Panasonic

ideas for life

P2HD

AG-HPG10

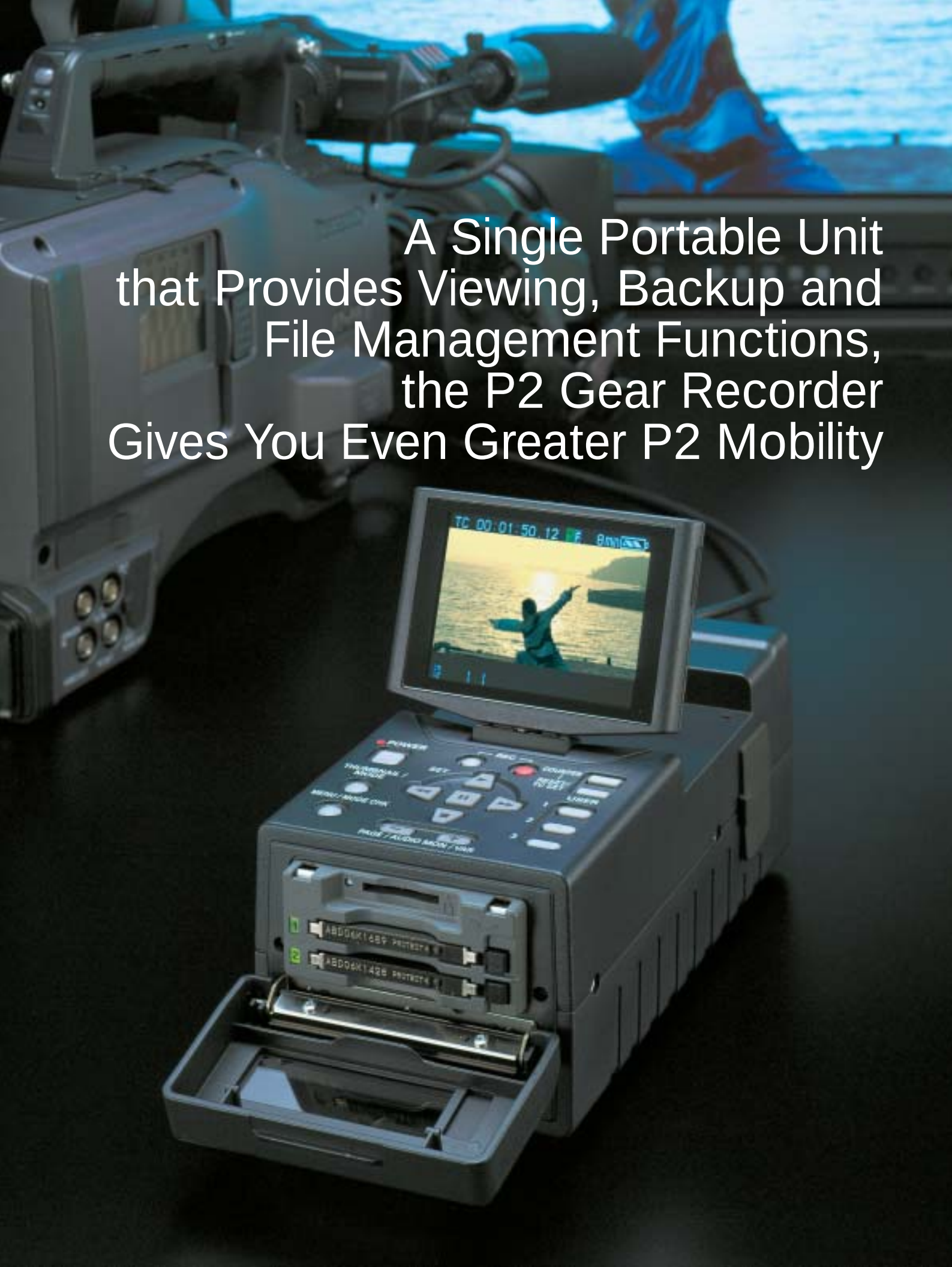
Memory Card Portable Recorder

DV DVCPRO DVCPRO50 DVCPROHD

Beijing 2008

Official Worldwide Olympic Partner

A Single Portable Unit that Provides Viewing, Backup and File Management Functions, the P2 Gear Recorder Gives You Even Greater P2 Mobility



The AG-HPG10 P2 Gear is a small, lightweight, battery-powered P2 HD portable recorder/player that's tough enough for rugged field work. With two P2 card slots and a 3.5-inch LCD monitor, P2 Gear allows HD/SD multi-format recording and playback and quick, on-the-spot viewing of P2 content. You can also use P2 Gear for line recording of IEEE 1394 input*, outputting a playback signal to a large monitor, or transferring files to an external hard disk drive or nonlinear editor. Add a camera-recorder such as the AG-HPX500 or AG-HVX200, and the P2 Gear brings greater speed, mobility and flexibility to your P2 workflow.

*HD SDI and SDI input are not supported.

High Speed and Reliability at a Low Cost

Developed for professional use, the P2 card is a compact solid-state memory card that offers superior reliability, large capacity, and high transfer speed. Its outstanding resistance to temperature fluctuation, vibration and impact makes it the superior choice for field recording in harsh conditions. The P2 card has passed insertion/removal tests of more than 30,000 cycles and can be used many times over a long period.
P2 recorders have no transport mechanism or rotating parts, so startup is fast, power consumption is low, and maintenance is reduced. This means both lower costs and less environmental impact. P2 can reduce production time too. P2 files can be transferred directly to IT (PC-based) systems, edited with nonlinear editors and transferred via networks, without digitizing.

P2HD Multi-Format Viewing

Equipped with two P2 card slots and an LCD monitor, P2 Gear lets you quickly and easily view content on P2 cards. Its multi-format and multi-codec capabilities mean that you can play back P2 files of any format recorded with an AG-HVX200 or AG-HPX500 camera-recorder. You can display, play back, and view recordings in DVCPRO HD, as well as in SD in DVCPRO50, DVCPRO and DV. P2 Gear also supports 50/60-Hz operation.

*See the table below for details concerning playback formats.
*Seamless playback of multiple clips recorded in different formats is not possible.

SDI and Analog Output

P2 Gear comes equipped to provide SDI output (HD/SD and four embedded audio channels supported), component and composite video output, and audio output (CH1/CH2 pin jacks). This makes it easy to preview recorded images on a large external monitor. In broadcasting applications, P2 Gear can be used for microwave feeds from field locations.

Clip Copying and Editing

P2 records a scene as a clip (file). To play back or delete a clip, or to check its metadata (file information) or add or delete a shot marker, just select the clip from the thumbnail display. P2 Gear also provides a number of functions that are convenient in the field, including:

- **Clip Copy:** The two card slots let you copy clips from one P2 card to another. Copy only the usable scenes, and you can use the card's capacity more effectively.
- **Thumbnail Image Change:** By default, the first image in a clip is used as the thumbnail. At a desired location within a clip, you can change the thumbnail to a different image.
- **Clip Metadata Edit:** A clip's metadata can contain such information as the camera operator's name, reporter's name and shooting location. P2 Gear lets you check this information and edit the text.
- **Text Memo:** When recording or previewing a clip, you can attach a memo (similar to a bookmark) at a desired location (up to 100 locations on a frame basis). Later you can display or delete a memo, or add a new one. The simplified editing function lets you copy a segment between memos and create a new clip. Text information can be added to a memo using P2 Gear or a PC (with P2 Viewer).
- **Shot Marker:** During or after recording, you can mark each clip with OK, NG or other designation.

Playback and Output Format

Playback Signal \ Output Signal		Pull down	SDI (HD/SD swichable) and Analog Component Output						Analog Composite Output		IEEE 1394 Output					
			1080/60i	1080/50i	720/60p	720/50p	480/60i	576/50i	480/60i	576/50i	1080/60i	1080/50i	720/60p	720/50p	480/60i	576/50i
HD	1080/60i	--	Play*1				Down*3		Down		Play					
	1080/30p (over 60i)*4	2-2	Play*1				Down*3		Down		Play					
	1080/24p (over 60i)*4	2-3	Play*1				Down*3		Down		Play					
	1080/24pA (over 60i)*4	2-3-3-2	Play*1				Down*3		Down		Play					
	1080/50i	--		Play*1				Down*3		Down		Play				
	1080/25p (over 50i)	2-2		Play*1				Down*3		Down		Play				
	720/60p	--	Cross*2		Play*1		Down*3		Down				Play			
	720/30p(over 60p)*5	2-2	Cross*2		Play*1		Down*3		Down				Play			
	720/24p (over 60p)*4	2-3	Cross*2		Play*1		Down*3		Down				Play			
	720/30pN (Native)*5	2-2	Cross*2		Play*1		Down*3		Down				Play			
	720/24pN (Native)*5	2-3	Cross*2		Play*1		Down*3		Down				Play			
	720/50p	--		Cross*2		Play*1		Down*3		Down				Play		
	720/25p (over 50p)	2-2		Cross*2		Play*1		Down*3		Down				Play		
	720/25pN (Native)*5	2-2		Cross*2		Play*1		Down*3		Down				Play		
SD	480/60i	--					Play		Play						Play	
	480/30p (over 60i)*4	2-2					Play		Play						Play	
	480/24p (over 60i)*4	2-3					Play		Play						Play	
	480/24pA (over 60i)*4	2-3-3-2					Play		Play						Play	
	576/50i	--						Play		Play						Play
	576/25p (over 50i)	2-2						Play		Play						Play

Play = Playback output of recording format Down = Down Convert Output Cross = Cross Convert Output
*1:MENU set COMPNT/SDI SEL = AUTO (factory-set) *2:MENU set COMPNT/SDI SEL=1080i *3:MENU set COMPNT/SDI SEL=480i/576i
*4:24p = 23.98p, 30p = 29.97p、60p and 60i = 59.94p and 59.94i *5: Native modes record only the effective frames.

Viewing, Recording, Copying Files and Nonlinear Editing in Various Applications

Down-Conversion/Cross-Conversion Output

During playback, P2 Gear can down-convert 1080 or 720 (HD) to 480 (SD) and output it, letting you view HD content on an SD monitor. The image aspect can be selected from squeeze, letterbox and side cut. P2 Gear can also cross-convert 720 to 1080 for HD transmission.

IEEE 1394 Line Recording and Hot-Swap Recording

P2 Gear can provide degradation-free recording from IEEE 1394 (6-pin) digital streaming input. It supports the IEEE 1394 synchro function of Panasonic camera-recorders and allows backup recording*1 in any of three ways*2 (set on the camera): recording with P2 Gear only, simultaneous recording linked with camera operation, and continuous recording from when the camera's media becomes full. Using the 1394 input on P2 Gear, when a DVCPRO HD VTR such as the AJ-HD1400 is used as the source player, P2 Gear can easily perform media conversion, copying from tape to card.

Because P2 card starts up quickly, has high access speed and requires no cuing, P2 gear begins recording instantly. It also prevents accidental overwriting, so recordings are safe.

The dual card slots let you hot-swap P2 cards, so you can make continuous recordings without roll-change errors. Two 16GB*3 P2 cards (AJ-P2C016RG) can store up to 32 minutes of HD recording or up to 128 minutes of SD (DVCPRO/DV) recording. P2 Gear supports HD/SD multi-format, multi-codec recording.

*1: In 720pN (native) mode, playback is possible, recording is not.
*2: Compatible camera-recorders: AG-DVC30, AG-DVC60, AG-DVX100(A/B), AG-HVX200, AG-HPX500. (The AJ-HPX3000, AJ-HPX2000/2100 and AJ-HDX900 can be used in simultaneous recording mode only.)
*3: The listed card capacity includes space for managing system and other data; actual usable area is slightly less.

Video format and Cordec supported (IEEE 1394 Input)

Recording Video Format		Recording Time (using two 16GB cards) and Cordec
HD	1080/60i	32 min (DVCPRO HD)
	1080/50i	
	720/60p	
	720/50p	
SD	480/60i	64min. (DVCPRO 50)
	576/50i	128min. (DVCPRO/DV)

USB 2.0 Interface with a Host Function

The USB 2.0 interface includes both host and device modes, for flexible interfacing with an external hard drive and PC-based nonlinear editor.

• External hard drive: USB 2.0 (host) lets you copy files between a P2 card and hard drive and make backup copies of video clips. USB bus power (5 V, 0.5A) is provided to power the external drive. Within the USB interface, there is an ability to make 23 partitions and it is possible to rename those partitions.

• Nonlinear Editor: USB 2.0 (device) connection lets you upload and download files, just as you would with a P2 drive.

IEEE 1394 Interface for PC Connection

Use P2 Gear to copy files from a P2 card to an IEEE 1394-equipped external hard disk drive. If your time-line needs to be recorded back to a P2 Card you can also do this via the 1394 input on P2 Gear.

Close the LCD monitor and P2 Gear is easy to carry.

FIELD ACQUISITION WORKFLOW

View Clips Recorded on a P2 Card

P2 Gear makes it easy to check images and audio recorded in the field or on a desktop. Use the SDI/Video/D4 output terminal to view recordings on a large-screen monitor or for microwave feeds.

View Clips Recorded in FOCUS FS-100

Connect via IEEE 1394 to the FS-100 portable hard disk drive, and you can play back and view P2 files recorded with the FS-100. You also can output the playback signal to an external device.

Copying Files to an External Hard Drive

Connect via USB or IEEE 1394 and you can copy files from a P2 hard disk to an external hard drive. When a camera-recorder is used for recording, P2 Gear can copy a card and when finished, it can initialize the card so it may be reused again. When connected via USB, files can be written from the hard drive to a P2 card.

Camera-Recorder Backup Recording

P2 Gear works well for applications that demand high reliability, such as for recording events for which errors cannot be tolerated. P2 Gear provides backup recording in any of three ways (set on the camera): recording with P2 Gear only, simultaneous recording linked with camera operation, and continuous recording beginning when the camera's recording media becomes full.

* Compatible camera-recorder models: AG-DVC30, AG-DVC60, AG-DVX100(A/B), AG-HVX200, AG-HPX500. (The AJ-HPX3000, AJ-HPX2000/2100 and AJ-HDX900 can be used in simultaneous recording mode only.)

Copying Files from the P2 Store

P2 Gear brings greater mobility to your workflow. Files in the P2 Store can be displayed as thumbnails on P2 Gear. Copy only the files you need onto a P2 card, and you can maximize use of both your P2 cards and the P2 Store.

DESKTOP WORKFLOW

Transferring Data to a PC-Based Nonlinear Editor

P2 Gear can serve as a P2 card reader and upload files to a nonlinear editor. The USB 2.0 and IEEE 1394 interfaces allow connection to both Windows PCs and Mac. The USB 2.0 interface lets you write edited results back to a P2 card.*

*The nonlinear editing system must be capable of writing P2 files.

Baseband Monitoring with a Laptop PC

Connect to a nonlinear editing system configured with a laptop PC, and you can use P2 Gear to check editing results on a professional, high-image-quality monitor. P2 Gear provides HD-SDI baseband output through its IEEE 1394 terminal.

Copying to Different Media

Bring P2 Gear into a conventional tape-based workflow, and you can make high-quality copies of recordings from a P2 card to a tape via HD-SDI output. With a DVCPRO HD VTR, you can also copy recordings from tape to a P2 card.

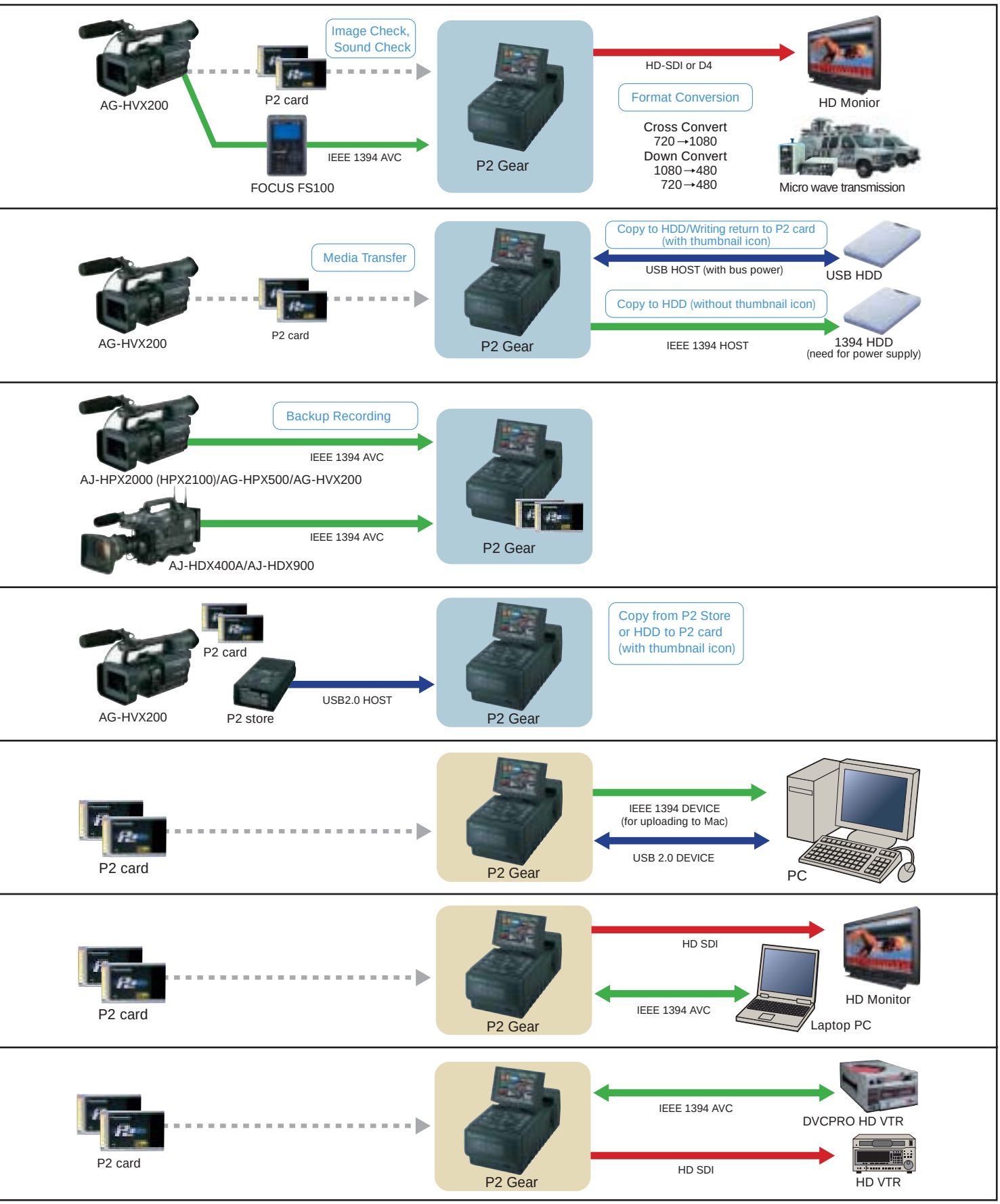


Image Check,
Sound Check
AG-HVX200
P2 card
IEEE 1394 AVC
FOCUS FS100
P2 Gear
HD-SDI or D4
Format Conversion
Cross Convert
720→1080
Down Convert
1080→480
720→480
HD Monior
Micro wave transmission
Media Transfer
AG-HVX200
P2 card
P2 Gear
Copy to HDD/Writing return to P2 card
(with thumbnail icon)
USB HOST (with bus power)
USB HDD
Copy to HDD (without thumbnail icon)
IEEE 1394 HOST
1394 HDD
(need for power supply)
Backup Recording
IEEE 1394 AVC
AJ-HPX2000 (HPX2100)/AG-HPX500/AG-HVX200
IEEE 1394 AVC
AJ-HDX400A/AJ-HDX900
P2 Gear
P2 card
AG-HVX200
P2 store
USB2.0 HOST
P2 Gear
Copy from P2 Store
or HDD to P2 card
(with thumbnail icon)
P2 card
P2 Gear
IEEE 1394 DEVICE
(for uploading to Mac)
USB 2.0 DEVICE
PC
P2 card
P2 Gear
HD SDI
IEEE 1394 AVC
HD Monitor
Laptop PC
P2 card
P2 Gear
IEEE 1394 AVC
DVCPRO HD VTR
HD SDI
HD VTR

Small, Lightweight, DC-Powered Recorder with Outstanding Functions and Mobility

Play Back Variable Frame-Rate Sources

P2 Gear supports the variable frame-rate recording widely used in creative video production. Use P2 Gear for on-the-spot previewing of slow-motion and other special effects recorded in 720pN (native) mode with the AG-HPX500 or AG-HVX200 camera-recorder.

Simplified Waveform and Vectorscope Display

P2 Gear has a built-in Waveform and Vectorscope display that many will find to be very useful in making a judgment call on the recorded material, or the incoming signal.
A single touch of the function key displays the waveform and vectors of a playback video signal or IEEE 1394 input video signal.
(Vectors are shown on the right side of the image, wave form on the bottom)

Repeat Playback

For presentations and demonstrations, use P2 Gear for repeated playback of a selected clip or multiple clips*. Playback is seamless, with no need for rewinding or cuing. There is no wear or image deterioration even after extended hours of continuous playback.

*The clips must be in the same format.

Resume Playback

If you press the Stop key during playback, P2 Gear temporarily "bookmarks" the stop position until another operation is performed. When you press the Play key, playback resumes at the bookmarked position.

*The bookmark memory is reset when the power is turned off. Also, the resume playback function is factory-set to OFF. To use it, you must activate it using the menu screen.

Small, Lightweight and Fully Mobile

P2 Gear main unit weighs just 1.1 kilograms (2.5 lbs) and is small enough to use with one hand. Thanks to its rugged construction, it's tough enough to withstand rigorous field use. A powerful 5400-mAh battery pack mounts to the main unit's back. P2 Gear can also use the AG-HVX200's battery, or plug it into an ordinary AC outlet using the adaptor provided.

Controls and Connectors

Top operation part

Rear terminal and battery


Side USB terminal (HOST/DEVICE)

Specifications

General Specification

Power Source:	DC7.2V/7.9V
Power Consumption:	11W
Operating Temperature :	0°C to 40°C (32 °F to 104 °F)
Operating Humidity:	10% to 80% (no condensation)
Weight:	Approx. 1.1 kilograms (2.42 lbs)
Dimensions (W x H x D):	104 x 83 x 227 mm (4-3/32" x 3-9/32" x 8-15/16", excluding feet)
Recording Media:	P2 card

Video Specification

Recording Format:	1080/60i, 1080/50i, 720/60p, 720/50p (DVCPRO HD) 480/60i, 576/50i (DVCPRO 50/DVCPRO/DV) *60p=59.94p, 60i=59.94i
Playback Format:	1080/60i, 1080/30p over 60i, 1080/24p over 60i, 1080/24pA over 60i, 1080/50i, 1080/25P over 50i 720/60p, 720/30p over 60p, 720/24p over 60p 720/30pN, 720/24pN, 720/50p, 720/25p over 50p,720/25pN 480/60i, 480/30p over 60i, 480/24p over 60i, 480/24pA over 60i, 576/50i, 576/25p over 50i *60p=59.94p, 60i=59.94i, 30p=29.97p, 24p=23.98p, pN=recorded by 720p native mode
Sampling Frequncy :	Y: 74.25 MHz, PB/PR: 37.125 MHz (DVCPRO HD)
Quantizing :	8bit (DVCPRO HD)
Video Compression Format:	DCT + variable-length code (DVCPRO HD)
Video Compression Ratio:	1/6.7 (DVCPRO HD)
Video Recording bit Rate:	100 Mbps (DVCPRO HD)

Video Output

HD/SD-SDI Output :	BNC x 1, serial digital component HD: SMPTE292M/296M/299M Standard SD: SMPTE 259M-C/272M-A, ITU-R BT 656-4 Standard
Video Output :	BNC x 1, Composite, 1.0V p-p, (75Ω)
Component Output :	D-connector x 1 (Y/PB/PR), Y:1.0V p-p, (75Ω)

Audio Specification

Audio Recording Format:	48 kHz/16-bit, 4CH (DVCPRO HD, DVCPRO 50) 48 kHz/16-bit, 2CH/4CH (DVCPRO/DV)
Sampling Frequency:	48 kHz
Quantizing:	16 bits
Frequency Response:	20Hz to 20kHz

Audio Output

LINE Output:	Pin jack x 2 (CH1 / CH2)
Headphones:	Stereo Mini Jack x 1 (3.5 mm diameter)
Speaker:	20 mm round x 1 (mono)

Other Input and Output

IEEE 1394 In/Out:	6pin x 1, IEEE 1394a, Digital Interface 400/200/100 Mbps selectable
USB2.0:	HOST x 1 (A-type, bus power compatible) DEVICE x 1 (B-type)

Card Slot

P2 card Slot:	2 slots
SD Memory Card Slot:	1 slot (Not supporting Multimedia card)

Monitor

LCD Monitor:	3.5", 210,000 pixels, color LCD

AC Adaptor

Weight:	160 grams (0.35 lbs)
Dimensions (W x H x D):	70 x 44.5 x 116 mm (2-3/4" x 1-3/4" x 4-9/16")
Rated Input:	100V-240V AC, 50/60Hz 24W
Rated Output:	7.9V DC, 1.9A/8.4V DC, 1.2A (for charge)

Memory Card

Recording Playback Time:		by single card	using 2 card slots
AJ-P2C016RG:	DVCPRO/DV (Audio 2CH)	64 min.	128 min.
	DVCPRO 50 (Audio 4CH)	32 min.	64 min.
	DVCPRO HD (Audio 4CH)	16 min.	32 min.
AJ-P2C032RG:	DVCPRO/DV (Audio 2CH)	128 min.	256 min.
	DVCPRO 50 (Audio 4CH)	64 min.	128 min.
	DVCPRO HD (Audio 4CH)	32 min.	64 min.

Supplied Accessories

AC adaptor/charger, AC cable, DC cable, Battery pack (5400 mAh),
Component video cable, Phono/BNC conversion plug (x 3),
P2 card driver software (CD-ROM)

5 year warranty repair program is available for AG-HPG10.

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Optional Accessories


CGA-D54/CGA-D54s
Battery Pack (5.4 Ah)


AG-B25
AC adaptor kit


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


SD memory card


AJ-P2C016RG
AJ-P2C032RG
P2 card

Panasonic P2HD "No Cost" 5 Year Warranty Repair Program[*1]

Thank you for purchasing this Panasonic P2HD device.
Register as a owner for this device to receive a special service warranty up to five years of free warranty repairs.

Customers who register as owners on the website will receive a "no cost" extended warranty repair valid for up to five years.

	1st year	2nd year	3rd year	4th year	5th year[*5]
P2 HD device[*2]	Basic warranty[*3]	"No cost" 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 warranty card enclosed with the product 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 30 days of purchase → "Registration Complete" e-mail sent

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

Details about user registration and the extended warranty: http://panasonic.biz/sav/pass_e

Panasonic

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

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