

Panasonic
ideas for life

P2HD

AG-HPX500 series

Memory Card Camera-Recorder
(AG-HPX500P/AG-HPX500E/AG-HPX500EN)

P2HD



DVCPRO HD DVCPRO 50 DVCPRO DX

Superior Recording Quality in Both HD and SD

Broadcasters and video professionals all around the world have already joined the P2 revolution. Now this advanced technology is available to even more professional videographers.

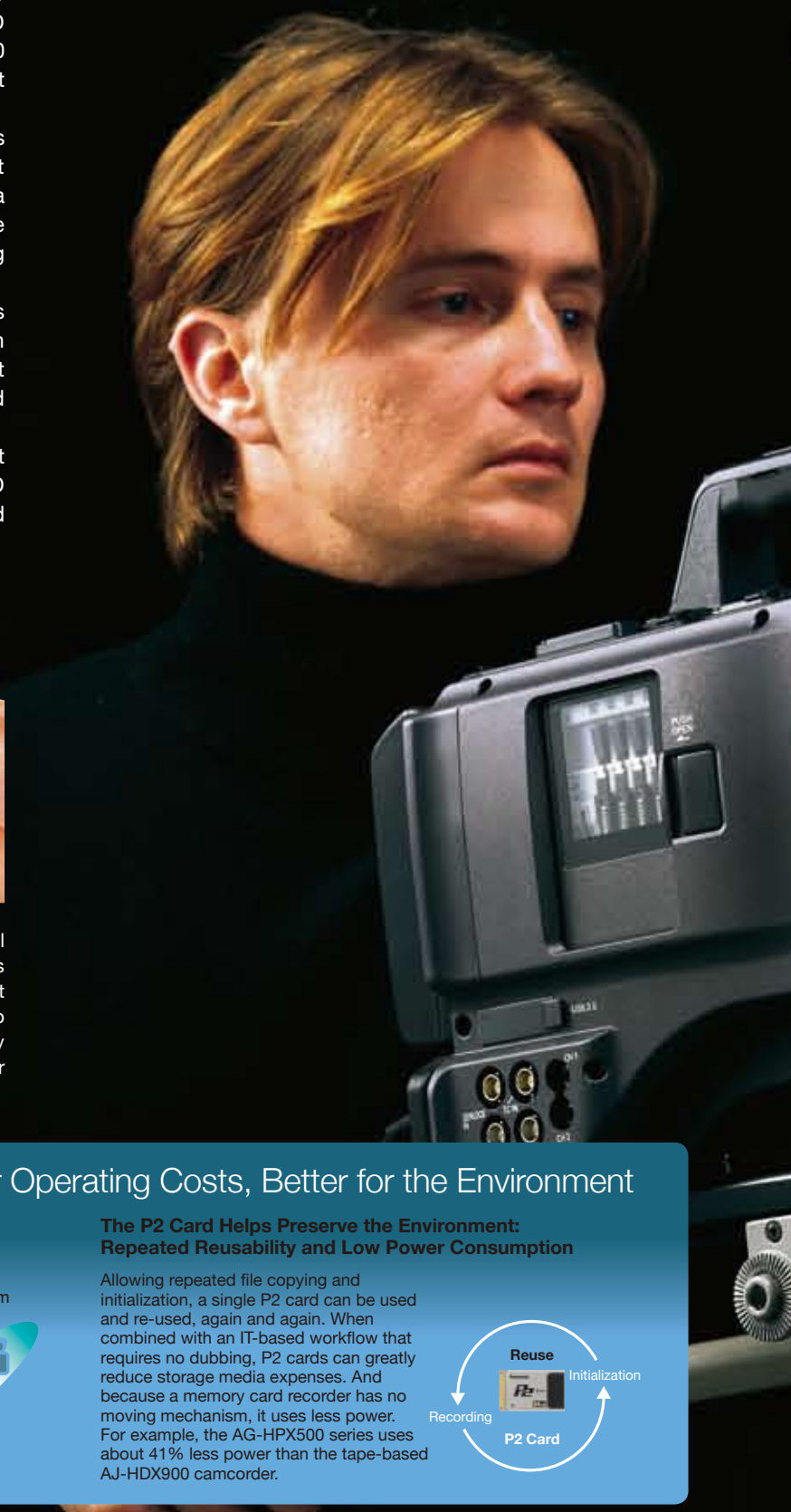
The AG-HPX500 series Memory Card Camera-Recorder debuts as the newest 2/3" camcorder in the P2 HD Professional Series, which includes the AG-HVX200 handheld and the AJ-HPX2000/2100 shoulder-mount units.

Featuring a 2/3 inch lens mount that accepts interchangeable lenses, HD/SD multi-format compatibility with 50 Hz/60 Hz selectability, and a variable frame rate function that allows cine-like picture quality, this new camera-recorder has everything professionals need to create high-quality video content. Equipped with four P2 card slots, the AG-HPX500 series allows extended HD recording time and delivers the high reliability, quick recording starts and IT benefits that distinguish P2 and revolutionize the recording and editing workflow.

The AG-HPX500 series is an exceptional cost-efficient performer for applications that demand full-fledged HD production quality and the advantages of fast IT-based workflow.

P2 Card Recording Brings the IT Revolution to Video Production

Neither tape nor disc, the P2 card is a semiconductor memory device that can hold large amounts of video and audio data. The P2 card's advanced AV technology bring the proven benefits of an IT workflow to broadcasting and video production. Memory card recorders have no drive mechanism, so maintenance costs are much lower. And with their outstanding resistance to impact, vibration, temperature change, dust and other environmental conditions, they offer the high reliability you need in news acquisition and video recording. P2 also transfers data at higher speeds than optical discs or hard drives, so video production is quicker. And P2 files can be transferred as they are — no digitizing required - to nonlinear editors and other network-connectable equipment.



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

P2 Reduces Total Cost of Ownership

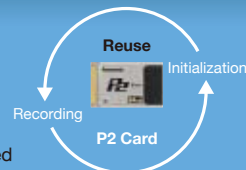
- (1) Faster, easier editing because digitization is not necessary
- (2) Lower media costs because memory cards are reusable
- (3) Lower maintenance costs because there is no moving mechanism

By 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. And because a memory card recorder has no moving mechanism, it uses less power. For example, the AG-HPX500 series uses about 41% less power than the tape-based AJ-HDX900 camcorder.



A P2HD Camera-Recorder That's Built for Professionals



- *Supports worldwide HD/SD recording formats at the price of an SD camera-recorder*
- *Advanced P2 technology provides fast, rugged performance plus IT connectivity*
 - *2/3-inch interchangeable lens system*
 - *Variable frame rate function*
- *Chromatic Aberration Compensation (CAC)*
- *Four P2 card slots for continuous or Hot-swap recording*

Professional HD Quality

Progressive 3CCD and 2/3-inch Interchangeable Lens System for Full-Fledged HD Video Production



2/3-Inch Interchangeable Lens System

The 2/3-inch bayonet mount allows use of a wide assortment of broadcast and professional lenses from a number of companies*. 2/3-inch zoom lenses make it easier to capture the shallower depth of field often used in professional videos.

Chromatic Aberration Compensation (CAC)

This exclusive technology sets up a conversation between lens and camera which allows for a highly sophisticated algorithm to be deployed which will automatically compensate the registration error that is caused mainly by lens chromatic aberration, and minimize the circumjacent blur.



Full screen image (simulated**)

CAC OFF (simulated**)

CAC ON (simulated**)

Progressive 3CCD

The AG-HPX500 series 2/3-inch progressive 3CCD* has a larger light receiving area for higher sensitivity, and achieves an optimal balance among image quality, sensitivity and cost.



Interlace scanning frame image (simulated**)

Progressive scanning frame image (simulated**)

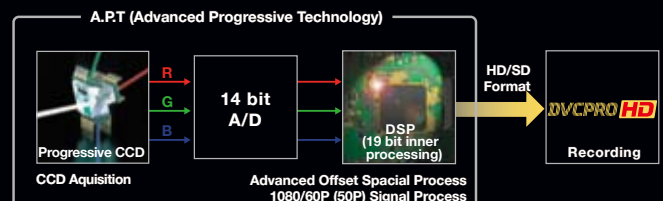
The camera process scans at full 1080/60 (or 50) progressive frames a second. It is this initial capture that is the foundation for all of the formats that this camera generates. While the camera does not record 1080P/60(or 50), the signals start there and are either cross converted or down converted to the format being utilized that day.

* The effective image size of the CCD is equivalent to 2/3.2 inches.

APT for Higher Image Quality

Advanced progressive technology (APT) produces higher total image quality by linking the progressive 3CCD camera system with a high-performance digital signal processor (DSP). In APT, an extremely accurate CCD alignment process is used to offset the pixels on the red and blue channels in both the Horizontal and Vertical directions. This allows for additional resolution to be gained from areas of the green CCD which are non-photo-sensitive. The R, G and B color signals from the 3 CCDs are then sent through a 14 bit A/D converter. Next, a 19 bit DSP performs a highly precise calculation* on the signals to generate 1080/60P (50P) video signals. The signals are then converted into HD or SD format and recorded. By using these progressive video signals, with their excellent vertical resolution, as source signals, a high level of image quality is achieved that would be difficult to obtain by interpolating from interlace scans.

* Called an advanced offset spatial process.



** "Simulated" images were produced in order to describe the function. It is not a screen capture of an actual image. It differs from an actual image in that the effect of the function has been emphasized for easier understanding.



HD/SD Multi-Format Capabilities

Supporting 32 HD/SD video recording formats, the AG-HPX500 series meets professional needs in news acquisition and in the production of TV programming, independent films and other demanding video content. Its versatility allows this content to be distributed worldwide. For 1080i/720p HD recording, the AG-HPX500 series uses the DVCPRO HD codec, with its proven track record in higher end production applications. For SD recording, the AG-HPX500 series multi-codec capabilities let you select from DVCPRO50, DVCPRO and DV video quality.

Extended Recording with Four Slots for 64GB P2 Cards

The AG-HPX500 series has four P2 cards slots so you can record continuously onto all four in sequence. Using four of the new 64GB P2 cards, you can record up to 256 minutes of HD recording (1080/60i or 720/60p, 4 cards x 64 minutes = 256) or 512 minutes of SD (DVCPRO 50) recording (4 cards x 128 minutes = 512).

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

The AG-HPX500 series can record full 48-kHz/16 bit digital audio on all four channels. You can freely select the audio source for each channel, choosing from mic-in and line-in. In addition you can control the audio level on each of these channels independently.



Video format and codec supported by AG-HPX500 series

Recording Video Format *1	Rec. Time*3	Codec	
HD 60Hz	1080/60i	256 min.	DVCPRO HD
	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)*2		
720/30pN (Native)*2	512 min.		
HD 50Hz	1080/50i	256 min.	DVCPRO HD
	1080/25p (over 50i)		
	720/50p		
	720/25p (over 50p)		
	720/25pN (Native)*2	512 min.	
SD 60Hz	480/60i	512 min. (DVCPRO 50) 1,024 min. (DVCPRO/DV)	DVCPRO 50
	480/24p (over 60i)		
	480/24pA (over 60i)		
	480/30p (over 60i)		
SD 50Hz	576/50i	512 min. (DVCPRO 50) 1,024 min. (DVCPRO/DV)	DVCPRO 50
	576/25p (over 50i)		

*1: 24p=23.98p, 30p=29.97p, 60p=59.94p and 60i=59.94i

*2: In the Native mode, AG-HPX500 series record only active frames.

*3: using four 64GB P2 cards. (1/4 with a single card)

Recording time varies depending on the video format, codec, and recording setting.

Shooting Performance

A Host of Features and Functions, Including a Variable Frame Rate Function for Cine-Like Video Production



Variable Frame Rate

In 720p mode,* the frame rate can be set from the conventional 24p/30p to any of 11 steps between 12p and 60p (or 50p). Like the VariCam, the AG-HPX500 series allows undercranking and overcranking common in film cameras, to create fast-motion and slow-motion effects.

* In 1080 and 480 modes, the frame rate is fixed at 24p/30p (25p in the 50-Hz mode).

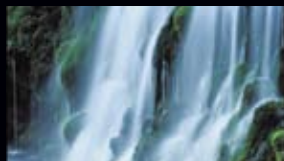
Higher-rate shooting produces a slow-motion effect.

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



Lower-rate shooting creates a fast-motion effect.

This technique can be combined with a Slow Shutter Speed to emphasize movements, such as flowing water or fast-moving clouds.



Native and Over-60p (50p) Modes

- **720p Native Mode:** The AG-HPX500 series records images at the frame rate set in the camera. Using the AG-HPX500 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.
- **720p over 60p (or 50p) Mode:** 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-HD1400 DVCPRO HD recorder or AG-HPG20 P2 portable recorder.

Table of Frame Rate and Speed Effect

60Hz Mode			50Hz Mode	
Supported Frame Rate	Speed Effect in 24p base	Speed Effect in 30p base	Supported Frame Rate	Speed Effect in 25p base
12 fps	200% Faster	250% Faster	12 fps	208% Faster
18 fps	133% Faster	167% Faster	18 fps	138% Faster
20 fps	120% Faster	150% Faster	20 fps	125% Faster
22 fps	109% Faster	136% Faster	23 fps	108% Faster
24 fps	100% Standard	125% Faster	25 fps	100% Standard
26 fps	92% Slower	115% Faster	27 fps	92% Slower
30 fps	80% Slower	100% Standard	30 fps	83% Slower
32 fps	75% Slower	94% Slower	32 fps	78% Slower
36 fps	66% Slower	66% Slower	37 fps	67% Slower
48 fps	50% Slower	62% Slower	48 fps	52% Slower
60 fps	40% Slower	50% Slower	50 fps	50% Slower

1080/480 24p Advance Mode

When recording in 1080/24p or 480/24p at 60 Hz, the AG-HPX500 series lets you select 24pA (Advance) mode. In this mode, it performs 60i conversion using 2:3:3:2 pulldown, which maintains higher image quality than ordinary 24p (2:3 pulldown) in nonlinear editing*. In 30p and 25p recording (at 50 Hz), the AG-HPX500 series uses 2:2 pulldown.

* For compatibility details, visit https://www.pavc.panasonic.co.jp/pro-av/sales_o/ieee1394

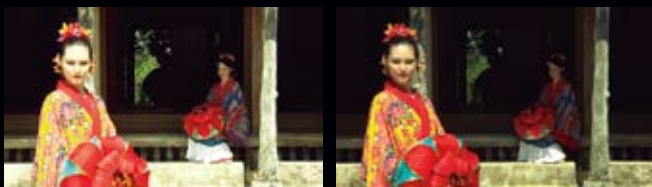


Slow, Synchro and High-Speed Shutter

Used with the variable frame rate function, this allows you to create a blurring effect or crystal-clear stop-motion of sports action. The AG-HPX500 series also features a synchro scan function for capturing screen shots from a computer monitor.

Cine-Like Gamma (Eight-Mode Gamma)

Drawing on technologies developed for the VariCam, Panasonic has equipped the AG-HPX500 series with advanced gamma functions that address eight different shooting scenarios and expand your creative abilities. Included are Cine-Like Gamma, which gives recordings the characteristic warm tone of film recordings, and a News Gamma that's designed especially for news gathering.



HD NORM Mode Image

CINE-LIKE D Mode Image

AG-HPX500 series 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 high-contrast scenes
SD NORM:	Normal setting for SD
HIGH:	Provides additional contrast and color gradation
B.PRESS:	Provides more contrast and richer blacks to low-contrast scenes
CINE-LIKE D:	Shifts the Cine-Like mode to prioritize dynamic range
CINE-LIKE V:	Shifts the Cine-Like mode to prioritize contrast

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 also transfer the setting files to an SD Memory Card for loading into another AG-HPX500 series so the cameras will match.

Shooting Assist Functions

- Three User Buttons: Assign a function to each, and then you can select those chosen functions with pushbutton ease.
- Focus Assist: Facilitates focusing using a very effective histogram display.
- Eight chromatic aberration correction(CAC) files (fixed) and four shading correction files support a variety of interchangeable lenses.
- Color temperature can be adjusted after the white balance is set.
- Rec Review function for easy checking of recorded results
- 4-position optical neutral density filter wheel

Designed for Easy Operation

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

- The Audio Rec level adjustment features a push lock function.
- The Audio Input level adjustment (front) can be switched ON/OFF and allocated to desired channels.
- The viewfinder mount allows easy and precise adjustment.

P2 Recording Function

Four Slots for Quick Recording on Reliable P2 Memory Cards



P2 Cards: High Capacity, Fast Transfer and Superior Reliability

P2 cards feature a large capacity of up to 64 GB^{*1}, a compact size, and light weight. In addition to the semiconductor memory's inherent resistance to impact, vibration and temperature change, the P2 card also offers outstanding reliability. Unlike tapes and discs, it has



no rotating or physically contacting parts. It's built to withstand repeated recording and initialization over many years of use. The P2 card connector is specifically designed to stand up to the repeated insertion and removal involved in professional use. The low-cost E Series^{*2} (AJ-P2E016XG, AJ-P2E032XG, and AJ-P2E064XG) provides a new level of convenience by meeting a wide range of user needs.

The AG-HPX500 series records the A/V data for each recording as a file on the P2 card, which eliminates the need for digitizing. The files can be used directly in a nonlinear editing system^{*3} or transferred over a network or simply onto a Hard Disk Drive. The P2 card transfers data at a high speed up to 1.2 Gbps^{*4} giving you faster, easier operation. The P2 card is convenient too — you can plug it directly into the card slot on certain laptops.

^{*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/>.

^{*4}: PCs must be installed with the included P2 driver in order to mount P2 cards. 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.

^{*5}: 1.2Gbps is maximum transfer speed when using P2 card E series. Transfer speed is subject to be changed depended on system configuration.

Immediate Startup and Better Data Protection

When you press the Record button in standby mode, the AG-HPX500 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.

Advanced Recording Functions Employing Four Card Slots

In addition to continuous, multiple-card recording, the four P2 card slots of the AG-HPX500 series also enable some useful new recording functions that are possible only with memory cards.

- **Card selector:** The recording slot can be switched instantly when the unit is in standby mode. Immediately after recording a clip, you can remove the P2 card and use it in editing or transmission. This lets you continue your recording work with much shorter downtime than when changing tapes or discs.
- **Hot-swap-rec:** You can replace a full memory card with a blank one while the P2 cam is recording onto a second card. Successively swapping cards gives you virtually unlimited recording capability.
- **Loop-rec:** This function can be specified in length and the camera will continuously record over that area until you push the pause. This allows for a longer record time than pre-record.

Other Versatile Recording Functions

- **Pre-rec:** While in standby mode, you can continuously store, and subsequently record, up to 3 seconds in HD (7 seconds in SD). In effect, this lets you record footage of the beginning of an event when the beginning is unpredictable, like a whale breaching the surface of the water or the unexpected arrival of a key person. This can give you the confidence that you always have your shot.



- **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 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.

The thumbnail image and file information can also be displayed on a PC (using P2 Viewer*) or nonlinear editing software.

* P2 Viewer software for Windows PCs can be downloaded, free of charge.



Clip Thumbnail Display

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-HPX500 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. On your PC*, you can then search for the label and write a memo into it.

* Must have P2 Viewer installed



P2 Viewer

SD Memory Card Slot

Plug an SD card into the slot provided, and you can save or load scene files and user-setting files. You can create a metadata upload file (produced with P2 Viewer) containing information such as the name of the camera operator, the name of the reporter, the recording location, and text memos on an SD Memory Card, and load it as clip metadata.

System and Interface

Comes Equipped with IEEE 1394, USB 2.0 and HD SDI Interfaces. Allows New Camera Studio System.

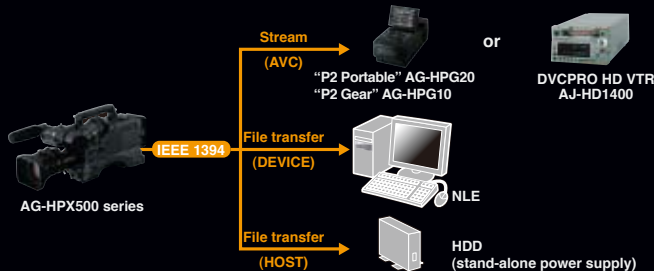


IEEE 1394 Interface

The IEEE 1394-compliant DVCPRO (6-pin) output connector lets you output all HD/SD compression streams without decoding.* This means you can connect and use a DVCPRO HD VTR (such as the AJ-HD1400) or AG-HPG20 P2 portable recorder for degradation-free backup recording.

The IEEE 1394 interface also makes it easy to upload data to a Mac-based or PC-based nonlinear editing system. The AG-HPX500 series also provides a host mode that lets you copy P2 files to a hard drive without using a PC.

* Output is not possible in 720p native mode (24pN 30pN, 25pN).



Compatibility with Nonlinear Editing Systems

DVCPRO HD P2 files recorded by the AG-HPX500 series can be used in nonlinear editing systems made by a variety of manufacturers, making it possible for you to produce HD content in native DVCPRO HD. And because the AG-HPX500 series uses the same recording format as the AG-HVX200 or the AJ-HPX2000/HPX2100, the AG-HPX500 series is compatible with nonlinear editing systems that support our other P2HD cameras.

*The latest compatibility test report with NLEs is shown at <https://www.pavc.panasonic.co.jp/pro-av/> (P2 compatibility table)

USB 2.0 Interface

The AG-HPX500 series comes equipped with a USB 2.0 interface. Connect the AG-HPX500 series to a Windows PC, and you can upload files from a P2 card to the PC for nonlinear editing, or to a network server.

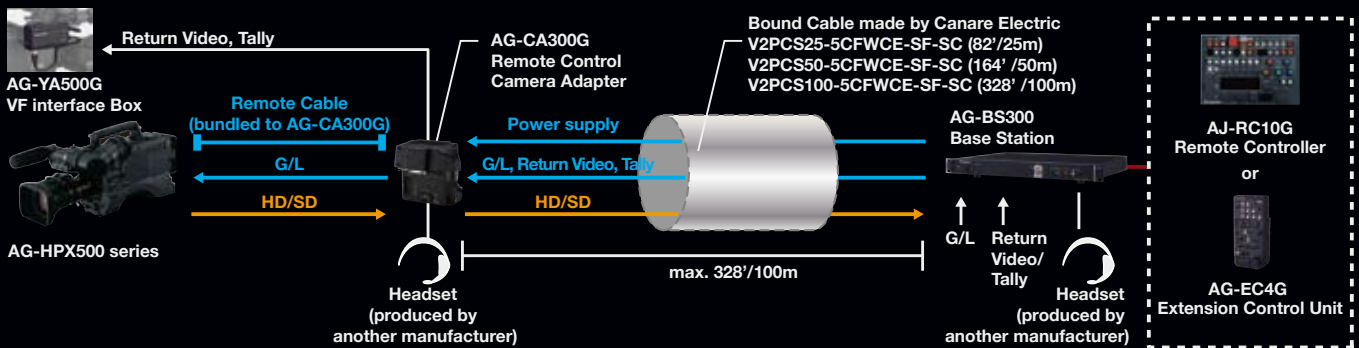


HD SDI/SD Down-Conversion Output

The AG-HPX500 series comes equipped with two BNC video line outputs for flexible monitoring or line recording use.

- **SDI OUT:** Switchable between HD SDI or SD SDI (down conversion). HD SDI output simultaneously backs up recordings to an external digital VTR (such as the AJ-HD1400), 2 portable recorder (such as AG-HPG20) or AVCCAM recorder (such as AG-HMR10) in sync with Rec start/stop.
- **VIDEO OUT:** Outputs down-converted SD video (composite).





New Camera Studio System

A new camera studio system to support low-cost studio integration. Two BNC cables allow the transmission of high-quality HD digital images, return images, tally signals, wireless mic signals, and genlock signals over a cable length of 100 m maximum. An additional cable is needed to run camera power.* The AG-EC4G Extension Control Unit, enables full control over image adjustments and recording, together with the AG-YA500G VF Interface Box, which enables return video viewing with the AG-HPX500 series viewfinder.

*Power can be supplied only when the AG-BS300 Base Station is driven by an AC power source. A separate power cord is also required between the AG-BS300 Base Station and the AG-CA300G Camera Adaptor.

Remote Control-Ready

The AG-EC4G Extension Control Unit or AJ-RC10G Remote Control Unit* offer both studio use and direct connection to the AG-HPX500 series. This lets you adjust the images and control the camera operation while viewing the monitor.

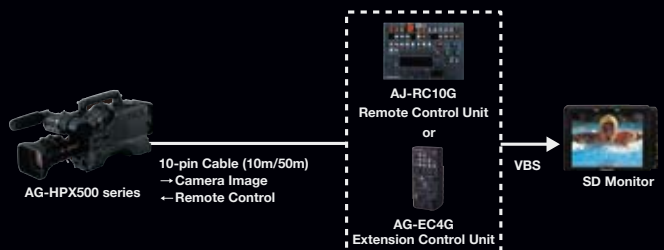
*The AJ-RC10G can control only functions supported by the AG-HPX500 series. It cannot control unsupported keys or dials.

Multi-Camera-Compatible TC-IN/TC-OUT Terminals

The AG-HPX500 series has a built-in SMPTE time code generator/reader. The TC-IN/TC-OUT terminals are independent, so through-connection is possible. The AG-HPX500 series supports TC synchronous recording using multiple cameras.

Other System Functions and Options

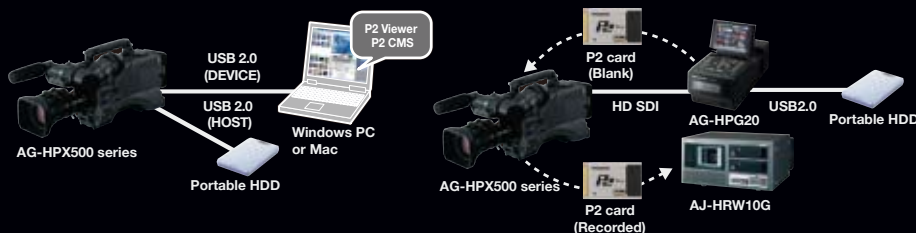
- Analog component (Y/PB/PR) output
- DC power supply for the BT-LH80W 7.9" LCD monitor
- Color bar (full color) and standard audio signal (1-kHz test tone) output
- Multiple battery support, including Anton Bauer batteries



Workflow with P2HD

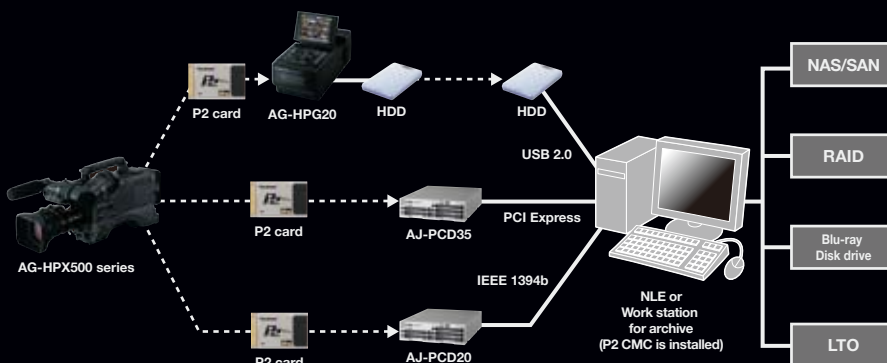
Acquisition and On-site Storage

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*1.



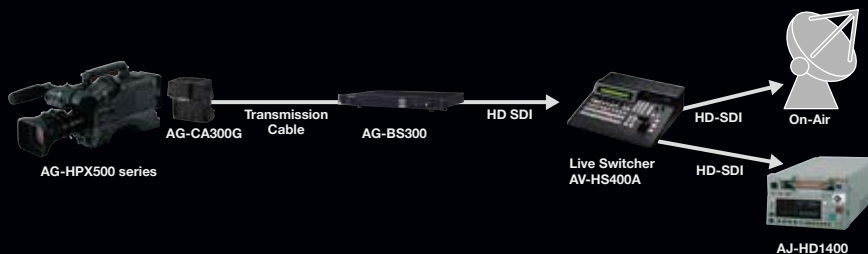
Editing, Production and Archiving

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



Studio, Event Recording, and Broadcast Use

Standard SDI (HD/SD) output on the AG-HPX500 series makes it well suited to broadcast and image production use. It is also a great match for the camera extension system, enabling VE style remote operation with an efficient, low-cost configuration.



*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.
*3: Conversion to file formats requires authoring or conversion software for the desired format.

P2HD Equipment (As of October, 2009)



AJ-P2C064AG
AJ-P2C032AG
AJ-P2C016AG
Memory Card (P2 card A series)



NEW
AJ-P2E064XG
AJ-P2E032XG
AJ-P2E016XG
Memory Card (P2 card E series*)



AJ-PCD35**
Memory Card Drive
"P2 drive"



AJ-PCD20
Memory Card Drive
"P2 drive"



AG-HPG20
Memory Card Portable
Recorder
"P2 Portable"



AG-HPG10
Memory Card Portable
Recorder
"P2 Gear"



NEW
AJ-HRW10G
Hard Disk Storage Unit
"P2 Rapid Writer"



P2 Viewer 3.6
Viewing Software
(Download Free*)



P2 CMS 1.4
Contents Management
Software
(Download Free*)

*1: 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/>
*2: 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/>
*3: For P2 Viewer or P2 CMS download and operating requirement information, visit <https://www.pavc.panasonic.co.jp/pro-av/>.

Optional Accessories

(As of October 2009)



AJ-VF20WB
2" EVF
16:9/4:3 switchable



AJ-VF15B
1.5" EVF for 4:3



KJ10ex4.5B IRSD PS12
KJ16ex7.7B IRSD PS12
KJ16ex7.7B KRSD PS12
KJ20ex8.5B KRSD PS12
KJ21ex7.6B IRSD PS12
CANON 2/3" LENS



XA17x7.6BERM-M58B
XA17x7.6BERM-M58B
ZA22x7.6BERM-M58*
ZA17x7.6BERM-M58H*
ZA12x4.5BERM-M58*
FUJINON 2/3" LENS

*Recommend to use the lens which corresponds to Chromatic Aberration Compensation (CAC) function in the camera.
*Some lenses are not available in some areas.



AG-MC200G
Microphone



AJ-MC700P
Microphone Kit



SHAN-TM700
Tripod Adapter



SD/SDHC Memory Card



AG-CA300G **NEW**
Remote Control Camera Adapter

AG-BS300 **NEW**
Base Station

AG-EC4G **NEW**
Extension Control Unit (ECU)

Camera Studio System
(Will be available later 2009.)
Transmits high-quality images and remote control signals for VE style recording.



AG-YA500G **NEW**
VF interface box



AJ-RC10G
RCU (Remote Control Unit) with
10m remote control cable

AJ-C10050G
Remote Control cable (50m)

* The AJ-RC10G can control only functions supported by the AG-HPX500 series. It cannot control unsupported keys or dials.
*Cable package Model Numbers for the Studio System may vary from country to country



AVCCAM

AG-HMR10 **NEW**
Memory Card Portable
Recorder
"AVCCAM"
AVCHD recording and
HD-SDI input/output.



BT-LH2550
25.5" Wide
HD/SD LCD monitor



BT-LH1760
17" Wide
HD/SD LCD monitor



BT-LH1710
17" Wide
HD/SD LCD monitor



BT-LH900A
8.4" HD/SD LCD monitor



BT-LH80WU
7.9" Wide
HD/SD LCD monitor



BT-CS80G
VF Cable
(Viewfinder Cable,
DC Cable)



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



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



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

OTHER MANUFACTURER'S PRODUCTS



Anton/Bauer
Hytron Battery



Anton/Bauer
Dionic Battery

V2PCS25-5CFWCE-SF-SC
(82'/25 meters)
V2PCS50-5CFWCE-SF-SC
(164'/50 meters)
V2PCS100-5CFWCE-SF-SC
(328'/100 meters)

Canare Electric
Bound Cable between
AG-BS300 and AG-CA300G

DC50V10-CE01PS-SC
(164'/50 meters)
DC100V10-CE01PS-SC
(328'/100 meters)

Canare Electric
Power Cable between
AG-BS300 and AG-CA300G

Canare Electric CO., Ltd.
<http://www.canare.co.jp/oversea/mainmenu.html>

Profiles



Specifications

General

Supply Voltage:	DC12V (11V to 17V)
Power Consumption:	Approx. 29W (when 1.5" CRT viewfinder, 3.5" LCD monitor used)
Operating Temperature:	32°F to +104°F (0°C to +40°C)
Storage Temperature:	-4°F to +140°F (-20°C to +60°C)
Operating Humidity:	10% to 85% (no condensation)
Weight:	Approx. 8.38 lbs (3.8kg) excluding battery and accessories
Dimensions (WxHxD):	5-5/8" x 10-3/8" x 12-5/8" (140 mm x 261 mm x 318 mm) excluding handle and prominent parts

Camera

Pick-up Device:	3CCD (2/3-inch interline transfer type and progressive modes supported)
Lens Mount:	2/3" bayonet type
Optical Color Separation:	Prism system
ND Filter:	4 position (Clear, 1/4, 1/16, 1/64)
Gain Selection:	60i/60p/50i/50p mode: 0/+3/+6/+9/+12/+18 dB 30p/24p/24pA/25p mode: 0/+3/+6/+12dB [Slow Shutter Mode, Gain fix (0dB)]
Shutter Speed (Pre-set):	60i/60p mode: 1/60 (OFF) sec., 1/100 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec., 1/2000 sec. 30p mode: 1/30 (OFF) sec., 1/50 sec., 1/60 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec. 24p/24pA mode: 1/24 (OFF) sec., 1/50 sec., 1/60 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec. 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 mode: 1/25 (OFF), 1/50, 1/60, 1/120, 1/250, 1/500, 1/1000 sec.
Shutter Speed (Variable):	60i mode: 1/60.0 to 1/249.8 30p mode: 1/30.0 to 1/249.8 24p/24pA mode: 1/24.0 to 1/249.8 50i/50p mode: 1/50.0 to 1/249.8 25p mode: 1/25.0 to 1/249.8
Shutter Speed (Slow):	60i/60p mode: 1/15, 1/30 30p mode: 1/15 24p/24pA mode: 1/12 (720p mode only) 50i/50p mode: 1/12, 1/25 25p mode: 1/12
Variable Frame Rate :	60 Hz mode: 12/18/20/22/24/26/30/32/36/48/60 fps (frame/sec.) 50 Hz mode: 12/18/20/23/25/27/30/32/37/48/50 fps (frame/sec.)
Sensitivity:	F10 (Typical) at 2000 lx

Video P2 HD General

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

Audio P2 HD General

Sampling Frequency:	48 kHz
Quantizing:	16 bit/4CH
Head Room:	20 dB/18 dB (Selectable)

Memory Card Recorder

Recording Format:	DVCPRO HD/DVCPRO 50/DVCPRO/DV selectable
Audio Recording Format:	PCM digital recording 48 kHz /16 bits 4ch (DVCPRO HD / DVCPRO 50), 2ch/4ch selectable (DVCPRO / DV)
Recording Time*:	DVCPRO HD, 4CH: 64 minutes with one 64GB P2 Card (AJ-P2C064AG) 32 minutes with one 32GB P2 Card (AJ-P2C032RG) 16 minutes with one 16GB P2 Card (AJ-P2C016RG)
* 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 Card Slot:	4 Slot (4G, 8G, 16G Card)
SD Card Slot:	SD Format standard (MMC not used) 1 Slot (Camera setup, Reading/Writing)
Recording File:	MXF File
File System:	FAT32

Input/Output Signal

Gen Lock:	BNC x 1, 1.0Vp-p, 75Ω
Component Out:	D4 terminal (Component), Y: 1.0Vp-p, 75 Ω, Pb/Pr: 0.7Vp-p, 75Ω
Video Out:	BNC x 1, 1.0Vp-p, 75Ω
SDI Out:	BNC x 1, 0.8Vp-p, 75Ω (HD:SMPTE292M/296M/299M/ SD:SMPTE259M-C/272M-A/ITU-R.BT656-4 Standard)
TC In:	BNC x 1, 0.5 to 8Vp-p, 10kΩ
TC Out:	BNC x 1, Low impedance, 2.0 ±0.5V p-p
IEEE 1394:	6 pin, Digital In/Out, based on IEEE 1394 Standard
DC In:	XLR x 1, 4-pin, DC12V (DC11.0V to 17.0V)
DC Out:	4-pin, DC12V (DC11.0V to 17.0V), max 1.5 A
Remote:	10 pin
Lens:	12 pin
EVF:	20 pin
USB 2.0 (Device):	Type-B, 4-pin (USB ver2.0)

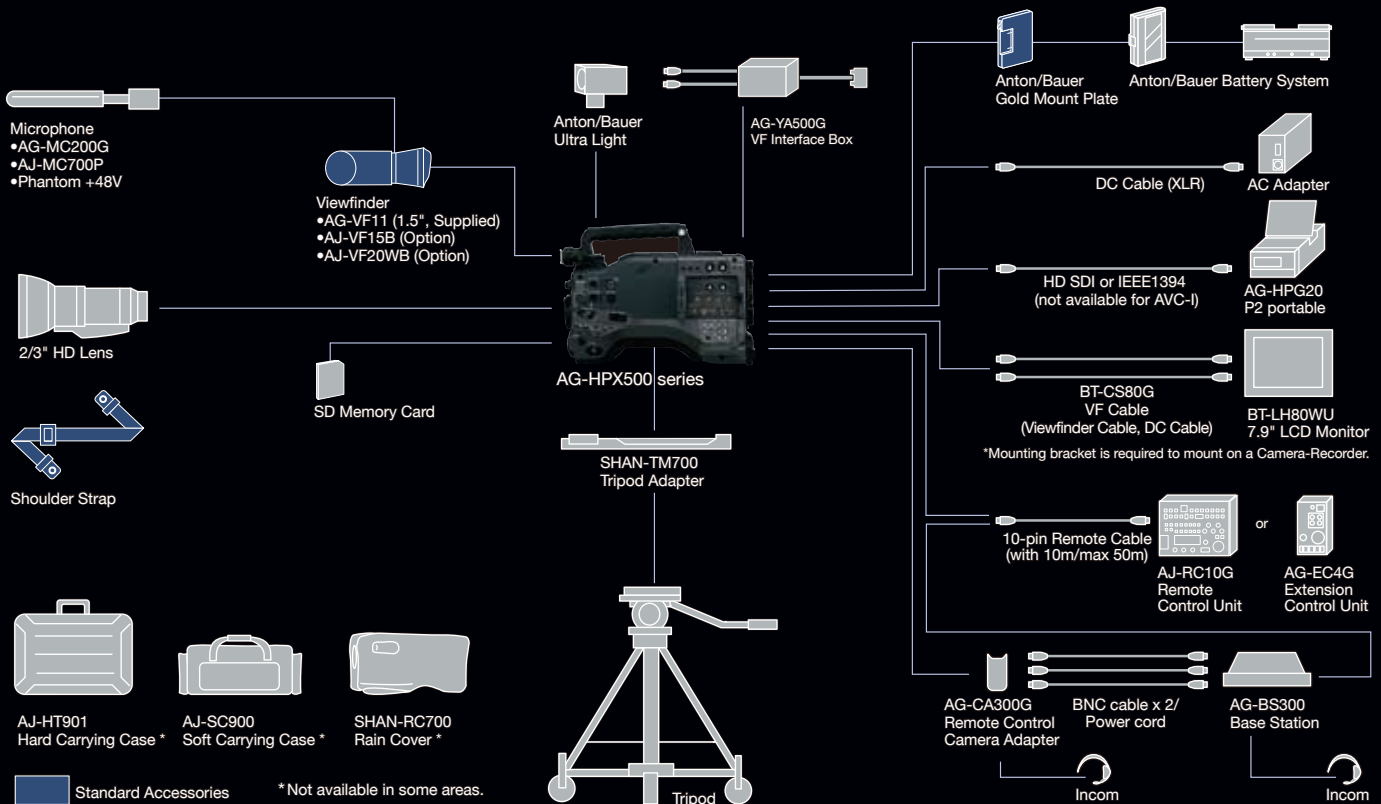
Audio Input

MIC IN:	XLR x 2 (FRONT1, FRONT2), High impedance, +48V compatible MIC: -40/-50/-60 dBu (Switch on Menu)
AUDIO IN:	XLR x 2 (REAR1, REAR2), High impedance, LINE/MIC/+48V switchable LINE: 0 dBu, MIC: -50/-60 dBu (Switch on Menu)
Line Out:	Pin Jack x 2 (CH1/CH2), Out: 600Ω, 316 mV
Phones:	Stereo Mini Jack, 0.14" (3.5mm) diameter
Internal Speaker:	1.1" (28mm) round shape x 1

Monitor, Speaker and Other packages

LCD Monitor:	3.5", LCD color Monitor, 210,000 pixels, 4:3
Supplied Accessories:	1.5", CRT B/W Viewfinder (4:3 CRT, NTSC/PAL switchable), Component Video Cable, Shoulder strap, P2 card software driver (CD-ROM)

* Product image and the specifications are subject to change without notice.
The content of this catalog is a thing as of September 2009.



Standard Accessories

* Not available in some areas.

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 XP, Windows 2000. 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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JOA-0443



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

SP-HPX500PE3



30K910ZM-1 Printed in Japan