professional AV use. Basically, four SD/SDHC Memory Cards are packaged together to create a single P2 card. This gives the P2 card four times the transfer speed and four times the write speed of a single SDHC card. Utilizing a precision die-casting for the body of the card, it becomes the most rugged and reliable memory device (class 6). A slim, large-capacity 32-GB\*<sup>1</sup> P2 card (AJ-P2C032RG) can hold 32 minutes of DVCPRO HD codec recording yet weighs only about 45 grams. Compliant with PC Card standards (Type II), the P2 card plugs directly into the card slot of a laptop PC.\*<sup>2</sup> AV data on the card mounts instantly, with each cut as an MXF file. The data can be used immediately — no digitizing necessary — for nonlinear editing, or it can be transferred over a network. The P2 far surpasses all other AV media in transfer speed, too. The P2 cards transfer data at up to 640 Mbps\*<sup>3</sup>, which can greatly speed up production processes.

\*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: The PC must be installed with the included P2 driver in order to mount P2 cards. For editing, the PC 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.

\*3: This data transfer speed is a theoretical value. The actual data transfer speed varies according to operating conditions and other ancillary devices.

## Reliable Performance, Repeatedly Reusable

P2 cards provide superb reliability in even the harsh environments. P2 cards withstand shock up to 1,500 G and vibration up to 15 G, operate in temperatures from -4 to 140°F (-20 to 60°C), and can be stored in temperatures from -40 to 176°F (-40 to 80°C). In durability too, the P2 card goes well beyond ordinary PC cards. Its connector portion, for example, is specially designed for professional use and has passed insertion/removal tests of more than 30,000 cycles. P2 cards also have a write protect switch that helps prevent accidental data deletion. Solid state memory has the unique advantage of being rewritable, over and over again, in part because it is a non-contact media and requires mechanical intervention. You can use the same P2 card again and

again for years — slashing media costs and operational maintenance while also minimizing impact on the environment.

## P2: The Next-Generation Media

### Immediate Startup and Better Data Protection

When you press the Record Button in standby mode, the AG-HVX200A instantly finds a blank area of the P2 card and begins recording. It can begin recording immediately even when you're using it to preview video. There is no need to power down and reboot the camera portion, you can go from playback to record in less than 2 seconds. There's no chance of accidentally overwriting a recording. Recordings will not be erased unless you intentionally delete a file or initialize the card.

### Hot-Swap Recording and Other Functions that Add Versatility

- Hot-swap recording:** Thanks to the AG-HVX200A's two card slots, you can hot-swap P2 cards and have continuous non-stop recording. With multiple cards you can record for hours without interruption. You could also use the P2 Gear, AG-HPG10, for off-loading the card to a USB or 1394 drive. Then, once off-loaded and verified, the card can then be formatted and made ready for recording.
- Loop recording:** Using two P2 cards and setting the AG-HVX200A 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.
- Pre-rec:** While in standby mode, you can continuously store, and subsequently record, up to 7 seconds in DVCPRO50/DVCPRO or 3



seconds in DVCPRO HD of video and audio. In effect, this lets you record footage of events that occur even before you press the rec start button, giving you a way to "go back" and capture moments you otherwise would have missed.

- **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.

#### Clip Thumbnail/Data Function

The AG-HVX200A records each cut 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.

#### Shot Marker Function

If desired, you can add a simple OK/NG shot marker to each clip either during or after recording. When a P2 card containing marked clips is inserted\* in a PC, the PC will display with a M demarkation in the P2 viewer / P2 Content Management Software, P2CMS, which of the clips is the one with the Marker.

\* 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."

#### Connects Directly to PCs and Macs

In PC mode, the AG-HVX200A connects directly via USB 2.0 to a PC running Windows. In IEEE 1394 Device mode, it connects directly to a Mac. This lets you use the AG-HVX200A as a P2 card drive, providing easy access to recordings on the P2 card.

\* The included P2 driver must be installed in the Windows PC or Mac computer. Read "Notes Regarding the Handling of P2 Files Using a PC" on the back page.

#### Added Versatility for Field Work

The battery-powered AJ-HPG10 portable recorder — or P2 Gear — gives the AG-HVX200A the added versatility needed in the field. Equipped with two card slot and 3.5 inch LCD monitor, the P2 Gear allows quick viewing and copying P2 files, card-to-card. You can also use the P2 Gear for line, backup recording via IEEE 1394, or copying files to an external hard disk drive via USB or IEEE 1394.



# VariCam Creativity

INHERITING THE EXPRESSIVE POWERS OF THE VARICAM

## Variable Frame Rates from 12 to 60 fps Allows Cinematic Expression

### Variable Frame Rate from 12 to 60 fps

Panasonic's VariCam – named for its ground-breaking variable frame rate capability – is widely used in the production of movies, TV programs and commercials. With the AG-HVX200A, the variable frame rate function is also available in this compact camera.

In 720p mode\*, the frame rate can be set from the conventional



•Normal cinematic shooting is done at 24 fps, the same rate as in film cameras. The AG-HVX200A 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 production of TV commercials, music clips and video software. The AG-HVX200A can also record in 1080/30p (over 60i) or 480/30p (over 60i) mode, as well as 720/30p mode.



•Higher-speed shooting at 26\* to 60 fp 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 12 to 22\* fps lets you attain fast-motion effect. This technique can be combined with warp-speed effect, special emphasis to flowing water, fast-moving clouds.

\*When the standard speed is 24 fps. For a standard speed of 30 fps, anything under 26 fps will be undercranked.

24p/30p to any of 11 steps between 12p and 60p. Like the VariCam, the AG-HVX200A allows the undercranking and overcranking 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.

## Equipped with Native and Over-60p Modes for Previewing Visual Effects

### 720p Native Mode

In the Native mode, the AG-HVX200A 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. When using this mode for undercrank or overcrank, only the frames dialed in are chosen. Using the AG-HVX200A 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 Hard Disk recorder, such as the Panasonic AJ-HD1200A DVCPRO HD recorder or the Focus Enhancements FireStore FS-100.

### 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." For the operating requirements and other details of editing software, visit the website of the relevant software manufacturer.

\*24p=23.98p, 30p=29.97p, 60p=59.94p and 60i=59.94i



## Cine-Like Gamma Provides Warmer, Film-Like Color Tones

### Eight-Mode Gamma for Richer Gradation

Drawing on technologies developed for the VariCam, Panasonic has equipped the AG-HVX200A with advanced gamma functions that address eight different shooting scenarios and enhances your creative abilities. Included are the Cine-Like Gamma, which gives recordings the characteristic warm tone of film recordings, and a News Gamma that's designed especially for news gathering.



CINE-LIKE GAMMA



VIDEO GAMMA

### AG-HVX200A Gamma Modes

|              |   |
|--------------|---|
| NEWS:        | Minimizes washout to faithfully capture all visual information especially in the highlights |
| HD NORM:     | Suitable for HD recording   |
| LOW:         | Works to flatten out a high contrast scene  |
| SD NORM:     | Normal setting for SD<br>(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   |

### Create Slow-/Fast-Motion Effects Using Mini DV Tape

In addition to its two P2 card slots, the AG-HVX200A is equipped with a mini DV tape drive. This allows recording in 60i, 30p, 24p or 24pA (Advance) modes, just like AG-DVX100 series models. It also lets you down-convert an HD recording (1080i/720P) recorded on a P2 card and copy it to a mini DV tape. During the Dubbing process, frame-rate conversion is applied to the overcranked or undercranked HD footage recorded in the 720PN native modes. This lets you create special speed effects during DV production – until now, a feat possible only with a complete VariCam system.





## Manual Zoom, Focus, Iris and Gain Functions for the Professional

### Cam-Driven Manual Zoom

The cam-driven (mechanical) manual zoom ring provides the same fast, precise zooming as cameras with interchangeable lenses. You'll also enjoy the operating feel. When you turn the zoom ring, you experience the same kind of steady resistance as you feel with 35mm lenses. The AG-HVX200A's servo-driven zoom also allows slow zooming.

### Manual Focus with Center Zoom

Enjoy quick, sharp focusing manually or automatically. In manual mode, the focus ring gives you the same kind of operating feel and responsive control as cameras with interchangeable lenses. An HD-compatible focus assist (Center Zoom) function enlarges the center part of the image, making it easier to get the more precise focus needed in HD production. In auto mode, you get quick focusing when shooting. When set to infinity, the focal distance is immediately prepared for the next manual focus. When in manual mode, pressing the Push Auto button temporarily activates auto focus.



### Manual Aperture

The large aperture dial (direction setting possible) is designed for easy manual operation. You also can add backlight correction or spotlight correction to the auto aperture function.

### Gain, ND Filter

Increases gain up to 18 dB. The selector has three positions: L is fixed at 0 dB; M and H can be set to 0, +3, +6, +9, or +12 dB. +18dB can also be quickly accessed by the use of the USER 1, 2 or 3 switch. Two ND filters (1/8 ND, 1/64 ND) are built-in and easily accessible.

### Slow, Synchro and High Speed Shutter

Used with the variable frame rate functions, this allows you to create a blurring effect or crystal clear stop motion sports action.

The AG-HVX200A also features a synchro scan function that's suitable for capturing screen shots from a computer monitor.

## Scene File, User Buttons and Auto Functions for Quicker, Easier Shooting

### Scene File Dial

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

You can transfer the settings to an SD Memory Card and load them into other cameras, making it easy to set up multiple cameras on a shoot.



### Three User Buttons

The AG-HVX200A has three user buttons, each of which can be assigned any one of 12 functions (rec check, spotlight, backlight, black fade, white fade, ATW, ATW lock, gain 18dB, focus ring, memo/index, slot sel, shot mark). The assigned functions can then be accessed at the touch of a button.

### Auto/Manual Mode Selector

Just select the auto position to turn on Auto Aperture, Auto Gain, Auto Tracking White Balance, and Auto Focus — and you are immediately ready to shoot. You can also customize the auto mode by removing functions and setting the gain to any value desired.

### White Balance with the Auto Tracking White Function

One press of the AWB button is all it takes to adjust the white balance and black balance. There are three white balance values to select from: one that's preset, and two (A, B) that you can set and save in memory. The auto tracking white balance (ATW) function can also be assigned to any of the three positions. The ATW mode supports fast, active shooting by adjusting the white balance in real-time as lighting conditions change.

## XLR External Microphone Inputs and Manual Adjustment Capability Meets Professional Audio Needs

### XLR Audio Inputs

In addition to the built-in stereo microphone, the AG-HVX200A 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. In DV mode, Audio is locked to the video signal unlike consumer DV Camcorders.



### Audio Dials and Flexible Input Selection

The AG-HVX200A has the same kind of level-adjustment dials as DVCPRO camcorders. This practical design incorporates professional operating features that have been refined over years of use on location. A switch lets you select built-in mic, input 1, or input 2 for the audio input of both channel-1 and channel-2. Auto level control can be turned on or off.



Ergonomic Design Throughout –  
Including the Viewfinder, Monitor and Handgrip

### Large Electronic Viewfinder

The large viewfinder makes it easy to view content, even with your eye at a slight distance, and it tilts upward 90 degrees for easy low-angle shots. The AG-HVX200A also has a detail (PEAKING) function.

### 3.5" Color LCD Monitor

The large, bright LCD monitor opens all the way to 120 degrees and swivels freely within a range of 270 degrees. This makes it easy to shoot from a variety of angles and view the image comfortably. In 16:9 wide-screen mode, the AG-HVX200A can display images in letterbox format.

### Trigger and Zoom Control on Upper Handle Grip

In addition to the lens grip, the upper part of the handle grip contains both the Rec Start/Stop button and a lens zoom control. This design assures easy shooting even at low angles or when using a tripod. The zoom speed can be set to any of three speed levels or off.



### Magnesium Alloy Chassis

The AG-HVX200A has the same magnesium alloy diecast chassis as our DVCPRO broadcast models. This ultra-tough, ruggedly built camcorder protects the precision parts within, giving the AG-HVX200A outstanding reliability and durability. Built for professionals, the AG-HVX200A stands up to the bumps and jolts that may occur in the field.

### Support Functions for Greater Convenience

- **Mode check:** Displays a list of the camera settings on the viewfinder and monitor.
- **Zebra:** Select any two levels from among 50% to 105%, in 5% steps.
- **Tally lamps:** Provided on the unit's front and rear, and menu switchable.
- **Center Marker:** Provides an accurate numeric display of the brightness at screen center.
- **Remote:** Controls zoom, rec, focus and iris

### Advanced Image Adjustments Built-In

- Matrix setting including "Cine-like" mode
- Adjustable V detail level, detail coring and skin detail
  - Adjustable chroma phase, color temp and master pedestal
  - Knee point settings: Auto, Low, Mid and High



# System Interfaces

THE ADAPTABILITY TO MEET NEEDS IN TODAY'S HD AND IT ERA

## Compatible with Mac and Windows Nonlinear Editing

With its IEEE 1394 (4-pin) and USB 2.0 interfaces, the AG-HVX200A connects directly to Mac and PC.\*1

The IEEE 1394 port supports SBP2 (Serial Bus Protocol 2) and allows direct connection to a Mac, making it easy to transfer P2 files for use with FinalCutPro nonlinear editing software. When you've recorded on mini DV tape, the AG-HVX200A can stream to a conventional DV-compatible nonlinear editing system.

The USB 2.0 interface lets you transfer P2 files to a Windows PC for use with a nonlinear editing system (Adobe, Avid, Grass Valley or Matrox products). These two interfaces provide you the best performance for Mac and Windows nonlinear editing systems.\*2

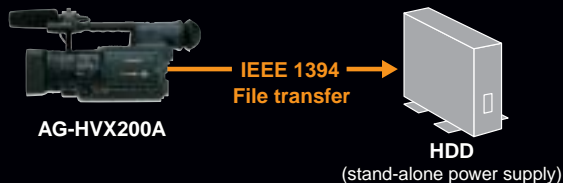
## External Recording with IEEE 1394 Streaming

The IEEE 1394 interface can be used to control an external device synched with the camera's Start/Stop operation, making it easy to create backup recordings. For DVCPRO HD recording, compatible device is the AJ-HD1400. Also when used in combination with the Firestore Drive, the FS-100 or the P2 Gear, the AG-HPG10, the time for recording can be extended by virtue of the additional cards or the size of the HDD in the Firestore. Note that the Firestore can take the full 720P/24 over 60 frames signal out of the 1394 connection and record in the 24PN mode, giving you over 4.5 hours of recording time on the FS-100-160.



## Transferring Files to an External HDD

The AG-HVX200A offers a host function. Insert a P2 card in the card slot, and data can be transferred to an external Hard Disk Drive (AC Power Supply needed) via the IEEE 1394 port.



## Analog Component Signal Output

The AG-HVX200A is equipped with analog component signal (Y, Pb, Pr) terminals for outputting 1080i, 720p and 480i (each 59.94 Hz) camera video signals. This lets you preview recorded clips on an ordinary HD/SD TV monitor.

## 16:9 Squeeze and Letterbox Modes

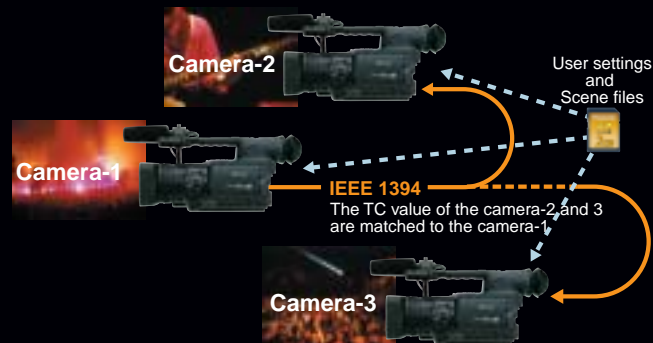
The AG-HVX200A can record in SD with a 16:9 or 4:3 aspect ratio. When 16:9 is selected, the AG-HVX200A can record in native 16:9 recording or can be switched to a letterboxed 4:3 image.

## TC Set and User File Copy with Multi-Cameras

Connecting two AG-HVX200A cameras with a IEEE 1394 cable allows the second camera to synchronize with the first camera which enables time-code-matched editing with multiple cameras. This cable does not need to stay connected. 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.

User files (with sets of camera settings) can be transferred to an SD Memory Card and shared with other cameras. This makes multiple camera set-ups fast and easy. Scene Files and Operational files are separated so that if only the "look" is desired that can be used vs, all of the camera's operational settings which would include everything from Viewfinder Display to Recording Format.

\* Regenerate — available in tape mode.



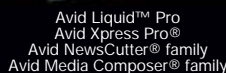
## Compatibility with Nonlinear Editing Systems

In developing DVCPRO and P2 products, Panasonic has been working in collaboration with a number of strategic P2 Partners. The results are products that offer maximum compatibility with existing hardware and software, including IT-based system platforms and nonlinear editors and network servers.

Adobe, Apple, Avid, Grass Valley, Matrox and MainConcept have announced support of the DVCPRO HD P2 file recorded by the AG-HVX200A. Using nonlinear editing systems from these three leading companies, you can produce High Definition video from native DVCPRO HD files.\*2



\*Product name is subject to change in the future.



\*1: The PC must have the P2 Driver installed in order to mount the P2 Cards. For editing, the PC must have P2 Compatible editing software installed. Read "Notes Regarding the Handling of P2 Files Using a PC" on the back page.

\* 2: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.

# Versatile Operating Style A TOOL TO SATISFY EVERY VIDEO PROFESSIONAL

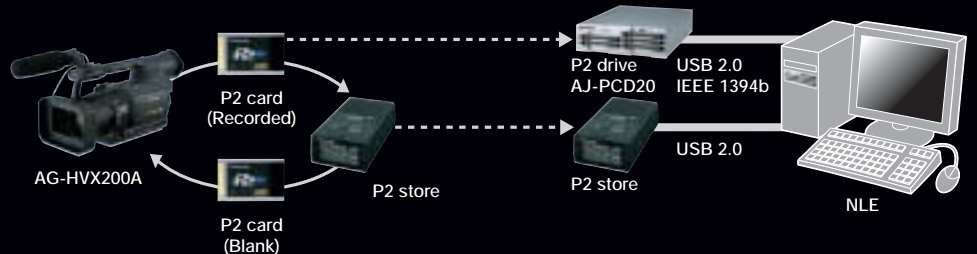
## Simple Solution

Using just an AG-HVX200A 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.



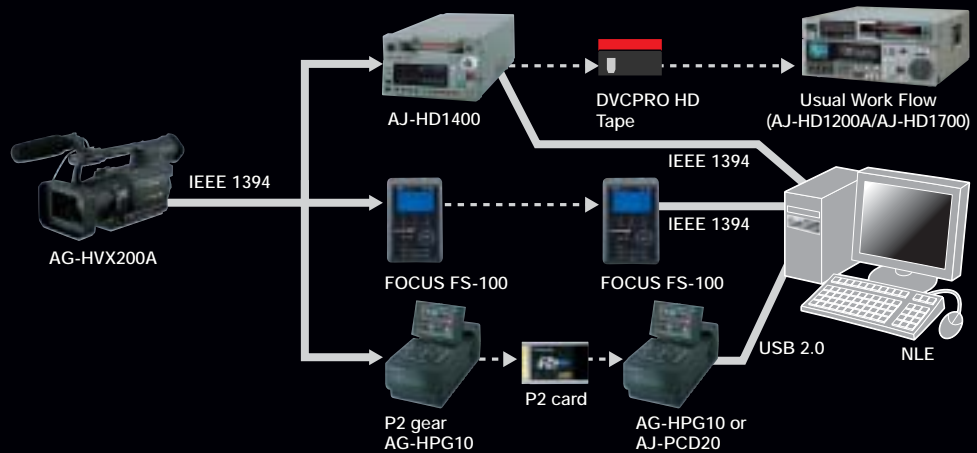
## News Gathering

Out in the field, the P2 Store hard 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-HVX200A is a perfect solution for the new environment as it can get in places that bigger cameras may not be allowed.



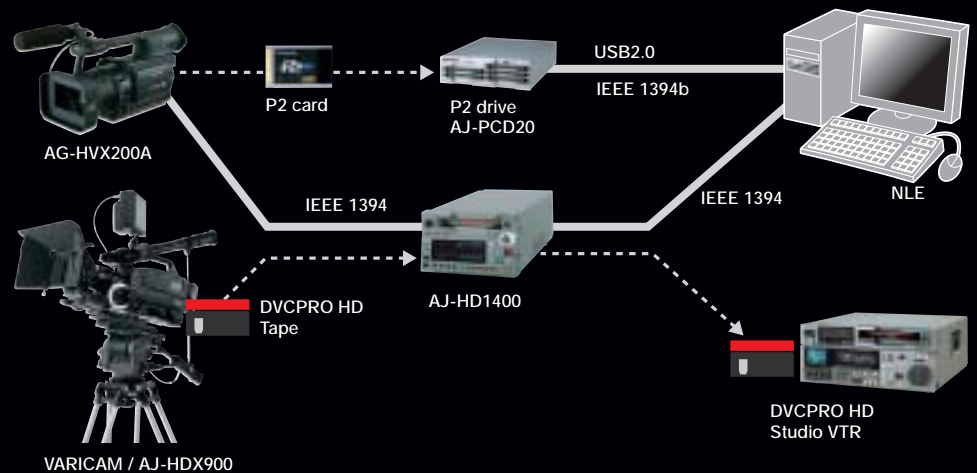
## HD TV Program Production

Program creation for HDTV can be made in the 1080i or the 720P format with the AG-HVX200A. 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.



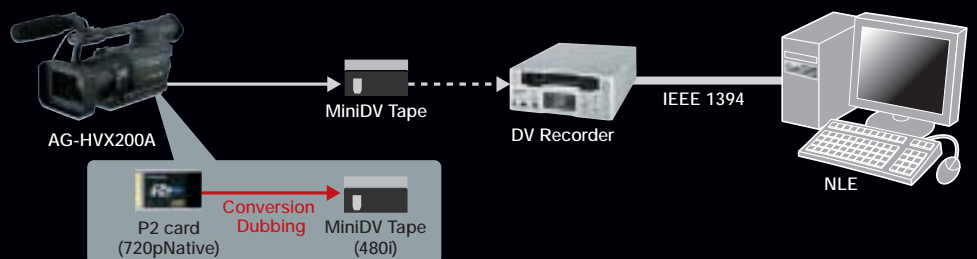
## Film, Commercial and Video Production

Use the AG-HVX200A as a main camera on an independent film shoot, or as a second camera on an VariCam or AJ-HDX900 HD production. Or it can be used in a high-end SD production with the AJ-SDX900. The HVX200A records in all of these formats so that you can go where you need to go with the camera. Its size and flexibility make it the camera of choice for many applications; it is mobile, and maneuverable, ready for all kinds of specialty shots.



## As a High-End DV Camera

The AG-HVX200A can record in any of the 60i, 30p, 24p and 24pA (Advance) modes used by DVX100 series equipment. Further, thanks to the P2 card recording and down-conversion function, you can copy overcranked and undercranked HD recording in 720p native mode to mini DV tape. This allows you to offer fast-motion and slow-motion effects in DV productions that here-to-fore just could not be accomplished without a complete VariCam System.





Side view (with LCD monitor open)



Side view (with terminal cover removed)



Rear view



Top controls (including playback and thumbnail functions)

# Specifications

## GENERAL

|                        |  |
|------------------------|--|
| Supply Voltage:        | DC7.2V / 7.9V  |
| Power Consumption:     | 11.6W (when viewfinder is used), 12.0W (when LCD monitor is used)<br>MAX 14W |
| Operating Temperature: | 0°C to +40°C (32°F to +104°F)  |
| Operating Humidity:    | 10% to 85% (no condensation)   |
| Weight:                | Approx. 2.5kg (5.5 lbs) excluding battery and accessories                    |
| Dimensions (WxHxD):    | 168.5 x 180 x 390 mm (6-11/16" x 7-1/8" x 15-3/8")                           |

## 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 to F 2.8 (f= 4.2mm to 55mm) (35mm equivalent: 30.3mm to 394mm)  |
| Optical Color Separation:     | Prism system   |
| ND Filter:                    | 1/8, 1/64  |
| Gain Selection:               | 60i/60p mode: 0/+3/+6/+9/+12/+18 dB (when using slow shutter, 0 dB fixed)<br>30p/30pN/24p/24pA/24pN mode: 0/+3/+6/+9/+12 dB (when using slow shutter or VFR rate of less than 24p: 0 dB fixed)   |
| Frame Rate:                   | variable 12/18/20/22/24/26/30/32/36/48/60 fps (frame/sec)  |
| Shutter Speed: (Preset)       | 60i/60p mode: 1/60 (OFF), 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000 sec.<br>30p/30pN mode: 1/30, 1/50 (OFF), 1/60, 1/120, 1/250, 1/500, 1/1000 sec.<br>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.<br>30p, 30pN mode: 1/30.0 sec. to 1/249.8 sec.<br>24p, 24pA, 24pN mode: 1/24.0 sec. to 1/249.8 sec.   |
| Aperture Angle:               | 10° to 350° (Shutter Angle is selectable under Film Cam Mode.)   |
| Slow Shutter Speed:           | 60i/60p mode: 1/15, 1/30 30p/30pN mode: 1/15 sec.<br>24p, 24pA, 24pN mode: 1/12 sec. (only in 720p mode)   |
| Minimum Luminance:            | 3 lx (F1.6, +12 dB gain, at 1/24 shutter)  |
| Lens Hood:                    | Large lens hood with wide view angle   |
| Filter Diameter:              | 82mm   |

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

|                     |   |
|---------------------|---|
| Sampling Frequency: | Y: 74.25 MHz, Pb/Pr: 37.125 MHz                     |
| Quantizing:         | 8 bits  |
| Compression:        | Compression ratio 1/6.7, DCT + variable length code |
| Recording Bit Rate: | 100Mbps   |

## 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:*1     | DVCPRO HD<br>1080/60i (30p over 60i, 24p over 60i, 24pA over 60i),<br>720/60p (30p over 60p, 24p over 60p),<br>720/30pN (Native Record), 720/24pN (Native Record)<br>DVCPRO 50/DVCPRO/DV<br>480/60i (30p over 60i, 24p over 60i) |
| Audio Recording Format: | PCM digital recording 48 kHz / 16 bits<br>4ch (DVCPRO HD/DVCPRO 50), 2ch/4ch selectable (DVCPRO/DV)  |
| Recording Time**:       | 32 minutes with one AJ-P2C032RG (DVCPRO HD, 1080/60i)<br>(Approx.)<br>80 minutes with one AJ-P2C032RG (DVCPRO HD, 720/24pN)  |

## VTR part General

|                          |   |
|--------------------------|---|
| Recording Format:        | Digital Video SD  |
| Tape Format:             | Mini DV cassette (6.35mm width metal evaporated tape)   |
| Recording Video Signals: | 480/60i (NTSC Digital Video, Standard Definition),<br>24p/24pA/30p mode (all convert to 480/60i and record) |
| Frame Rate:              | 60i (480i), 24p, 24pA, 30p  |
| Recording Audio Signals: | PCM digital recording, 16 bits: 48kHz/2ch or 12 bits: 32kHz/4ch   |
| Wow & Flutter:           | Below measurable limits   |
| Recording Tracks:        | Digital video / audio signals: helical track<br>Time code: helical track (sub-code area)                    |
| Tape Speed:              | SP mode: 18.812mm/sec, LP mode: 12.555mm/sec  |
| Recording Time:          | SP mode: 63 min. (When using AY-DVM63MQ)  |
| FF/Rew Time:             | Approx. 140 sec. (when AY-DVM63MQ is used)  |

## VIDEO connectors

|                       |   |
|-----------------------|---|
| Video Out:            | Analog component, Y: 1.0Vp-p, 75Ω, Pb/Pr: 0.7Vp-p, 75Ω  |
| Video In/Out:         | Pin Jack x 1, Analog composite, 1.0Vp-p, 75Ω<br>(In/out automatically switched, Input DV tape mode only)  |
| S-video In/Out:       | 4-pin, Y/C Y: 1.0Vp-p, 75Ω, C: 0.286Vp-p, 75Ω<br>(In/out automatically switched, Input DV tape mode only) |
| Component Analog Out: | D-Connector for HD Images   |

## AUDIO connectors

|                      |  |
|----------------------|--|
| XLR In:              | XLR (3 pin) x 2 (Input 1/ Input 2), Input: High impedance<br>Line: 0dBu, MIC: -50/-60 dBu (selectable in menu) |
| Line In/Out:         | Pin Jack x 2 (Input 1/ Input 2), (automatically switched),<br>In: High impedance 316mV, Out: 600Ω, 316mV       |
| Internal Microphone: | Stereo Microphone  |
| Phones:              | Stereo Mini jack (3.5mm diameter)  |
| Internal Speaker:    | 28mm round shape x 1   |

## OTHER connectors

|                |   |
|----------------|---|
| IEEE 1394:     | 4-pin Digital input/output, based on IEEE 1394 standard   |
| USB:           | Type mini B connector (USB ver.2.0)   |
| Camera Remote: | Zoom, Rec (Start/Stop) Super Mini jack (2.5mm diameter)<br>Focus Iris, Mini jack (3.5mm diameter) |
| DC Input:      | 2P x 1, 7.9V  |

## 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: 160g, Dimensions: 70 (W) x 44.5 (H) x 116 (D)mm  |
| Supplied Accessories: | AC adapter/charger, AC Cord, DC Cord, Battery (5400mAh),<br>Wireless remote controller (Button-type battery), Microphone holder,<br>Eye cup, Shoulder strap, Ferrite core, Component Video cable,<br>Pin-BNC conversion plug, P2 card software driver install (CD-ROM) |

\*1: For the precise recording rate, multiply the indicated value by 1/1.001.

\*2: 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.

# 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-D54S Battery Pack (5.4 Ah)



Century Conversion Lens

- .6X Wide Angle Adapter  
**OHD-06WA-HX2**
- .75X Wide Angle Converter  
**OHD-75CV-HVX**
- 1.6X Tele-Converter  
**OHD-16TC-HVX**
- Fisheye Adapter  
**OHD-FESU-HVX**

### Precautions for Use

- Mounting a wide conversion lens or fisheye adaptor may disable focusing at the telescopic setting (zoom position Z = approx. 80 or more).
- When the tele-converter is mounted, vignetting can occur at the wide setting (zoom position Z = approx. 60 or lower).
- When a conversion lens is mounted, the total weight can increase by as much as 1.5 times, which causes increased stress on the handle section. To prevent this, use a tripod and make sure that the handle section is not subjected to extra weight.



AG-B25 AC adapter kit



AJ-PCD20 P2 Memory Card drive



AJ-PCS060G P2 "Store" portable hard disk unit



AJ-HPG10 P2 "Gear" memory card portable recorder



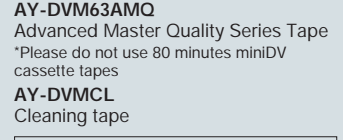
AJ-P2C016RG / AJ-P2C032RG R-series memory card



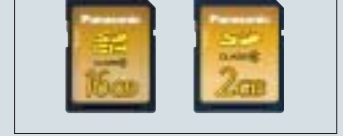
AY-DVM63PQ Professional Series Tape



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



AY-DVM63AMQ Advanced Master Quality Series Tape



AY-DVMCL Cleaning tape



BT-LH26000W 26" HD/SD LCD monitor

BT-LH1760 17" HD/SD LCD monitor

BT-LH1700W 17" HD/SD LCD monitor

BT-LH900A 8.4" HD/SD LCD monitor

BT-LH80W 7.9" HD/SD LCD monitor

### P2HD UTILITY SOFTWARE

You can download the following P2 Utility Software at panasonic web site.  
<<https://www.pavc.panasonic.co.jp/pro-av/support/desk/e/download.htm>>

#### Utility Software:

- P2 Store Manager
- Drive Mount Converter
- P2 Viewer
- P2 Contents Management Software
- P2 Card Format Station
- CAC File for P2 Camera-Recorder



P2 — BRINGING GREATER SPEED AND CREATIVITY TO THE CONTENT CREATORS

## P2 Asset Support System (PASS)

This model can be registered to P2 Asset Support System (PASS) that is an exclusive support program for P2HD owners.

### Benefits of registration to P2 Asset Support System (PASS)

- You can receive useful information on P2 and AVCHD.
- PASS helps you to manage your equipment with P2HD products together. You will see more benefits as a PASS member once you log in.

Please access the registration website. No registration fee. No annual fee. Register Now!

5 year warranty program is **NOT** applied to this model.

Please read and agree with terms and conditions upon registration



Purchase



Register online



"Registration Notice" e-mail sent



You can use P2 Asset Support System!

[http://panasonic.biz/sav/pass\\_e](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://www.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://www.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://www.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.

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

SP-HVX200AP1



30K803ZM-1 Printed in Japan



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