

Panasonic
ideas for life



DVCPRO 50 **DVCPRO HD** **AVC-INTRA**

DVCPRO P2 SERIES

Get ready to take a leap beyond the conventional, a leap beyond today's limits. Get ready for Panasonic's DVCPRO P2 Series equipment.

At the heart of the P2 Series is the innovative P2 (Professional Plug-in) card. This solid-state card is neither tape nor disc and requires no moving parts. The P2 card is extremely rugged, and it brings outstanding anti-vibration and anti-shock performance to the P2 camera-recorder. Its high data transfer speed, ruggedness and expandability usher in an entirely new era of mobility.

The P2 records in MXF – a file format whose exceptional PC versatility is transforming the news production workflow. The P2 card mounts directly into the PC card slot on a PC, so you have instant access

Get Ready to Go Beyond

for nonlinear editing and for faster data transferring into the network. The P2 is a fusion of the very best of the AV and IT worlds. It goes way beyond today's generation of equipment. The P2 introduces a new era in news acquisition – one in which conventional ENG gives way to a more mobile, reliable and faster IT-based news gathering (ING).

Panasonic has now taken P2 even further with the P2 HD series. Offering HD/SD multi-format capability and multi-codec recording, the new P2 HD cards take you to an era in which HD is fast becoming the mainstream for news gathering and content production.

P2 Products Help Protect the Environment



Recyclable Media

A P2 card can be used repeatedly. Simply copy the files on a P2 card to a hard disk drive for nonlinear editing or archiving, and the card is ready to be used again. IT-based broadcast systems do not consume large amounts of media the way tape-based systems do.

Low Power Consumption

The AJ-SPC700 P2 camera-recorder consumes only 17 W when recording – lowest in its class. This high energy-efficiency is possible only with memory cards, because they require no moving mechanism. Future P2 products will offer this same power-saving advantage.

Less Maintenance

P2 systems have no heads, tape travel mechanisms or other moving parts. This means there are no consumables or other parts to replace regularly, and maintenance frequency is greatly reduced.



The New Workflows of News —

Bringing Greater Reliability to News

Acquisition: The P2 card

The P2 card far surpasses videotape and discs in reliability. It withstands shock up to 1,500 G and vibration up to 15 G, operates in temperatures from -20 to 60°C, and can be stored in temperatures from -40 to 80°C. The P2 lets you work in the harshest news gathering environments in the world. And a card can be rewritten repeatedly, with no degradation and no drop-outs. With the P2 card's rewritability, you don't have to carry as much gear to acquire the news. This means greater mobility in the field, with less equipment and a smaller crew.

News Gathering Solutions: The P2 cam

Because the P2 camera-recorders have no drive mechanism, they provide reliable recording even when subjected to shock and vibration. Mobility is outstanding. The full-size P2 cams have five cards slots and offer seamless, continuous recording over all five. Cards load and unload quickly. A hot-swap function lets you replace cards on the fly. A built-in colour LCD monitor displays thumbnails of recorded clips. The P2 cams also offer proxy data recording, voice memo capability, and shot markers. AJ-SPC700 is cost-affordable, and have the lowest power consumption in its class.

P2 handheld — Innovative Camera-Recorder

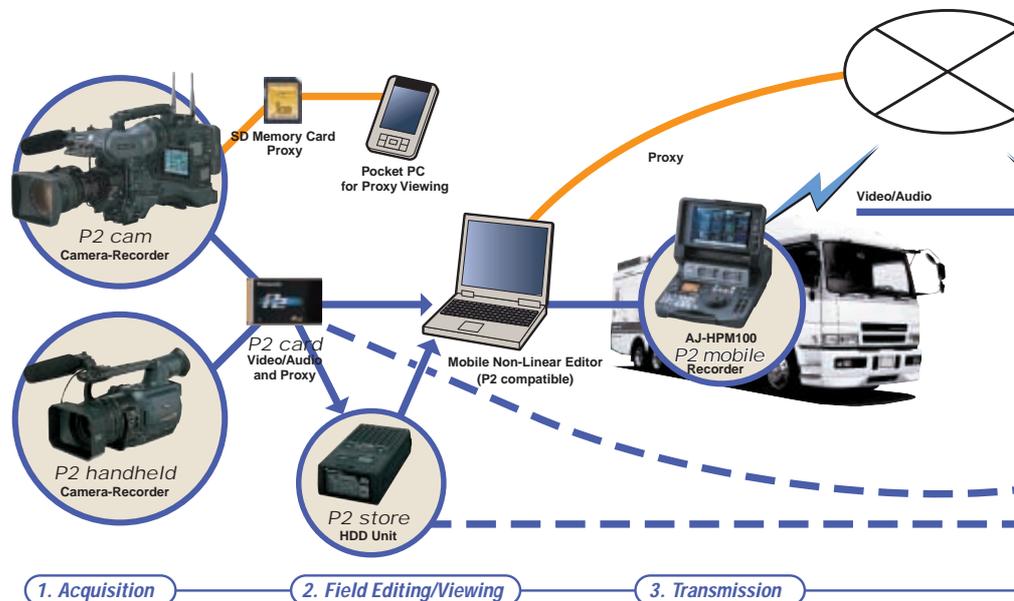
The new AG-HVX200 handheld camera-recorder takes P2 mobility a step further. The first P2 unit to offer DVCPRO HD/SD multi-format recording, this handheld is a high-end, affordable solution to everything from news gathering to contents production.

The 'P2 store' and 'P2 mobile' Bring Greater Ease and Efficiency to Field Work

Equipped with a P2 slot and hard disk drive, the portable AJ-PCS060G P2 store lets you copy a recorded P2 card right in the field and re-initialise it for immediate re-use. You get extended recording time using only a few P2 cards. Also, you can insert a P2 card directly into the card slot of a notebook PC and view data on the PC screen or transfer it over a network.* You can also insert a P2 card into a compatible mobile nonlinear editor for editing and production right on the card itself.

The P2 mobile, now under development, is a portable recorder that will speed up the entire workflow, from viewing and editing (playlist creation) to on-air transmission.

* The P2 card driver (standard equipped) must be installed. The P2 card driver operates under Windows XP, Windows 2000, and Mac OS X.



ING: IT-based News Gathering



Random Access Playback and Nonlinear Editing: The P2 deck

The P2 Series provides super-fast news transmission from mobile vans. This is thanks in part to the P2 deck, which features five P2 card slots and the same kind of jog & shuttle operation as a VTR. Simply view the thumbnails of the recorded clips on the front-panel Colour LCD Monitor, and use the jog dial to select the ones you want. The clips can be played back instantly for on-air playback.

Its Playlist function lets you play the equivalent of 100 events on a nonlinear editor, for quick post-acquisition program production and transmission. With a USB 2.0 cable, you also can connect the P2 deck to a PC and use the deck as an external drive for a P2-compatible nonlinear editor.

New P2 Drive for High-Speed PC/Mac Networks

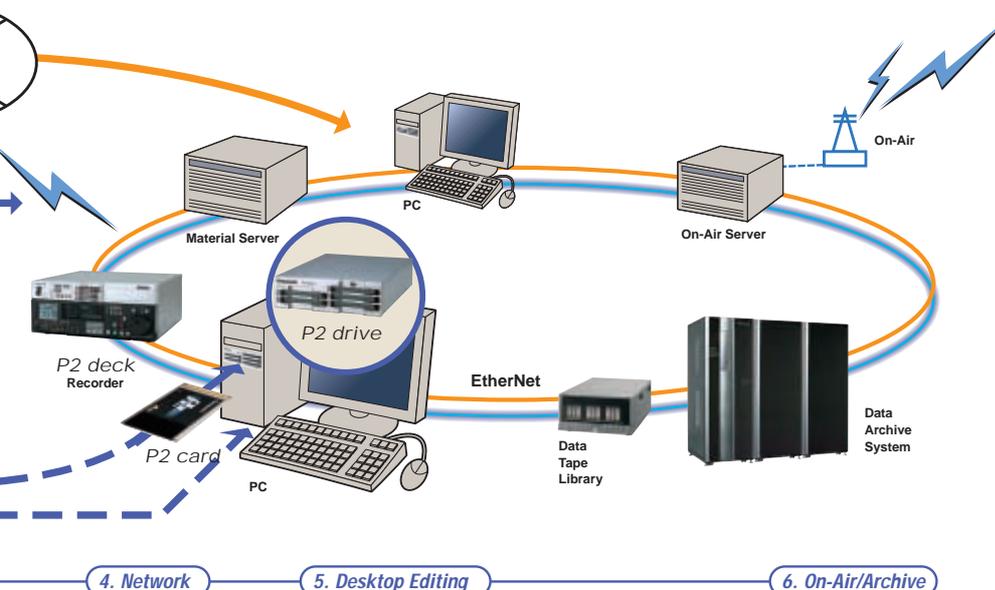
P2 provides unique high-speed, low-cost solutions in IT networks with nonlinear editors and servers. The new AJ-PCD20 P2 drive lets you use P2 cards in your desktop computer.* Or, using the P2 drive and a P2-compatible nonlinear editor, you can edit recorded files as video clips right on the P2 card itself. There is no need for digitising. The new P2 drive, which offers an IEEE 1394b interface as well as a USB2.0 interface, brings even greater speed to data transfer with either a Windows PC or a Mac.

* The P2 card driver (standard equipped) must be installed. The P2 card driver operates under Windows XP, Windows 2000, and Mac OS X.

New P2 HD Series Continues to Evolve

The new P2 HD series offers full high-definition capabilities. In addition to the AG-HVX200 handheld camera-recorder now available, Panasonic will introduce a steady stream of new P2 HD products, including an HD-compatible P2 cam and P2 mobile. In each of these products, the HD/SD multi-codec will allow smooth migration from all previous DVCPRO systems. There are also plans to support the new AVC-Intra (H.264 compliant) codec*. As it continues to advance, the new P2 HD series is bringing to HD the outstanding reliability, speed and IT compatibility that make P2 such a revolutionary development.

* Requires optional equipment. The AG-HVX200 does not support the AVC-Intra (H.264 compliant) codec.



P2 card

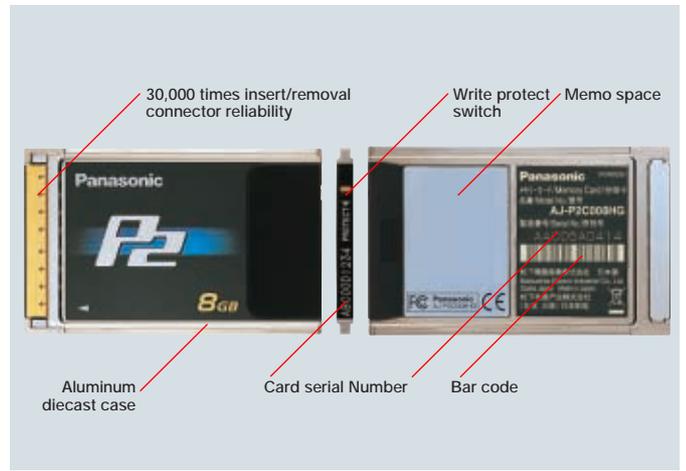
P2 card Line-up Expands with New 8GB Capacity



AJ-P2C008HG
H-Series 8GB Memory card



AJ-P2C004HG
H-Series 4GB Memory card



Innovative PC Card Media for Professionals

P2, which stands for Professional Plug-in, is a compact solid-state memory card designed for professional AV use. Compliant with PC Card standards (Type II), the P2 card plugs directly into the card slot of a laptop PC.* AV data on the card mounts instantly, with each cut as MXF and metadata file. The data can be used immediately – no digitizing necessary - for nonlinear editing, or it can be transferred over a network.

*The P2 card driver (standard equipped) must be installed. The P2 card driver operates under Windows XP and Windows 2000.

Super-Compact Cards with Large Capacity and High Speed

In developing the P2 card, Panasonic applied some of the same technology that proved so successful in the SD Memory card.*1 Basically, four SD Memory cards are packaged together to create a single P2 card. This gives the P2 card four times the capacity and four times the transfer speed of a single SD Memory card.

Now the P2 line-up is growing. The new AJ-P2C008HG is an 8GB-capacity card*2 that extends DVCPRO or DV recording time to 32 minutes. And this 8GB P2 card supports 8 minutes DVCPRO HD recording. The P2 far surpasses all other AV media in transfer speed, too. The AJ-P2C004HG and AJ-P2C008HG transfers data at up to 640 Mbps*3, which can greatly speed up production processes.

Repeatedly Reusable

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 no rotation. You can use the same P2 card again and again for years –

slashing media expenses while also minimizing impact on the environment. To help manage this reuse, a serial number is printed on a bar code on each P2 card. This makes it easier to identify and track cards when they're in a PC or checked into or out of inventory. P2 cards also have a write protect switch that prevents accidental data deletion.

Reliable in the Face of Shock and Temperature Change

The super-slim P2 card weighs only about 45 grams. Yet it's anything but fragile. These rugged cards provide the superb reliability only a memory card can provide and are suitable for news gathering in even the harshest environments. Despite their compact size, P2 cards withstand shock up to 1,500 G and vibration up to 15 G, operate in temperatures from -20 to 60°C, and can be stored in temperatures from -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.

SD/HD Migration with the DVCPRO Family

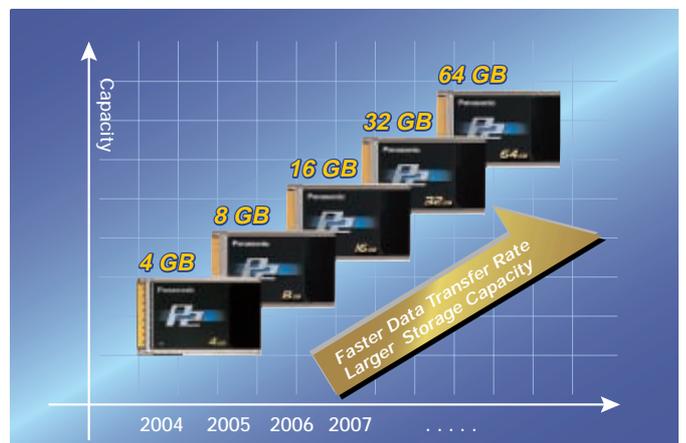
P2 cards can record in DVCPRO 50, DVCPRO and DV. And they can be used with current equipment of those formats, so you can transition easily from tape to solid-state cards. The H-Series P2 cards also support DVCPRO HD recording with the new AG-HVX200 HD P2 handheld camera-recorder. A new 8GB card has also been added to the P2 line-up. P2 offers the seamless SD/HD migration path that distinguishes the DVCPRO family, and it supports the IT-based news gathering concept that promises to revolutionize the industry.

P2 card Recording Time Reference

Model Number	Capacity Indication*2	Approx. Recording Time			
		DVCPRO/DV (Audio 2ch)	DVCPRO 50 (Audio 4ch)	DVCPROHD (1080/50i)	DVCPROHD (720/25p)
AJ-P2C004HG	4 GB	16 min.	8 min.	4 min.	8min.
AJ-P2C008HG	8 GB	32 min.	16 min.	8 min.	16 min.

*1 SD Memory card has quickly become the world's standard media for compact, portable, high-capacity storage. New SD Memory cards are being developed every year with double the capacity of previous cards; development of a 32-GB card is just a few years away. More than 700 of the world's leading companies now support SD Memory card, assuring significant economies from scale and competition. And as production volumes rise, prices will continue to fall. *2 Total card capacity includes space for data management such as system data, therefore, actual usable area is less than capacity indicated on the card. *3 This data transfer speed is theoretical value. An actual data transfer speed varies according to operating condition and devices.

P2 card Roadmap



P2 cam

*Cost-efficient P2 Cam with Outstanding
Mobility and Low Power Consumption*



AJ-SPC700

MEMORY CARD CAMERA-RECORDER (P2 cam)

The AJ-SPC700 makes it even easier to start P2, with excellent cost performance and low power consumption.

P2 Card Offers Outstanding Mobility and Reliability

The solid-state P2 card records and plays back without requiring a mechanism like that found in conventional tape or disc systems. This gives the P2 cam exceptional impact and vibration resistance, and makes it the ideal choice for reliable recording in harsh conditions.

Low Power Consumption (17 W)

Because the P2 cam does not have a drive mechanism, and thanks to use of a newly developed digital signal processor, power consumption is only 17 W* during recording. This also helps boost mobility and reliability.

*without option, LCD monitor off.

Instant Rec Start — Another Memory Card Advantage

Thanks to the solid-state memory, recording response is much faster than with tape or disc recorders. You can begin recording an instant after powering up, making it possible to capture unexpected events that other systems miss. You won't worry about missing the shot.

Next-Generation Recording Functions

The AJ-SPC700 has slots for five P2 cards and lets you record continuously onto all five in sequence. It also provides several entirely new recording functions that are possible only with memory cards.

- **Data protection:** The P2 card records only onto blank spaces, so there's no danger of accidental writing over data.*
- **Hot-swap recording:** You can replace a full memory card with a blank one while the P2 cam is recording onto a second card. Successively swapping cards this way gives you virtually unlimited recording capability.
- **Loop recording:** By loop recording onto a specified recording area, you can continue to record over a fixed area.
- **Pre-rec:** While in standby mode, you can continuously store, and subsequently record, up to 15 seconds of video and audio (in DVCPRO). 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.

*It is possible, however, to delete data, or to lose data by re-formatting the card.

2/3" IT 3CCD Imaging System for Wide-Screen Images

Use of the reliable, cost-effective 2/3" IT 3CCD imaging system gives the AJ-SPC700 full broadcast-level performance, with low smear, 750-line resolution, and an S/N ratio of 62 dB.

The AJ-SPC700 switches easily from 4:3 to 16:9 for wide-screen recording.

Newly Developed Gamma Curve for News

The gamma functions featured in Panasonic VariCam models have earned wide acclaim. Now Panasonic has developed a new gamma curve for the P2 cam: news gamma. This new function, offered in addition to conventional video gamma, helps to preserve important image data by suppressing over-saturation in highlight areas during sudden changes in contrast.

DVCPRO 50/DVCPRO/DV Switchable

The versatile P2 cam can record in high-quality 4:2:2, 50Mbps DVCPRO 50; 25Mbps DVCPRO and DV. A single 4GB* P2 card holds up to 16 minutes of DVCPRO/DV data or 8 minutes of DVCPRO 50 data. Using the P2 cam's five slots and hot-swapping function, you get virtually unlimited continuous recording.

*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.

Clip Thumbnail Function

- **Thumbnails:** The P2 cam automatically generates a thumbnail image for each clip. These can be used for nonlinear editing or by the P2 cam itself.
- **Displaying thumbnails on the colour LCD monitor:** You can view up to 12 thumbnails at once on the 3.5" colour LCD monitor on the P2 cam's side. Any of the corresponding clips can be accessed instantly.
- **Seamless playback of selected clips:** Using the thumbnails, you can specify a number of clips for seamless playback or on-air broadcasting.

*Seamless playback is not possible between clips recorded in different formats.

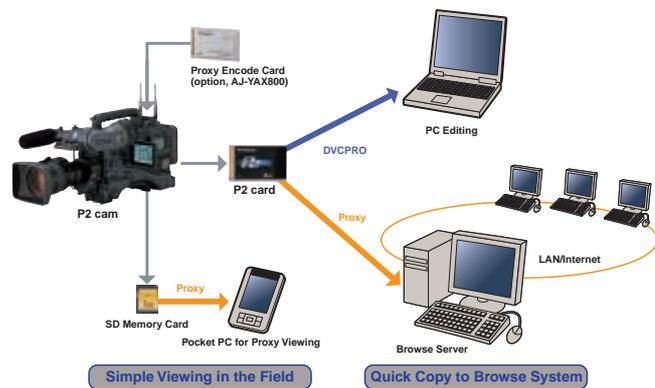


Voice Memo and Shot Marker

If desired, to each clip you can add a simple OK/NG shot marker and a voice memo with an audio comment linked to the time code. You can do this either during or after recording to support post-recording processing.

Proxy Data Recording*

Mount an AJ-YAX800G Proxy Encode Card into the option card slot or 5th slot of the P2 card slots, and the AJ-SPC700 records MPEG4 proxy (low-resolution) data — useful for news flash or other studio news system use — onto the card along with the full-resolution data. You can select either of 1.5Mbps quality, 768kbps quality, or 192kbps quality. Proxy data can also be recorded onto an SD Memory Card mounted in the slot provided, for easy viewing on a laptop PC. The encode card, available as an option, lets you upgrade as future image encode systems evolve.



*Proxy data is AV data with low-resolution MPEG4 video and audio containing time code, metadata, and other control information.

*Use of DCF Technologies under license from Multi-Format, Inc.

Four User Scene Files

Store specific camera settings in built-in memory, then retrieve them when needed for quick, easy setup. Four files with settings can be stored in the camera's memory. Files can also be copied onto an SD Memory Card, allowing storage of up to eight files.

Customized User Buttons and Menu

Three user buttons are provided. Assign a function to each, and then you can select those functions with pushbutton ease. You can also customize the on-screen menu with the items you use most often, then display them by simply pressing a button.

Auto Tracking White Balance

White balance is automatically adjusted, in real time, as the lighting changes. This makes it easy to get natural colour even when shooting scenes under difficult lighting conditions.

Connects to a PC via USB2.0 or IEEE 1394

The AJ-SPC700 comes equipped with a USB2.0 interface, and you can add an IEEE 1394 interface by mounting the optional AJ-YAD800G board. When the P2 cam is connected to a PC, you can use its card slot as an external device for the PC — ideal for nonlinear editing in the field or transmitting data.



Enhanced Functions and Specifications

- The electronic shutter has speeds of 1/60, 1/120, 1/250, 1/500, 1/1000, and 1/2000 sec, plus synchro-scan capability (1/50.4 to 1/248 sec)
- 4-position optical filter
- Select from a variety of finder markers, or make your own.
- A zebra pattern can be displayed for contrast adjustment, Auto White Balance setting, and onto colour bar output.
- One touch of the mode check button displays the camera settings for easy confirmation.
- Built-in SMPTE/EBU time code generator/reader, with time code In/Out terminal

Options That Add Versatility

- Slot for UniSlot* wireless audio receiver

*UniSlot is a trademark of Ikegami Tsusinki Co., Ltd.

- AJ-EC3E Extension Control Unit (ECU)
- AJ-VF20WBE (2.0" wide) or AJ-VF15BE (1.5") viewfinder with rugged mount design



P2 cam

*Full-Featured P2 Cam with High Sensitivity,
Digital Super Gain and 25p Shooting*



AJ-SPX900/AJ-SPX800
MEMORY CARD CAMERA-RECORDER (P2 cam)

Two Models -- Two Optical Filters to Choose From

These two models let you select either a one-wheel or two-wheel optical filter configuration to meet your needs.

The two-wheel AJ-SPX900 gives you separate ND (CLEAR, 1/4 ND, 1/16 ND, 1/64 ND) and CC (Cross, 3200K, 4300K, 6300K) filters for detailed image control.

The AJ-SPX800 features a simple, four-position (3200K, 5600K+1/8ND, 5600K, 5600K+1/64ND) one-wheel ND/CC combination filter for quick, on-location adjustment.



AJ-SPX900 optical filter



AJ-SPX800 optical filter

Progressive CCD for High Sensitivity and High Image Quality

The AJ-SPX900/SPX800 feature a 2/3" 600,000-pixel 3CCD imaging system, plus progressive scanning capability and an F13 lens with high sensitivity. You can shoot in light as low as 0.01 lux* with minimal smear. With 750 lines of resolution and a 63-dB S/N, the AJ-SPX900/SPX800 meet virtually any recording need. And it's versatile, with menu-selectable 16:9 and 4:3 aspect ratios.

*At maximum gain (using digital super gain 5P mode plus 20 dB with the +48-dB gain setting).

25p Progressive Cine-Like Shooting

The frame rate can be switched between the normal 50i (50 fields/sec), and 25p (25 frames/sec)*. In 25p mode, a complete progressive scan image is produced for each frame. The cine-like gamma curve produces a tone similar to movie film, making the AJ-SPX900/SPX800 ideal for producing documentaries, commercials, and music video clips or up-converting for HD. *Each records onto a card in the standard 50i TV format.

Digital Super Gain (Cumulative Mode)

The AJ-SPX900/SPX800 have a digital super gain function (in cumulative mode) that allows extra gain of +12 dB (at 12 fps) and +20 dB (at 5 fps). Unlike conventional gain adjustment, digital super gain is virtually noise-free*, so picture quality remains outstanding. With high gain and digital super gain, the AJ-SPX900/SPX800 allow ultra-high-sensitive shooting at up to +68 dB.

*At maximum gain (+68 dB) there may be a slight amount of noise.

2x Digital Zoom

You can digitally enlarge the viewfinder image to twice the normal lens magnification, producing images four times the normal size. Progressive images retain their superior resolution even with zooming, and — unlike when a lens extender is used — brightness is not reduced. Ideal as both a shooting technique and focusing support.

4-Channel Digital Audio (DVCPRO, DVCPRO 50, DV)

Record four channels of 48-kHz/16-bit digital audio in DVCPRO, DVCPRO 50 or DV. Each channel can be set to record from a mic, line, wireless receiver or other source.

P2 Card Recording and a Multi-Card Slot

Recording on memory cards gives you high reliability and instant response. The P2 cam's five slots allow continuous recording.

- Data protection: You cannot overwrite data unless you delete the file or re-format the card.
- Hot-swap: You can insert a new memory card while recording.
- Loop Rec: You can loop-record over a fixed area.
- Pre Rec: You can "go back" and record up to 15 seconds (for DVCPRO) that you otherwise would have missed.

Clip Thumbnail Function

- Thumbnails: The P2 cam automatically generates a thumbnail image for each clip. These can be used for nonlinear editing or by the P2 cam itself.
- Displaying thumbnails on the colour LCD monitor: You can view up to 12 thumbnails at once on the 3.5" colour LCD monitor on the P2 cam's side. Any of the corresponding clips can be accessed instantly.
- Seamless playback of selected clips: Using the thumbnails, you can specify a number of clips for seamless playback or on-air broadcasting.

*Seamless playback is not possible between clips recorded in different formats.

Optional IEEE 1394 Interface

Mounting an optional AJ-YAD800G board gives you an IEEE 1394 digital interface, which lets you use the P2 cam card slot as an external PC device.



AJ-SPX900

Proxy Data Recording*

Mount an AJ-YAX800G Proxy Encode Card, and the AJ-SPX900 and AJ-SPX800 record MPEG4 proxy (low-resolution) data — useful for news flash or other studio news system use — onto the card along with the full-resolution data. The three levels of proxy video are available: 1.5Mbps, 768kbps or 192kbps. Proxy data can also be recorded onto an SD Memory Card mounted in the slot provided, for easy viewing on a laptop PC. The encode card, available as an option, lets you upgrade as future image encode systems evolve.

*Proxy data is AV data with low-resolution MPEG4 video and audio containing time code, metadata, and other control information.

*Use of DCF Technologies under license from Multi-Format, Inc.

Supports GPS, SDI Output

- The AJ-GPS900G GPS unit lets the AJ-SPX900/SPX800 record real-time position data onto a memory card. Conforms to UMID standards.
- Adding an optional AJ-YA902AG SDI output board enables ITU-R BT.656-4 serial digital output with 4-channel embedded audio.

Shooting Assist Functions

- The news gamma curve suppresses over-saturation in highlight areas
- Three user assignable buttons
- User menu function lets you create your own menu screens
- Up to 12 scene files — 4 in the P2 cam, 8 in an SD Memory Card

- Electronic shutter has speeds of 1/60, 1/120, 1/250, 1/500, 1/1000, and 1/2000 sec, plus synchro-scan capability (1/50.4 to 1/248 sec)
- Auto tracking white balance
- Select from a variety of finder markers, or make your own
- A zebra pattern can be displayed for contrast, Auto White Balance, and onto colour bar output
- Mode check button displays camera settings

Options that Add Versatility

- Built-in SMPTE/EBU time code generator/reader with time code In/Out terminal
- Slot for UniSlot* wireless audio receiver
*UniSlot is a trademark of Ikegami Tsusinki Co., Ltd.
- AJ-EC3E Extension Control Unit (ECU)
- AJ-VF20WBE (2.0" wide) or AJ-VF15BE (1.5") viewfinder with rugged mount design



AJ-SPX800 Rear Connector Panel

Comparison	AJ-SPX900	AJ-SPX800	AJ-SPC700
Recording Format	DVCPRO 50/DVCPRO/DV	DVCPRO 50/DVCPRO/DV	DVCPRO 50/DVCPRO/DV
Power Consumption	24 W *1	24 W *1	17 W *1
CCD	2/3" x3CCD, 16x9	2/3" x3CCD, 16x9	2/3" x3CCD, 16x9
Sensitivity	F13	F13	F11
S/N	63dB	63dB	62dB
Shooting Mode	50i/25p	50i/25p	50i
Optical Filters	2-wheel, ND 4-position, CC 4-position	1-wheel, 4-position (ND+CC)	1-wheel, 4-position (ND+CC)
A/D Process	14 bit	14 bit	14 bit
Colour Correction	12-axis matrix	12-axis matrix	12-axis matrix
Gamma	Video/News/Cine-like	Video/News/Cine-like	Video/News
Digital Super Gain	√	√	—
X2 Digital Zoom	√	√	—
P2 card Slot	5 Slots	5 Slots	5 Slots
Option Slot	1 Slot	1 Slot	1 Slot
Proxy Video (option)	√	√	√
Shot Marker	√	√	√
Voice Memo	√	√	√
Pre Recording	√	√	√
Loop Recording	√	√	√
Interval Recording	√	√	—
One-Shot Recording	√	√	—
UMID Data Recording	√	√	√
GPS Function (option)	√	√	—
Colour LCD Monitor	√	√	√
Clip Thumbnail	√	√	√
Digital Audio	4CH	4CH	2CH *2
Stereo Mic	√	√	—
Slot-in Wireless Mic	√	√	√
Analogue Composite Output	√	√	√
Analogue Composite Input Recording	√	√	√
Audio Output	2CH (XLR-5P)	2CH (XLR-5P)	1CH (XLR-3P)
SDI Output (option)	√	√	—
IEEE 1394 Input and Output (option)	√	√	√
Genlock Input	√	√	√
TC Input and Output	√	√	√
USB2.0	√	√	√
ECU	√	√	√
DC Input	√	√	√
DC Output	√	√	√

Specifications are subject to change without notice. *1: without option, LCD monitor off. *2: Same audio recorded on CH1 and CH2 will be recorded on to CH3 and CH4.

P2 deck

Ideal for use in Existing Mobile Van and Studio Environments and Allows VTR-Like Nonlinear Editing



AJ-SPD850
MEMORY CARD RECORDER (P2 deck)

(with optional DVD-RAM/R drive AJ-DVD850G)

Five P2 card Slots

With its five PC card slots, the AJ-SPD850 lets you mount five P2 cards and play a continuous, extended clip recorded in sequence onto multiple cards. Using line input, you can also record a continuous, extended clip onto five P2 cards in sequence.

DVCPRO 50/DVCPRO/DV Switchable

The AJ-SPD850 records in 25Mbps DVCPRO; high-quality, 4:2:2, 50Mbps DVCPRO 50; and DV. A single 4GB* P2 card holds up to 16 minutes of DVCPRO/DV data or 8 minutes of DVCPRO 50 data. Using all five slots, you get about 80 minutes of continuous record or play in DVCPRO/DV, or 40 minutes in DVCPRO 50.

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

Four-Channel Digital Audio in All Formats

In all formats - DVCPRO 50, DVCPRO, and DV — the AJ-SPD850 can record full 48-kHz/16-bit digital audio on four channels. Each channel also offers both analog and digital (AES/EBU) input and output, making the AJ-SPD850 ideal for multilingual production and broadcasting.

VTR-Like Operation, Including Jog & Shuttle

The AJ-SPD850 gives you many of the same familiar buttons and jog & shuttle dial as our DVCPRO VTRs. VAR mode provides noiseless slow and fast playback at speeds from -1x (reverse) to 1x normal speed. Shuttle search moves at 100x normal speed in both forward and reverse. The output video signal can be adjusted by encoder remote, providing familiar operation to anyone used to broadcast VTRs.

Color LCD Monitor – Lets You View Thumbnails

A 3.5" Color LCD Monitor on the front panel lets you monitor recording and playback and view thumbnails. Using the thumbnails and jog dial, you can select clips for instant access and playback.

SD Memory card Slot

The AJ-SPD850 can read from and write to an SD Memory card mounted in the slot provided. You can use an SD Memory card for purposes such as backing up the playlist data.

Voice Memo Playback

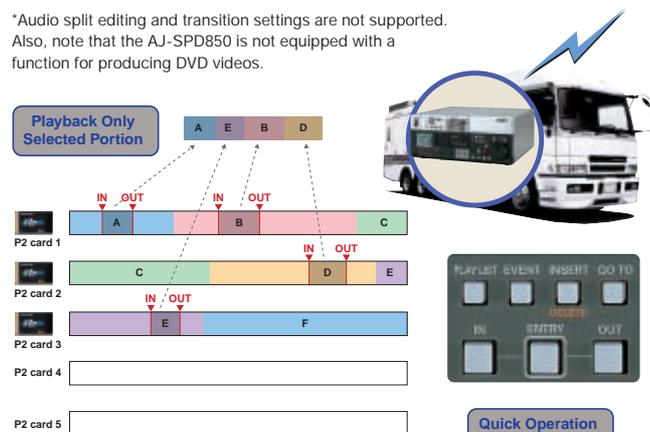
Use this function to play back voice memos added to clips recorded with a P2 cam, such as comments from the news gathering crew. The thumbnail display shows any voice memos or shot markers.

New Playlist Function Allows VTR-Like Nonlinear Editing

The P2 memory card makes the attractive new playlist function possible. You can register up to 100 events, using In and Out points, and play them in any order you like. Thanks to the memory card's unique high-speed random access, you get seamless, continuous, on-

the-spot playback with no time lags or other disruptions between cuts. This feature makes it possible to perform simple nonlinear editing, like with a VTR, using just the P2 deck (i.e., with no PC). Use the edited results just as they are in on-air broadcasts, and you have a quick, easy solution for news flash reporting and similar needs. If you add an optional DVD-RAM/R drive, you can copy your P2 data or save the playlist on the drive.

*Audio split editing and transition settings are not supported. Also, note that the AJ-SPD850 is not equipped with a function for producing DVD videos.



RS-422A and Other Familiar Interfaces

The AJ-SPD850 comes equipped with many of the same interfaces found on DVCPRO VTRs — RS-422A, component/composite video, analog audio/digital audio, REF video and more. Combine the AJ-SPD850 with an editing controller, and you can use it as the player in a linear editing system. These interfaces also let you evolve step-by-step from tape to card. For example, you can use a P2 cam for recording while using your existing equipment.

Optional DVD-RAM/DVD-R Drive

An optional AJ-DVD850G DVD-RAM/DVD-R drive can be built into the AJ-SPD850, making it easy to back up an entire P2 card or a batch of selected clips.

*Software upgrade is needed.

Equipped with PC or Digital Interfaces

- **USB 2.0:** Lets you use one of the P2 deck card slots as an external drive for your PC
- **RS-232C:** Allows remote control from a PC
- **Ethernet:** Will let you connect to a network to send data
- **SDI and IEEE 1394:** You can expand your possibilities by adding optional serial digital (SDI) input/output and IEEE 1394 interfaces.

4U Rack Size

The AJ-SPD850 has the same height and 4U size as our DVCPRO VTRs and mounts easily into a 19-inch rack. It can slip right in as a replacement for an older VTR. * Mounting adaptor must be purchased separately



P2 drive

New P2 Card Drive with IEEE 1394b/USB 2.0 Interface for Both Mac and Windows Support



AJ-PCD20
MEMORY CARD DRIVE (P2 drive)

P2 store

Portable Hard Disk Unit that Copies P2 Card Data at High Speeds



AJ-PCS060G
PORTABLE HARD DISK UNIT (P2 store)

High-Speed Data Transfer via IEEE 1394b or USB 2.0

The AJ-PCD20 is equipped with an IEEE 1394b (800Mbps) interface in addition to the USB2.0 interface provided on the previous model (AJ-PCD10), enabling it to support both Mac and Windows PC.

P2 card driver software is also available for both Mac OS X and Windows XP/2000.



Five P2 card Slots

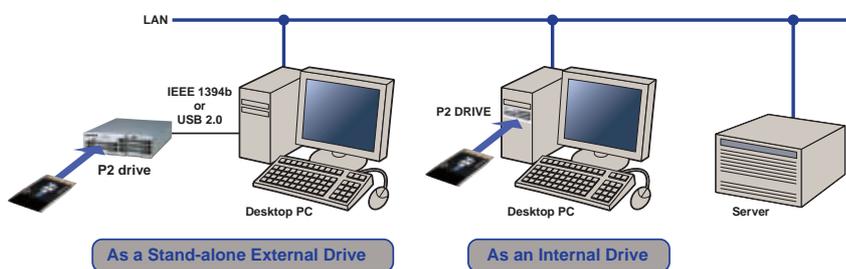
The AJ-PCD20's five PC card slots let you mount up to five P2 cards at the same time. This is especially convenient for editing a continuous clip recorded by a P2 cam in sequence onto multiple cards.

Use the AJ-PCD20 Externally or Install It into Your PC

Install the AJ-PCD20 into a 5-inch bay on a desktop PC* and use it as an internal drive in a PC. Or, with the AC adaptor and USB or IEEE1394b** cable, you can use it as a stand-alone external drive. You can also use the AJ-PCD20 as an external drive with a laptop PC that's not equipped with a 5-inch bay.

*A P2 card driver (standard equipped) must be installed in the PC. The P2 card driver operates under Windows XP, Windows 2000 and Mac OS X.

**IEEE 1394b works on Windows XP and Mac OS X.



High-Speed Copying from 15 P2 Cards (4GB)

A portable hard disk unit with a P2 card slot, P2 store quickly and easily copies data from P2 cards, speeding up data acquisition and lowering costs. P2 store can copy 4GB of data in only about four minutes. P2 store also re-formats the cards so you can use them again right away. P2 store can copy up to 15 P2 cards on its 60GB capacity hard disk drive.

*The HDD is a high-precision device. Operating conditions may pose a risk of partial damage, and in a worst-case scenario, there is serious risk that data cannot be read or recorded. Thus, please do not consider the internal HDD a permanent storage place for data. Use it as a temporary storage device until you can back up data on other storage media.

Compact and Lightweight, Runs on Batteries or AC Adaptor

Small in size and weighing only about 600 g, P2 store offers outstanding portability. It runs on DC power, so you can use batteries or an AC adaptor.

Withstands Impact and Vibration

A special impact-absorbing material helps cushion the hard disk and a shock-resistant magnesium alloy is used for the main body parts. This gives the rugged P2 store excellent resistance to impact and vibration, lowering the risk of data loss or damage.

*No guarantee against data damage or loss is implied.

USB2.0 Connection Allows Use as External Drive

USB2.0 connection makes it easy to link to a PC and use the data on P2 store. The PC will recognize up to 16 (including P2 card slot) data volumes. To help safeguard data, the volumes are read-only and cannot be accidentally overwritten.

*Windows 2000/XP and Mac OS X (lead only). Mac of the Intel CPU base is not supported.



P2HD

DVCPRO

DVCPRO 50

DVCPRO HD

AVC-INTRA

DVCPRO Migration and Revolutionary HD Potential in the New P2-HD Series

As P2 continues to transform the world's news systems, Panasonic takes the next step with the HD-Ready P2-HD series. Following the introduction of the handheld AG-HVX200 DVCPRO HD Camera-Recorder, we are preparing the HD-Ready P2 Cam and P2 Mobile Recorder for release, bringing P2 reliability, speed and IT compatibility to the world of HD. In the new series, HD/SD multi-codec capability allows smooth migration with all existing DVCPRO equipment. Compatibility* is also possible with the new AVC-INTRA (H.264) compression codec, for easier introduction into IT systems. High quality combines with flexible operation in the new P2-HD series to support the next generation of HD broadcasts.

* The AG-HVX200 does not support the AVC-INTRA (H.264) codec. The AJ-HPX2100 and AJ-HPM100 support AVC-INTRA (H.264) when equipped with an optional board.



AJ-HPX2100

P2 CAM

[Preliminary]

Multi-Format HD/SD Camera-Recorder with 2/3-Inch 3-CCD System for High Sensitivity and Extended Recording

The AJ-HPX2100 is a full-fledged shoulder-mount P2 camcorder that can record in HD. Featuring a new high-sensitivity camera section, the AJ-HPX2100 records HD images of breathtaking quality onto a P2 card in the DVCPRO HD codec (1080i, 720p) format. And thanks to P2's multi-codec feature, DVCPRO 50/DVCPRO SD recording is possible as well.

The AJ-HPX2100 gives you the kind of mobility, flexibility and reliability you need to reach the next level in HD production.

HD Camera with High Image Quality and High Sensitivity

- HD Progressive 2/3" 3-CCD System.
- High sensitivity of F10 (at 2000 lux). Minimum illumination of 0.032 lux (at +62dB gain).
- 14-bit A/D processing and improved digital image processing technology.
- 12-pole linear matrix color correction function.

HD/SD Multi-format & Multi-Codec Recording

- 1080/60i, 50i and 720/60p, 50p HD video recording using the DVCPRO HD codec.
- Recording in Standard Definition (both 480i and 576i) also possible. DVCPRO 50 and DVCPRO codec selection.

P2 Camcorder Reliability, Speed and Advanced Functions

- Memory card recording offers high resistance to impacts, vibration and temperature changes, and delivers high reliability under harsh conditions.
- Five card slots for continuous recording. Hot-swap recording (changing cards without interrupting recording), loop rec and pre-rec functions.
- Immediate playback from clip thumbnail displayed on built-in LCD monitor.
- Shot marker can be added to each clip.
- Directly mounts to nonlinear editing system to save time.
- IEEE 1394a (AVC) and USB2.0 (HOST/DEVICE) interfaces.

AJ-HPM100

P2 MOBILE RECORDER

[Preliminary]

Mobile HD/SD Recorder for More Flexible News Gathering

With the AJ-HPM100, Panasonic has developed a new P2 mobile recorder that's based on the same design concept as DVCPRO laptop editors. This compact unit comes packaged with six P2 card slots, an LCD monitor, speakers and an editing controller with a jog and shuttle dial. Handling everything from acquisition and transmission to viewing and playlist editing, the AJ-HPM100 lets you take full advantage of the outstanding speed and mobility that distinguish P2.

The AJ-HPM100 also offers DVCPRO HD compatible HD/SD multi-format and multi-codec capabilities, and comes equipped with digital and analog input/output terminals and PC interfaces.

Portable Field Recorder/Player

- Compact, lightweight body for easy portability.
- Six P2 card slots, control panel, 9-inch wide LCD monitor and built-in stereo speakers.
- Operates on DC or AC.

HD/SD Multi-format & Multi-codec Recording

- DVCPRO HD (1080i and 720p) recording and playback.
- Codec for Standard Definition (SD) allows DVCPRO 50, DVCPRO, and DV selection.
- Built-in up-converter and down-converter enable.

Editing Functions and Various Inputs and Outputs

- Jog/shuttle dial and VTR-like operation buttons.
- P2 deck-like playlist editing.
- Simplified Audio Split and Voice Over functions.
- IEEE 1394a (AVC) and USB2.0 (Host/Device) interfaces.
- HD/SD switchable SDI IN/OUT.
- Analog IN/OUT: composite IN/OUT, HD component output, audio 4-ch IN/OUT.
- TC IN/OUT, RS-422 Remote IN, reference input.

P2 handheld



AG-HVX200

DVCPRO HD MEMORY CARD CAMERA-RECORDER

Heralding a New Era in News Gathering and Production

P2 HD

DVCPRO HD

Leica Dicomar* 13x Zoom Lens - Designed for HD

The AG-HVX200's Leica Dicomar lens has a large 82-mm (diameter) filter and 15 lens elements in 11 groups, including three aspherical lenses. It renders images beautifully, with delicate nuances and fine shading. The 13x zoom has a minimum object distance (MOD) of around 0.6 metre in telephoto mode and a wide-angle range that extends to around 32.5mm (35mm equivalent). The lens is also equipped with Panasonic's Optical Image Stabiliser.

* Leica is a registered trademark of Leica Microsystems IR GmbH, and Dicomar is a registered trademark of Leica Camera AG. The Leica Dicomar lens is manufactured using measurement instructions and quality assurance systems that have been certified by Leica Camera AG based on the company's quality standards.

New Progressive CCD and High-Performance DSP

The high-sensitivity 1/3" progressive CCD provides 1080/60p resolution. A digital signal processor that uses 14-bit A/D conversion and 19-bit inner processing for HD/SD conversion helps deliver images with quality and sensitivity suitable for use in any format.

High Image Quality and Multi-Format Versatility

The DVCPRO HD codec used in the AG-HVX200 has a proven record in recording 1080/25p*1, 1080/50i or 720/50p HD images for broadcast and movie use. You can use DVCPRO 50, DVCPRO or DV for SD (576i) recording*2. Both 16:9 and 4:3 aspect ratios are supported in SD. The P2 card can be used for recording in any codec; mini DV tape can be used for DV.

*1 In 1080/25p, a 2:2 pull-down is used to record 50i images.

*2 The AVC-Intra codec option is not supported.

Two P2 Slots and a Host of Recording Functions

The P2 card's high speed and reliability make it ideal for use in the field.

- Instant REC start: Recording starts right away; no searching for blank space or worries about erasing previous materials
- Clip thumbnail: Each cut is recorded as a clip (file). Thumbnails allow easy playback and info display.
- Shot marker: Shots can be marked OK/NG during or after recording.
- Hot swapping: Two card slots make hot-swapping possible. This and P2 store let you record for extended periods using just a few cards.
- Loop REC: Successively rewrites over data at preset time intervals; ideal for surveillance or observation
- Pre-REC: Lets you record events that occurred before you pressed the REC button (approx. 3 seconds in HD, 7 seconds in SD).
- One shot REC: Good for animation. Shots are 1 second per frame.
- Interval REC: Intermittently records two frames at 10-minute intervals.

Variable Frame Rate - A First in This Class

The AG-HVX200 is first in its class to offer the variable frame rate* function popularised in the Varicam. In 720p mode you can choose any of 11 frame rates from 12p to 50p. This allows effects like overcranking and undercranking.

*Frame rate: 12, 18, 20, 23, 25, 27, 30, 32, 37, 48 or 50 fps

720p Native and Over 50p Modes

Native mode: New in P2 card recording, this lets you record at the camera's frame rate in 720p, then play back at the normal rate to attain speed effects without using a frame rate converter.

Over 50p mode: Uses the same method as Varicam to convert a signal to 50p and record it. It allows streaming output through the IEEE 1394 terminal for backup recording onto an external VTR.

Built-In Mini-DV Tape Drive

A mini-DV tape drive lets you record in DV at 50i, or 25p, down-convert HD data recorded on P2 cards, and dub onto DV tape. It also lets you convert the frame rate of material recorded in 720p native mode to attain easy speed effects.

Manually Operated Cam-Driven Zoom, Focus and Aperture

- Cam-driven manual zoom: Feels just like the zooms on professional

interchangeable lenses

- Manual focus: Features a focus ring just like those on interchangeable lenses and a focus assist (centre zoom) function for HD recording
- Manual aperture: Large dial with selectable operating direction
- Manual gain: 3-position selector lets you boost the gain to +12 dB (up to +18 dB with User button)
- ND filter: Two positions (1/8 and 1/64)
- Shutter speed: From 1/12 to 1/2000 second, plus synchro scan (variable)

Auto, Scene and User Functions

- Six scene files: Use dial to set and retrieve files; Files can be stored on an SD Memory Card
- Three User buttons: Easy one-touch operation
- Auto/manual switch: ON/OFF for Auto Aperture, Auto Gain, Auto Tracking White Balance and Auto Focus
- White Balance with Auto Tracking White Function: Two settings can be stored in memory; Auto Tracking White function provided for active shooting

Drive Mode Supports Both IEEE 1394 and USB 2.0

IEEE 1394 (SBP2 compatible) and USB 2.0 PC interfaces let you use the AG-HVX200 as a P2 drive for a Macintosh or Windows-based nonlinear editor. You can do everything from recording to editing with just the AG-HVX200 and a PC. The IEEE 1394 interface also allows streaming output for synchronised backup onto an external VTR or FS-100 Focus Fire Store. You also can copy files onto an external standalone hard drive.

Other Professional Functions

- Two XLR audio input terminals with 48-V phantom power supply
- Two large level dials
- Large, tiltable electronic viewfinder and 3.5" colour LCD monitor
- Time-code-matched editing with multiple camcorders connected by IEEE 1394 cable
- Files with camera settings can be stored on an SD Memory Card.
- 1080i/720p/480i analogue component signals can be output through the D4 terminal.
- 16:9 letterbox mode/squeeze mode (for SD recording)
- Mode check, zebra, marker, tally lamp, and camera remote functions
- Magnesium alloy diecast chassis withstands rugged use

P2 viewer

Bin Area

This area uses icons to display clips in a list. A mark is displayed over the icon of each clip containing a shot marker, voice memo, proxy data, or 16:9 image. The split window design makes it easy to copy clips.

View Area

This area is used to watch previews or story outlines of clips selected in the bin area. Double-clicking on a clip displays a timeline.



Property Area (metadata)

This area provides text information on selected clips. Information can include the clip name, video codec, frame rate, audio sampling rate, TC, duration, photographer, recording date, location, equipment used, program name, scene number, take number and more. Properties can be partially edited in the window.

Memo Area

When a clip's timeline is displayed in the view area, any voice memos and text memos recorded on the clip are displayed here in a list.

Easy Viewing and Copying of P2 Files

P2 Viewer 3.0

P2 APPLICATION SOFTWARE (A FREE DOWNLOAD FOR P2 USERS)

Available as a free download, P2 Viewer lets you use a Windows PC* to view and manipulate clips recorded onto P2 cards. P2 Viewer's sophisticated graphical user interface makes it easy to access and use all P2 file functions.

To download P2 Viewer: <http://panasonic.biz/sav/p2/p2viewer/>

*Microsoft® Windows 2000 SP4, Microsoft® Windows XP Professional SP2, or newer OS. Microsoft® DirectX 9.0b or newer version must be installed. Full-color (32-bit) display, and an audio function. The P2 driver included with the P2 product must be installed. DVCPROHD format clips cannot be played back on personal computers that do not have a CPU that supports SSE2 instructions such as Pentium M, Pentium 4, Pentium D or Celeron D.

*Recommended environment to play back DVCPRO HD format clips :
CPU: Pentium D (3.2GHz or greater)
RAM: 1GB or greater

Main Features

- Plays P2 clips (DVCPRO HD, DVCPRO 50, DVCPRO, DV)
- Plays proxy files
- Displays a mark over icons of clips containing shot markers, voice memos, 16:9 wide images, and proxy data
- Displays metadata-based clip filtering
- Displays clip properties, allows partial editing of properties
- Uploads metadata to a P2 cam using an SD Memory Card
- Records, plays, moves and deletes voice memos
- Writes, displays, moves and deletes text memos
- Copies clips to another P2 card or to a hard drive
- Reformats P2 cards

P2 Optional Accessories

P2 cam (AJ-SPC700/AJ-SPX800/AJ-SPX900) OPTIONS



AJ-VF20WBE
2" EVF 16:9/4:3 SWITCHABLE



AJ-VF15BE
1.5" EVF FOR 4:3



FUJINON 2/3" LENS



CANON 2/3" LENS



AJ-MC700
MICROPHONE KIT



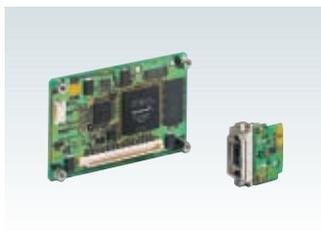
AJ-MH800G
MICROPHONE HOLDER



AJ-YAX800G
VIDEO ENCODER CARD
*Camera-Recorder software upgrade is required.



SD MEMORY CARD



AJ-YAD800G
IEEE 1394 INTERFACE BOARD



SHAN-TM700
TRIPOD ADAPTR



AJ-EC3
EXTENSION CONTROL UNIT



ANTONBAUER BATTERY PACK



ANTONBAUER AC
ADAPTOR/BATTERY CHARGER



ULTRA LIGHT
ANTONBAUER ULTRA LIGHT



AJ-SC900
SOFT CARRYING CASE
*Not available in some area



AJ-HT901G
HARD CARRYING CASE
*Not available in some area



SHAN-RC700
RAIN COVER
*Not available in some area

P2 cam (FOR AJ-SPX800/AJ-SPX900) OPTIONS



AJ-MC900G*
STEREO MICROPHONE
* Requires modification to the camera-recorder mic terminal. Ask your local sales company or dealer for details. (for AJ-SPX800/SPX900)

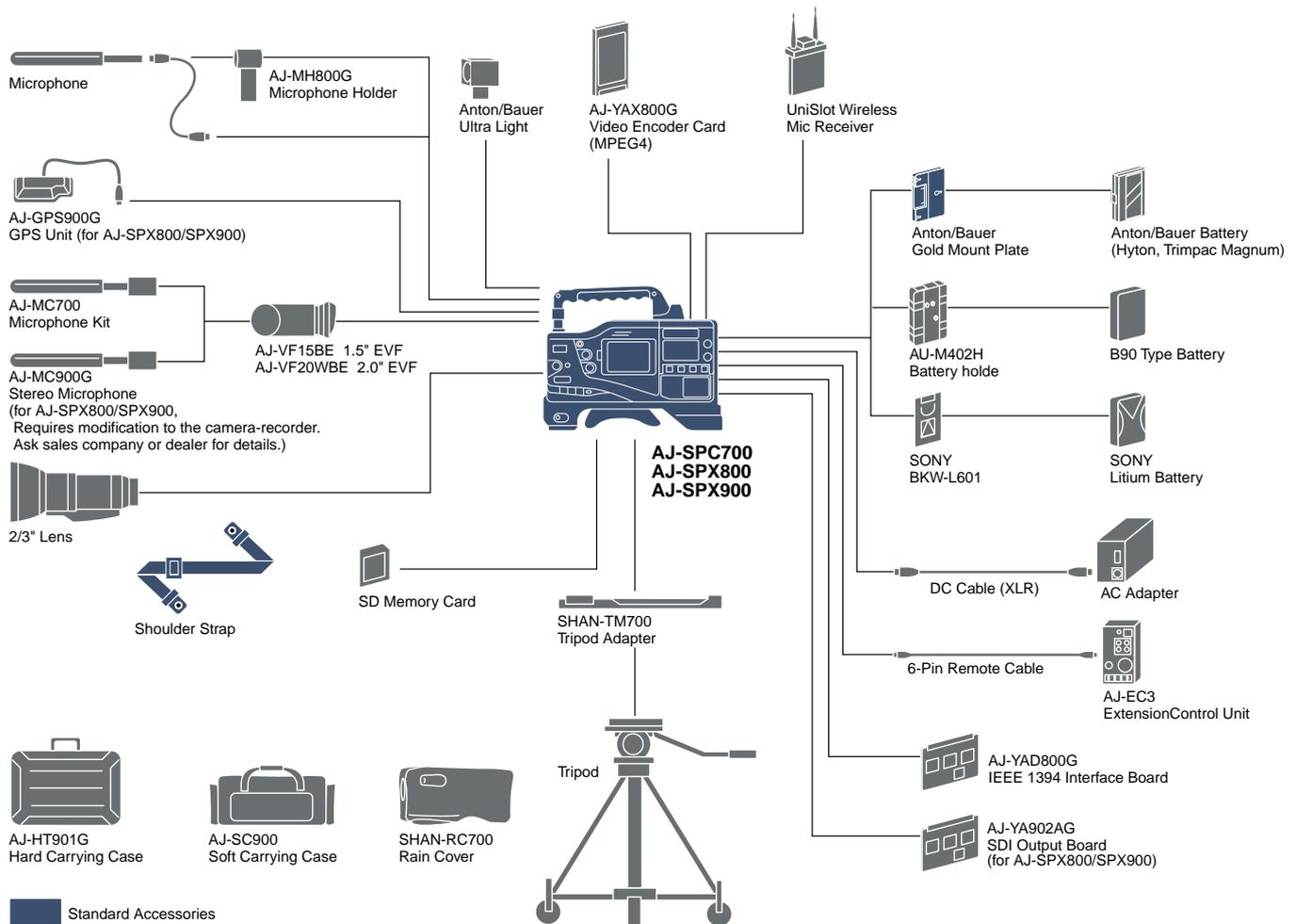


AJ-GPS900G
GPS UNIT
(for AJ-SPX800/SPX900)



AJ-YA902AG
SDI OUTPUT BOARD
(for AJ-SPX800/SPX900)

P2 cam SYSTEM CHART



P2 handheld (AG-HVX200) /P2 store (AJ-PCS060G) OPTIONS



AG-MC100G
MICROPHONE FOR AG-HVX200



CGA-D54S
BATTERY PACK (5.4 Ah) FOR
AG-HVX200 AND AJ-PCS060G

P2 deck (AJ-SPD850) OPTIONS



AJ-DVD850G
DVD-RAM/DVD-R DRIVE



AJ-YA755G
SDI BOARD



AJ-YAD850G
IEEE 1394 INTERFACE BOARD



AJ-MA75P
RACK MOUNT ADAPTER
*slide rail, not included

HD/SD LCD MONITORS



BT-LH900A
8.4" LCD HD/SD MONITOR



BT-LH1700W
17" LCD HD/SD MONITOR



BT-LH2600W
26" LCD HD/SD MONITOR

P2 Specifications

AJ-P2C008HG/AJ-P2C004HG

MEMORY CARD (P2 CARD)

Common Specification

Interface:	CardBus (PC Card standards)
Power Source:	DC3.3V ±0.3V
Power Consumption:	Approx. 1.5W
Operating Temperature:	-20°C to 60°C
Operating Humidity:	5% to 90% (no condensation)
Storage Temperature:	-40°C to 80°C
Storage Humidity:	5% to 90% (no condensation)
Weight:	45 g
Dimensions:	54 x 5 x 85.6 mm

AJ-P2C008HG Specifications*1

Recording Capacity:*2	Approx. 8GB
Reading/Writing Speed:*3	640 Mbps
Recording Playback Time:	DVCPRO HD: Approx. 8 min. (Video/8CH audio) DVCPRO 50: Approx. 16 min. (Video/4CH audio) DVCPRO/DV: Approx. 32 min. (Video/2CH audio)

AJ-P2C004HG Specifications

Recording Capacity:*2	Approx. 4GB
Reading/Writing Speed:*2	640 Mbps
Recording Playback Time:	DVCPRO HD: Approx. 4 min. (Video/8CH audio) DVCPRO 50: Approx. 8 min. (Video/4CH audio) DVCPRO/DV: Approx. 16 min. (Video/2CH audio)

*1. The upgrade of the P2 equipment is necessary to use 8GB P2 cards.

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

*3 This data transfer speed is theoretical value. An actual data transfer speed varies according to operating condition and devices.

AJ-SPC700

MEMORY CARD CAMERA-RECORDER (P2 CAM)

General Specification

Power Source:	DC 12V (11.0V to 17.0V)
Power Consumption:	17W (without option, LCD monitor off)
Operating Temperature :	0°C to 40°C
Storage Temperature:	-20°C to 60°C
Operating Humidity:	10% to 85% (relative humidity)
Continuous Operation Time:	Approx. 160 min. without option, LCD monitor off and using AntonBauer Hytron50 battery
Weight:	Approx. 4.1 kg (9.26 lbs) (main unit only, without VF mount)
Dimensions (W x H x D):	137 x 209 x 318 mm (5-3/16" x 8-1/2" x 12-91/2") without handle and wireless option cover

Camera Section

Image Sensor:	2/3" IT-CCD x 3 NTSC: 520,000 pixels, PAL: 600,000 pixels
Optical Filters:	1: 3200K 2: 5600K+1/8ND 3: 5600K 4: 5600K+1/64ND
Quantizing:	14 bit linear/18 MHz
Digital Signal Processing:	36 MHz
Horizontal Drive Frequency:	18 MHz
Programmable Gain:	-3/0/+3/+6/+9/+12/+15/+18/+21/+24/+27/+30 dB selectable 3-position (L/M/H)
Super Gain:	+30/+36 dB selectable
Shutter Speed:	NTSC: 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000 sec PAL: 1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000 sec
Syncro Scan Shutter:	NTSC: 1/60.3 to 1/249.7 sec PAL: 1/50.4 to 1/248.0 sec
Lens Mount:	2/3" bayonet type

Optical System:	F 1.4 prism system
Sensitivity:	F11.0 at 2000 lux, 89.9% reflect
Minimum Illumination:	0.5 Lux at F1.4, +36dB gain
Video S/N:	NTSC: better than 64dB (standard) PAL: better than 62dB (standard)
Horizontal Resolution:	750 TV lines at center, standard
Vertical Resolution:	NTSC: 400/450 lines (super V), PAL: 450/500 lines (super V)
Registration:	Less than 0.05% (whole zone, without lens distortion)
LCD Monitor:	3.5" 200,000-pixels LCD color monitor

Memory Card Recorder Section

Video Recording Format:	DVCPRO 50/DVCPRO/DV switchable
Audio Recording Format:	48kHz/16bits PCM audio, max. of 4CH *CH1&2 same audio will be recorded on to CH3&4
Recording Media:	P2 card
Recording/Playback Time*:	[25 Mbps video and 2CH audio] [DVCPRO/DV]
	AJ-P2C004HG by single cards using 5 card slot Approx. 16 min. Approx. 80 min.
Recording/Playback Time*:	[50 Mbps video and 4CH audio] [DVCPRO 50]
	AJ-P2C004HG by single cards using 5 card slot Approx. 8 min. Approx. 40 min.

Video Specification (when played back with standard player, component out)

NTSC Bandwidth:	Y: 30 Hz to 5.75 MHz, +1.0/-3.0 dB (DVCPRO 50) (AJ-SPC700P) PB/PR: 30 Hz to 2.75 MHz, +1.0/-3.0 dB (DVCPRO 050)
PAL Bandwidth:	Y: 25 Hz to 5.75 MHz, +1.0/-3.0 dB (DVCPRO 50), (AJ-SPC700E) PB/PR: 25 Hz to 2.75 MHz, +1.0/-3.0 dB (DVCPRO 50)
S/N Ratio:	Better than 55 dB

Audio Specification (when played back with standard player)

Sampling Frequency:	48 kHz (sync. with video)
Quantizing:	16 bits
Frequency Response:	20 Hz to 20 kHz, ±1.0dB (reference level)
Dynamic Range:	More than 85 dB (1 kHz, AWTD)
Distortion:	Within 0.1% (1 kHz, reference level)
Headroom:	NTSC: 20 dB, PAL: 18 dB

Input and Output

GENLOCK IN:	BNC, 1.0 Vp-p, 75 Ω (switchable to VIDEO IN)
CAM OUT:	BNC, 1.0 Vp-p, 75 Ω
VIDEO OUT:	BNC, 1.0 Vp-p, 75 Ω
AUDIO IN:	XLR 3-pin x 2 (CH1/CH2), LINE/MIC/MIC+48V switchable, LINE: -3/0/+4 dBu selectable, MIC: -6/0/-50 dBu selectable, MIC+48V: Phantom +48 V, -6/0/-50 dBu selectable
MIC IN:	XLR 3-pin, balanced, 3 kΩ, -5/0/-40 dBu selectable, Phantom +48 V ON/OFF
WIRELESS IN:	D-sub 25-pin, -40 dBu
AUDIO OUT:	XLR 3-pin, balanced, low-impedance, -3/0/+4 dBu selectable
PHONES OUT:	Stereo Mini Jack x 2
TC IN:	BNC, 0.5 to 8 Vp-p, 10 kΩ
TC OUT:	BNC, low-impedance, 2.0±0.5 Vp-p
DC IN:	XLR 4-pin, DC 12 V (DC 11.0 V to 17.0 V)
DC OUT:	4-pin, DC12 V (DC11.0 to 17.0 V), Max. 1A
LENS:	12-pin
EVF:	20-pin
ECU:	6-pin (for AJ-EC3P)

Included Accessories

Shoulder strap, Front audio volume knob, Screw M2 x 6 mm (XYNZ+J6FZ)

AJ-SPX900/SPX800

MEMORY CARD CAMERA-RECORDER (P2 CAM)

General Specification

Power Source:	DC 12V (11.0V to 17.0V)
Power Consumption:	24W (without option, LCD monitor off) 27W (with SDI & IEEE 1394 option, LCD monitor on)
Operating Temperature :	0°C to 40°C
Storage Temperature:	-20°C to 60°C
Operating Humidity:	10% to 85% (relative humidity)
Continuous Operation Time:	Approx. 120 min. without option, LCD monitor off and using AntonBauer Hytron50 battery
Weight:	Approx. 4.2 kg (main unit only, without VF mount)
Dimensions (W x H x D):	137 x 209 x 318 mm without handle and wireless option cover

Camera Section

Image Sensor:	2/3" IT-CCD (600,000 pixels) x 3
AJ-SPX900 Optical Filters:	ND (1: CLEAR, 2: 1/4 ND, 3: 1/16 ND, 4: 1/64 ND) CC (1: Cross, 2: 3200K, 3: 4300K, 4: 6300K)
AJ-SPX800 Optical Filters:	1: 3200K, 2: 5600K+1/8ND, 3: 5600K, 4: 5600K+1/64ND
Quantizing:	14 bit linear/18 MHz
Digital Signal Processing:	36 MHz
Horizontal Drive Frequency:	18 MHz
Programmable Gain:	-3/0/+3/+6/+9/+12/+15/+18/+21/+24/+27/+30 dB selectable 3-position (L/M/H)
Super Gain:	+30/+36/+42/+48 dB selectable
Digital Super Gain:	+6/+12/+20dB selectable
Shutter Speed:	1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000 sec
Syncro Scan Shutter:	1/50.4 to 1/248.0 sec
Lens Mount:	2/3" bayonet type
Optical System:	F 1.4 prism system
Sensitivity:	F13 at 2000 lux, 89.9% reflect
Minimum Illumination:	0.01 Lux at F1.4, +48dB and +20dB gain
Video S/N:	better than 63dB (standard)
Horizontal Resolution:	750 TV lines at center, standard
Vertical Resolution:	450/500 lines (super V)
Registration:	Less than 0.05% (whole zone, without lens distortion)
LCD Monitor:	3.5" 200,000-pixels LCD colour monitor

Memory Card Recorder Section

Video Recording Format:	DVCPRO 50/DVCPRO/DV switchable
Audio Recording Format:	48kHz/16bits, 4CH (DVCPRO 50), 2CH/4CH switchable (DVCPRO/DV)
Recording Media:	P2 card
Recording/Playback Time*: [DVCPRO/DV]	[25 Mbps video and 2CH audio] by single cards using 5 card slot AJ-P2C004HG Approx. 16 min. Approx. 80 min. AJ-P2C008HG Approx. 32 min. Approx. 160 min.
Recording/Playback Time*: [DVCPRO 50]	[50 Mbps video and 4CH audio] by single cards using 5 card slot AJ-P2C004HG Approx. 8 min. Approx. 40 min. AJ-P2C008HG Approx. 16 min. Approx. 80 min.

Video Specification (when played back with standard player, component out)

Bandwidth:	Y: 25 Hz to 5.75 MHz, +1.0/-3.0 dB (DVCPRO 50), P _B /P _R : 25 Hz to 2.75 MHz, +1.0/-3.0 dB (DVCPRO 50)
S/N Ratio:	Better than 55 dB

Audio Specification (when played back with standard player)

Sampling Frequency:	48 kHz (sync. with video)
Quantizing:	16 bits
Frequency Response:	20 Hz to 20 kHz, ±1.0dB (reference level)
Dynamic Range:	More than 85 dB (1 kHz, AWTD)
Distortion:	Within 0.1% (1 kHz, reference level)
Headroom:	18 dB

Input and Output

GENLOCK IN:	BNC, 1.0 Vp-p, 75 Ω (switchable to VIDEO IN)
VIDEO MONITOR OUT:	BNC, 1.0 Vp-p, 75 Ω
VIDEO OUT:	BNC, 1.0 Vp-p, 75 Ω
AUDIO IN:	XLR 3-pin x 2 (CH1/CH2), LINE/MIC/MIC+48V switchable, LINE: 0/+4 dBu selectable, MIC: -60/-50 dBu selectable, MIC+48V: Phantom +48 V, -60/-50 dBu selectable
MIC IN:	XLR 3-pin, balanced, 3 kΩ, -50/-40 dBu selectable, Phantom +48 V ON/OFF
WIRELESS IN:	D-sub 25-pin, -40 dBu
AUDIO OUT CH1/CH2:	XLR 5-pin, balanced, low-impedance, 0/+4 dBu selectable
PHONES OUT:	Stereo Mini Jack x 2
TC IN:	BNC, 0.5 to 8 Vp-p, 10 kΩ
TC OUT:	BNC, low-impedance, 2.0±0.5 Vp-p
DC IN:	XLR 4-pin, DC 12 V (DC 11.0 V to 17.0 V)
DC OUT:	4-pin, DC12 V (DC11.0 to 17.0 V), Max. 1A
LENS:	12-pin
EVF:	20-pin
GPS:	6-pin (for AJ-GPS900G)
ECU:	6-pin (for AJ-EC3E)

Included Accessories

Shoulder strap, Front audio volume knob, Screw M2 x 6 mm (XYNZ+J6FZ)

AJ-SPD850

MEMORY CARD RECORDER (P2 DECK)

General Specification

Power Source:	AC 100 V to 240 V ±10%, 50/60 Hz
Power Consumption:	Max. 105 W
Operating Temperature:	5°C to 40°C
Operating Humidity:	10% to 80% (no condensation)
Weight:	15 kg
Dimensions (W x H x D):	424 x 175.2 x 430 mm
Recording Video Signal:	625i/50, 525i/60 switchable
Video Recording Format:	DVCPRO 50/DVCPRO/DV switchable
Audio Recording Format:	48kHz/16bits, 4CH (DVCPRO 50), 2CH/4CH switchable (DVCPRO/DV)
Recording Media:	P2 card
Recording/Playback Time*: [DVCPRO/DV]	[25 Mbps video and 2CH audio] by single cards using 5 card slot AJ-P2C004HG Approx. 16 min. Approx. 80 min.
Recording/Playback Time*: [DVCPRO 50]	[50 Mbps video and 4CH audio] by single cards using 5 card slot AJ-P2C004HG Approx. 8 min. Approx. 40 min.
Digital Slow:	-1 to +1 times normal speed (DVCPRO 50/DVCPRO/DV)

Video Specification (Digital Video)

Sampling Frequency:	Y: 13.5 MHz, P _B /P _R : 6.75 MHz (DVCPRO 50)
Quantizing:	8 bits
Video Compression Format:	DV-Based Compression (SMPTE314M)
Video Compression Ratio:	1/3.3 (DVCPRO 50), 1/5 (DVCPRO)
ErrorCorrection:	Reed-Solomon product code
Video Bit Rate:	50 Mbps (DVCPRO 50), 25 Mbps (DVCPRO/DV)
• Component IN/Component OUT	
Video Bandwidth (625i):	Y: 30 Hz to 5.75 MHz (-2.0 dB) P _B /P _R : 25 Hz to 2.75 MHz (-2.0 dB)
Video Bandwidth (525i):	Y: 30 Hz to 5.75 MHz (-2.0 dB) P _B /P _R : 30 Hz to 2.75 MHz (-2.0 dB)
S/N Ratio:	Better than 55 dB
K Factor:	Less than 1%
Y/C Delay:	Less than 20 nsec

P2 Specifications

• Composite IN/Composite OUT

Video Bandwidth (625i):	Y:	25 Hz to 5.5 MHz (-3.0 dB)
Video Bandwidth (525i):	Y:	30 Hz to 5.5 MHz (-3.0 dB)
Y/C Delay:		less than 20 nsec

Video Input Signal

Analogue Component In:	BNC x 3 (Y,PB,PR)	Y: 1.0 Vp-p, 75Ω, PB/PR (625i): 0.7 Vp-p, 75Ω (100% colour bar) PB/PR (525i): 0.486/0.7 Vp-p switchable, 75Ω (75% colour bar, 7.5% setup)
Analogue Composite In:	BNC x 2 (loop-through), 75Ω on/off, Video: 1.0 Vp-p (75Ω)	
Reference Input:	Analogue composite, BNC x 2 (loop-through), 75Ω on/off	
SDI Input (option):	BNC x 2 (active-through), serial digital component ITU-R BT.656-4 (PAL), SMPTE259M-C (NTSC) standard	

Video Output Signal

Analogue Component Out:	BNC x 3 (Y,PB,PR)	Y: 1.0 Vp-p, 75Ω, PB/PR (625i): 0.7 Vp-p, 75Ω (100% colour bar) PB/PR (525i): 0.486/0.7 Vp-p switchable, 75Ω (75% colour bar, 7.5% setup)
Analogue Composite Out:	BNC x 3, Video 1/Video 2 (Video/WFM selectable) Video 3 (superimpose on/off)	
SDI Output (option):	BNC x 3, SDI1, SDI2, SDI3 (superimpose on/off) ITU-R BT.656-4 (PAL), SMPTE259M-C (NTSC) standard	

Video Output Adjustment Range

Gain:	±3 dB
Chroma Gain:	±3 dB
Hue (Chroma Phase):	±30°
Set-up Level (Black Level):	±14 IRE (±100 mV)
Sync Phase:	±15 μsec
SC Phase:	±180°

Audio Specification (Digital Audio)

Sampling Frequency:	48 kHz (sync video)
Quantizing:	16 bits
Frequency Response:	20 Hz to 20 kHz, ±1.0 dB (reference level)
Dynamic Range:	More than 90 dB (1 kHz, emphasis off, "A" weighted)
Distortion:	Less than 0.05% (1 kHz, emphasis off, reference level)
Cross Talk:	Less than -80 dB (1 kHz, between 2 channels)
Wow & Flutter:	Below measurable limit
Headroom:	18 dB (PAL), 20 dB (NTSC)
De-emphasis:	T1=50 μsec, T2=15 μsec (on/off auto)

Audio Input Signal

Analogue Input:	XLR x 4 (CH1/CH2/CH3/CH4), 600Ω/high-impedance switchable, +4/0/-20 dBu switchable
Digital Input:	BNC x 2 (CH1/2, CH3/4), AES/EBU format
Serial Digital Input:	BNC x 2 (active through), 75Ω ITU-R BT.656-4 standard (PAL) SMPTE259M-C/272M-A standard (NTSC)

Audio Output Signal

Analogue Output:	XLR x 4 (CH1/CH2/CH3/CH4), low-impedance, +4/0/-20 dBu switchable
Digital Output:	BNC x 2 (CH1/2, CH3/4), AES/EBU format, 1.0±0.2 Vp-p 75Ω
Serial Digital Output:	BNC x 3, 75Ω ITU-R BT.656-4 standard (PAL) SMPTE259M-C/272M-A standard (NTSC)
Monitor Output:	XLR x 2, low-impedance, +4/0/-20 dBu switchable
Headphones:	Stereo mini jack, 8Ω, variable level

Other Input and Output

Time Code Input:	XLR x 1, 0.5 to 8.0 Vp-p, 10 kΩ
Time Code Output:	XLR x 1, low-impedance, 2.0±0.5 Vp-p
RS-422A Input/Output:	D-sub 9-pin, RS-422A Interface
RS-232C:	D-sub 25-pin, RS-232C Interface
Encoder Remote:	D-sub 15-pin

AJ-PCS060G

PORTABLE HARD DISK UNIT (P2 STORE)

General Specification

Power Source:	DC 7.2 V with battery pack DC 7.9 V with AC adaptor Max. 1.3 A (0.8 A when standard operation)
Permissible Temperature:	Operating: 0°C to 40°C Storage: -20°C to 60°C
Permissible Humidity:	Operating: 5% to 85% (no condensation) Storage: 0% to 90% (no condensation)
Weight:	Approx. 0.65 kg
Dimensions (W x H x D):	90 x 45 x 180.5 mm

Hard Disk Drive

HDD Capacity:	60 GB
PC Operating System:	Proper operation guaranteed Windows XP Professional (later SP2) Windows 2000 (later SP4) Mac OS X (10.4.2, 10.4.6)*
PC Interface:	USB Ver. 2.0 compliant, reed only

Card Slot

PC Card Slot:	for P2 Card (AJ-P2C002SG/P2C004HG) x 1 slot (CardBus compliant)
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*Mac of the Intel CPU base is not supported.

AJ-PCD20

MEMORY CARD DRIVE (P2 DRIVE)

General Specification

Power Source:	AC 100 V to 240 V (0.9A to 0.5A), 50/60 Hz DC 16 V (0.8 A) with AC adaptor DC 12 V (1.0 A) when PC built-in
Operating Temperature:	0°C to 40°C
Operating Humidity:	0% to 90% (no condensation)
Weight:	Approx. 1.2 kg (2.64 lbs)
Dimensions (W x H x D):	148.4 x 42.5 x 199.5 mm excluding protruding parts

PC System Requirement

Operating System:	Windows XP Professional (later SP2) Windows 2000 (later SP4) Mac OS X (later 10.3.9, later 10.4.2)
Main Memory:	512 MB or greater recommended
Interface:	IEEE 1394b and USB Ver. 2.0 compliant

Card Slot

PC Card Slot:	PC Card (Type II) x 5 slot (CardBus compliant)
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AG-HVX200

DVCPRO HD MEMORY CARD CAMERA RECORDER

GENERAL

Supply Voltage:	DC7.2V / 7.9V, Battery or DC Input
Power Consumption:	11.6W (when viewfinder is used) 12.0W (when LCD monitor is used) 14.0W (Max)
Operating Temperature:	0°C to +40°C
Operating Humidity:	10% to 85% (no condensation)
Weight:	Approx. 2.5 k g excluding battery and accessories, Approx. 2.85 k g with P2 card x 2 and battery (5400Ah)
Dimensions (WxHxD):	168.5 x 180 x 390 mm excluding prominent parts

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 (f=4.2mm to 55mm) (35mm equivalent: 32.5mm to 423mm)
Filter Diameter:	82mm
Optical Color Separation:	Prism system
ND Filter:	1/8, 1/64
Gain Selection:	(50i/50p mode) 0/+3/+6/+9/+12/+18 dB, Slow shutter (1/12): Gain fix (0 dB) (25p/25pN mode) 0/+3/+6/+9/+12/ dB Slow shutter (1/12): Gain fix (0 dB), VFR record frame rate 25pN below: Gain fix (0 dB)
Variable Frame Rate:	12/18/20/23/25/27/30/32/37/48/50 fps (frame/sec)
Shutter Speed (Preset):	50i/50p mode: 1/50 (OFF), 1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000 sec. 25p/25pN mode: 1/25, 1/50 (OFF), 1/60, 1/120, 1/250, 1/500, 1/1000 sec.
Shutter Speed (Variable): (Video Cam Mode) (Film Cam Mode)	50i/50p mode: 1/50.0 sec. to 1/248.9 sec. 25p/25pN mode: 1/25.0 sec to 1/248.9 sec. Aperture Angle: 10° to 350°
Slow Shutter Speed:	50i/50p mode: 1/25, 1/12 25p/25pN mode: 1/12
Minimum Luminance:	3 lux (F1.6, +12 dB Gain, at 1/25 shutter)

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:	DVCPRO HD: 1080i/50i, 1080i/25p (over 50i), 720p/50p, 720p/25p (over 50p), 720p/25pN (Native record) DVCPRO 50/DVCPRO/DV: 576i/50i, 576i/25p (over 50i)
Audio Recording Format:	PCM digital recording 48 kHz / 16 bits 4ch (DVCPRO HD / DVCPRO 50), 2ch/4ch selectable (DVCPRO / DV)
Recording Time*: (Approx.)	4 minutes with one AJ-P2C004HG (DVCPRO HD, 4ch, 1080/50i) 8 minutes with one AJ-P2C008HG (DVCPRO HD, 4ch, 1080/50i)

VTR Part General

Recording Format:	DV (Digital Video SD)
Tape Format:	Mini DV cassette (6.35mm width metal evaporated tape)
Recording Video Signals:	576i/50i (PAL), 576i/25p (25p convert to 576i/50i and record)
Frame Rate:	50i, 25p
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 Time code: helical track (sub-code area)

Tape Speed:

Quality Series Tape	SP mode: 18.831mm/sec, LP mode: 12.568mm/sec
Recording Time:	SP mode: 60 minutes, LP mode: 90 minutes (When using AY-DVM63)
FF/Rew Time:	Approx.140 sec. (when AY-DVM63 is used)

VIDEO connectors

Video Out:	Analogue component, Y: 1.0Vp-p, 75Ω, Pb/Pr: 0.7Vp-p, 75Ω (720p, 1080i, 576i for monitor)
Video In/Out:	Analogue composite, Pin Jack x 1, 1.0Vp-p, 75Ω (In/out automatically switched, Input DV tape mode only)
S-video In/Out:	4-pin, Y/C Y: 1.0Vp-p, 75Ω, C: 0.3Vp-p, 75Ω (In/out automatically switched, Input DV tape mode only)

AUDIO connectors

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

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) Focus, Iris: Mini jack (3.5mm diameter)
DC Input:	2P x 1, 7.9V

Monitor, Speaker, 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
Internal Speaker:	28mm round shape x 1
AC Adapter:	Weight: 160 g, Dimensions: 70 (W) x 44.5 (H) x 116 (D)mm
Supplied Accessories:	AC adapter/charger, AC Cord, DC Cord, Battery (5400mAh), Wireless remote controller, Microphone holder, Shoulder strap, Component video cable, P2 card software driver install (CD-ROM)

* Time shown above is when you record a series of 1 shot to P2 card. Depending on numbers of shots you record, time will get shorter than the number shown above.

The P2 Partners

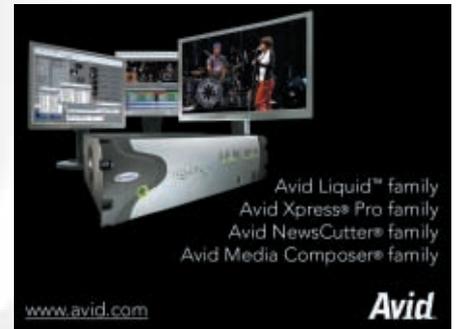
Panasonic has long followed an "open mind" policy that ensures easy use with products made by other manufacturers via interfaces such as IEEE 1394. This gives users the enormous benefit of purchasing new equipment that's compatible with their current hardware and software just with minimum additional investment .

We've followed the same policy with the P2 card. Throughout its development, Panasonic has provided advanced information to other manufacturers to enable them to develop products that use the P2 card.

We call this collaboration the P2 Partners. Thanks to the P2 Partners, you'll be able to choose a wider variety of P2-compatible products from a number of manufacturers.



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- MXFTk

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Factories of Systems Business Group have received ISO14001:2004-the Environmental Management System certification.