

**Panasonic**  
ideas for life



*DVCPRO P2 SERIES* **DVCPRO 50** **DVCPRO HD**

# *Get Ready to Go* **Beyond**

Get ready to take a leap beyond the conventional, a leap beyond today's limits. Get ready for Panasonic's DVCPRO P2 Series – broadcast equipment that brings unprecedented mobility, performance and convenience to news gathering.

## 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.

At the heart of the P2 Series is Panasonic's innovative plug-in PC card type media. Called P2 ("Professional Plug-in"), these solid-state cards are neither tape nor disc and require no moving parts. P2 cards fit neatly in the slots of P2 Series equipment and record DVCPRO HD/DVCPRO 50/DVCPRO/DV data. The P2 card is extremely rugged, and it assures outstanding anti-vibration and anti-shock performance to the P2 camera-recorder. Most importantly, the P2 card's high data transfer speed, ruggedness and expandability brings an entirely new era of mobility to news gathering.

P2 Series equipment records in MXF – a file format whose exceptional PC versatility is transforming the news production workflow. The P2 provides random access to thumbnail-displayed scenes for instant playback and on-air transmission. The P2 card mounts directly into the PC card slot on a PC, so you have instant access for nonlinear editing and for faster data transferring into the network

The P2 Series is a fusion of the very best in AV and IT worlds, while also offering compatibility with today's studio equipment. It goes way beyond today's generation of equipment. The P2 Series 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).









# 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 -4 to 140°F (-20 to 60°C), and can be stored in temperatures from -40 to 176°F (-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 color 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.

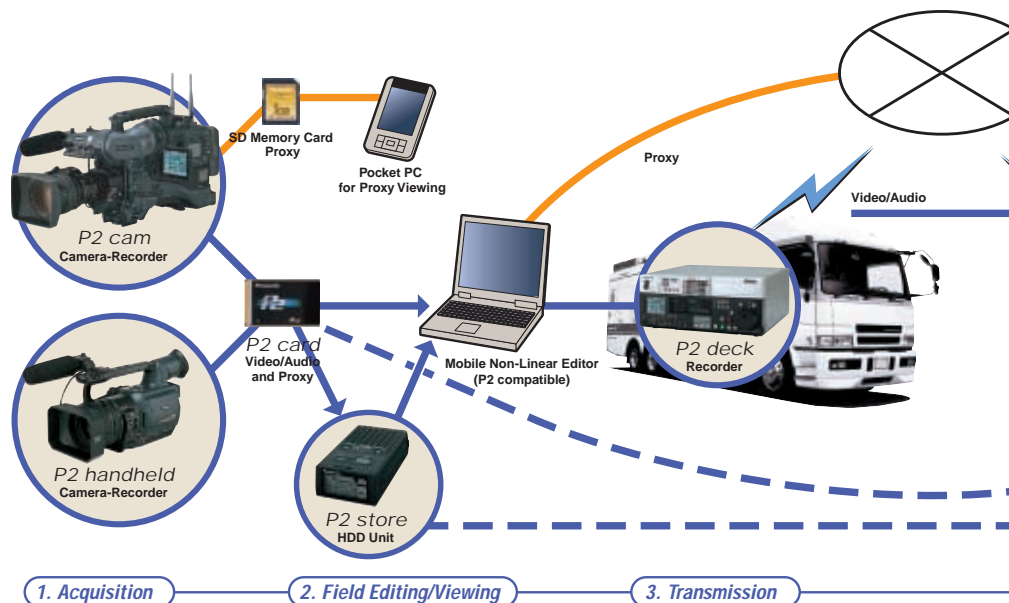
### Newly Developed; P2 handheld and P2 store

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

The new AJ-PCS060G P2 Store - a portable disk unit that provides high-speed data copying - simplifies the use of P2 cards, speeds up production, and helps keep costs down.

### Immediate Viewing, Data Transfer and Nonlinear Editing

P2 is fast. In data transfer and editing speed, it stands far beyond other media. The P2 card slips into the card slot on a laptop PC\* and mounts directly — no digitizing required — for immediate viewing or network data transfers. With a P2-compatible mobile nonlinear editor, you can edit recorded clips directly. No uploading (file copying) is necessary. With a USB 2.0 cable, you can connect the P2 cam to a PC and use the cam's five card slots as an external drive. Powerful functions like these



# ING: IT-based News Gathering



deliver you unprecedented speed in the field and greatly reduce production time — a big advantage in this "get the news first and faster" business. Also, being able to use a laptop PC as a monitor, editor, and for data transfer means more mobility and less strain on your budget.

## 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 Color 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.

## Studio Networking: The P2 drive

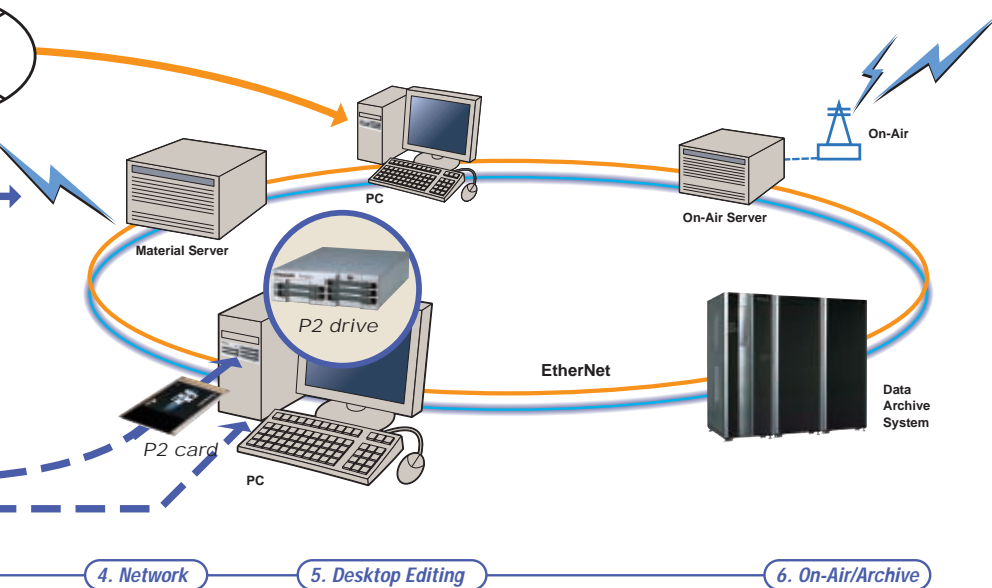
The DVCPRO P2 Series stands as a remarkably high-speed solution to studio networks that use nonlinear editors and AV servers. The P2 drive is designed for either built-in or external use on any PC equipped with a USB 2.0 interface. With the P2 drive connected, you can use a desktop PC\* to instantly preview the data on a P2 card or transfer it to the server. Or, with a P2-compatible nonlinear editor you can use recorded clips directly as editing clips.

## More Flexibility — Combined VTR Use and Data Archive System

Panasonic's ING concept — IT-based news gathering — is not a closed system. The P2 decks are equipped with the same interfaces as today's DVCPRO VTRs, so they can link seamlessly into conventional systems for tape editing and on-air transmission.

Simply, the P2 Series lets you make full use of existing equipment while moving your facility forward to a true nonlinear editing operation.

Panasonic is also developing data archive system. This will give you several exciting ways to build a powerful, flexible system that delivers the higher performance you need at a cost that fits your budget.

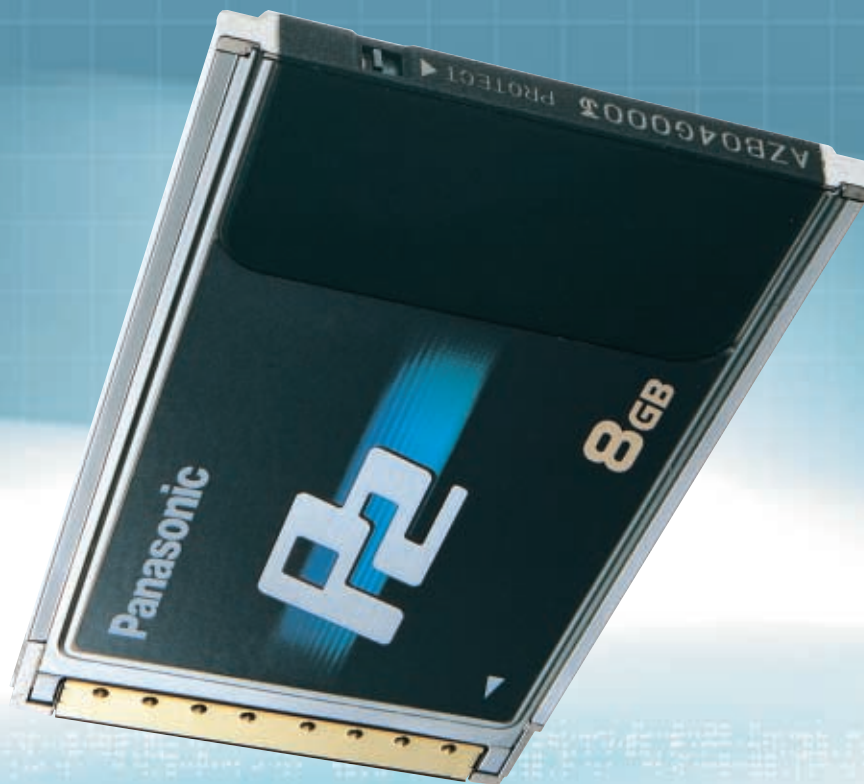


\* The P2 card driver (standard equipped) must be installed. The P2 card driver operates under Windows XP and Windows 2000.



# P2 card

*P2 card Line-up Expands with New 8GB Capacity*



**AJ-P2C008HG**  
H-Series 8GB Memory card  
(available soon)



**AJ-P2C004HG**  
H-Series 4GB Memory card



**AJ-P2C002SG**  
S-Series 2GB 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.

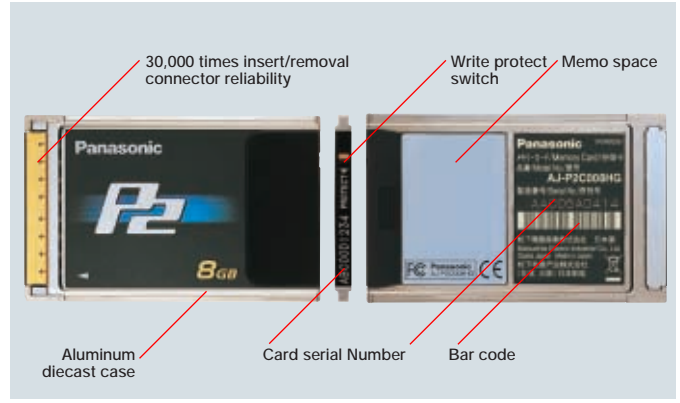
## Super-Compact Cards with Large Capacity and High Speed

In developing the P2 card, Panasonic applied some of the same technology that proved so successful in the SD Memory card.\*<sup>1</sup> 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\*<sup>2</sup> 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\*<sup>3</sup>, 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 helps prevent accidental data deletion.

## Reliable in the Face of Shock and Temperature Change

The super-slim P2 card weighs only about 1.5 ounces (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 –4 to 140°F (–20 to 60°C), and can be stored in temperatures from –40 to 176°F (–40 to 80°C). In durability too, the P2 card goes well beyond ordinary PC cards. Its connector, 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.

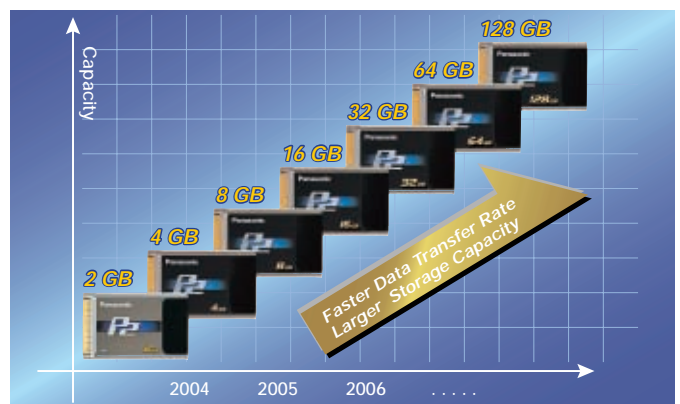
## P2 card Recording Time Reference

Model Number	Capacity Indication* <sup>2</sup>	Approx. Recording Time				Data Transfer Speed* <sup>3</sup> (Max.)
		DVCPRO/DV (Audio 2ch)	DVCPRO 50 (Audio 4ch)	DVCPROHD (1080/60i)	DVCPROHD (720/24P)	
AJ-P2C002SG	2 GB	8 min.	4 min.	—	—	320 Mbps
AJ-P2C004HG	4 GB	16 min.	8 min.	4 min.	10 min.	640 Mbps
AJ-P2C008HG	8 GB	32 min.	16 min.	8 min.	20 min.	640 Mbps

\*<sup>1</sup> 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. \*<sup>2</sup>Total card capacity includes space for data management such as system data, therefore, actual usable area is less than capacity indicated on the card.

\*<sup>3</sup>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 using P2. Its excellent cost performance brings the many benefits of P2 home in a form that will lower your total operating costs with lowest power consumption in its class.

### 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 accidentally 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 64 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 color LCD monitor:** You can view up to 12 thumbnails at once on the 3.5" color 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/or 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.





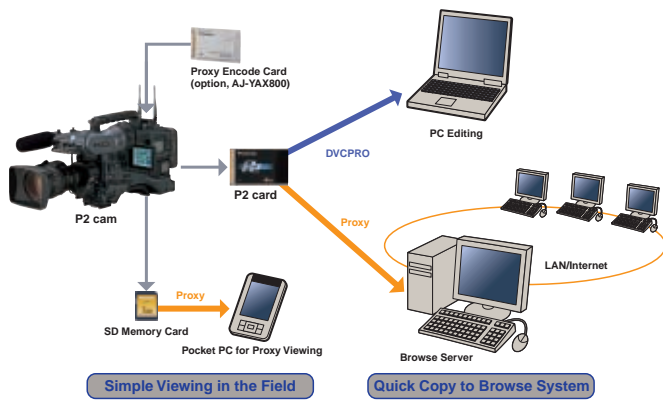


Option Slot

## 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 196kbps 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.



Simple Viewing in the Field

Quick Copy to Browse System

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



AJ-SPC700 Rear Connector Panel

## 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.

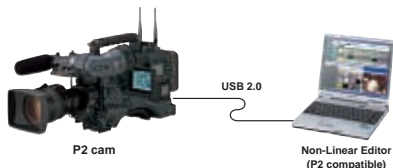
## Auto Tracking White Balance

White balance is automatically adjusted, in real time, as the lighting changes. This makes it easy to get natural color 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.



USB Connection with P2 cam and NLE

## Enhanced Functions and Specifications

- The electronic shutter has speeds of 1/100, 1/120, 1/250, 1/500, 1/1000, and 1/2000 sec, plus synchro-scan capability (1/60.3 to 1/249.7 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 color bar output.
- One touch of the mode check button displays the camera settings for easy confirmation.
- Built-in SMPTE 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-EC3P Extension Control Unit (ECU)
  - AJ-VF20WBP (2.0" wide) or AJ-VF15BP (1.5") viewfinder with rugged mount design





# P2 cam

*Full-Featured P2 Cam with High Sensitivity,  
Digital Super Gain and 24p/30p Shooting*



## AJ-SPX800

MEMORY CARD CAMERA-RECORDER (P2 cam)

## Progressive CCD for High Sensitivity and High Image Quality

The AJ-SPX800 features a 2/3" 520,000-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 65-dB S/N, the AJ-SPX800 meets 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 6P mode plus 20 dB with the +48-dB gain setting).

## Digital Super Gain (Cumulative Mode)

The AJ-SPX800 has a digital super gain function (in cumulative mode) that allows extra gain of +12 dB (at 15 fps) and +20 dB (at 6 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-SPX800 allows 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.

## 24p/30p Progressive Cine-Like Shooting

The frame rate can be switched between the normal 60i (60 fields/sec), 24p (24 frames/sec) and 30p (30 frames/sec)\*. In both 24p and 30p modes, 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-SPX800 ideal for producing documentaries, commercials, and music video clips or up-converting for HD.

\*Each records onto a card in the standard 60i TV format.

## 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 recording: You can insert a new memory card while recording.
- Loop recording: 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.

## 4-Channel Digital Audio (DVCPRO, DVCPRO 50 and 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.

## 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 color LCD monitor: You can view up to 12 thumbnails at once on the 3.5" color 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.

## Proxy Data Recording\*

Mount an AJ-YAX800G Proxy Encode Card, and the AJ-SPX800 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. The three levels of proxy video are available: 1.5Mbps, 768kbps or 196kbps. 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.

## 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.

## Supports GPS, SDI Output

- The AJ-GPS900G GPS unit lets the AJ-SPX800 record real-time position data onto a memory card. Conforms to UMID standards.
- Adding an optional AJ-YA902AG SDI output board enables SMPTE259M 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 with speeds of 1/100, 1/120, 1/250, 1/500, 1/1000, and 1/2000 sec, plus synchro-scan capability (1/60.3 to 1/249.7 sec)
- Auto tracking white balance
- 4-position optical filter
- Select from a variety of finder markers, or make your own
- A zebra pattern can be displayed for contrast, Auto White Balance, and onto color bar output
- Mode check button displays camera settings

## Options that Add Versatility

- Built-in SMPTE 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-EC3P Extension Control Unit (ECU)
- AJ-VF20WBP (2.0" wide) or AJ-VF15BP (1.5") viewfinder with rugged mount design



AJ-SPX800 Rear Connector Panel

Camera-Recorder Comparison	AJ-SPX800	AJ-SPC700
Recording Format	DVCPRO 50/DVCPRO/DV	DVCPRO 50/DVCPRO/DV
Power Consumption	24 W *1	17 W *1
CCD	2/3" x3CCD, 16x9	2/3" x3CCD, 16X9
Sensitivity	F13	F11
S/N	65dB	64dB
Shooting Mode	60i/30p/24p	60i
Optical Filters	4-position (ND+CC)	4-position (ND+CC)
A/D Process	14 bit	14 bit
Color Correction	12-axis matrix	12-axis matrix
Gamma	Video/News/Cine-like	Video/News
Digital Super Gain	√	—
X2 Digital Zoom	√	—
P2 card Slot	5 Slots	5 Slots
Option 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 )	√	—
Color LCD Monitor	√	√
Clip Thumbnail	√	√
Digital Audio	4CH	2CH *2
Stereo Mic	√	—
Slot-in Wireless Mic	√	√
Analog Composite Output	√	√
Analog Composite Input Recording	√	√
Audio Output	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)



## 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 — enough for on-air broadcasting or line recording.

\*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 each of the 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 control and 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

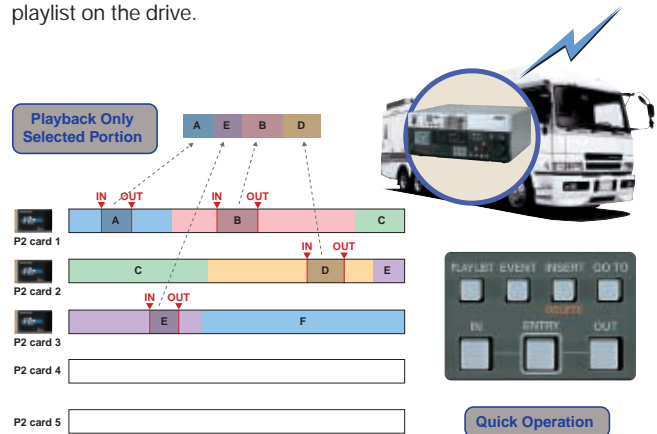
The AJ-SPD850 can read from and write to an SD Memory card mounted in the slot provided. You can use an SD Memory card for purposes such as backing up the playlist data.

## Voice Memo Playback

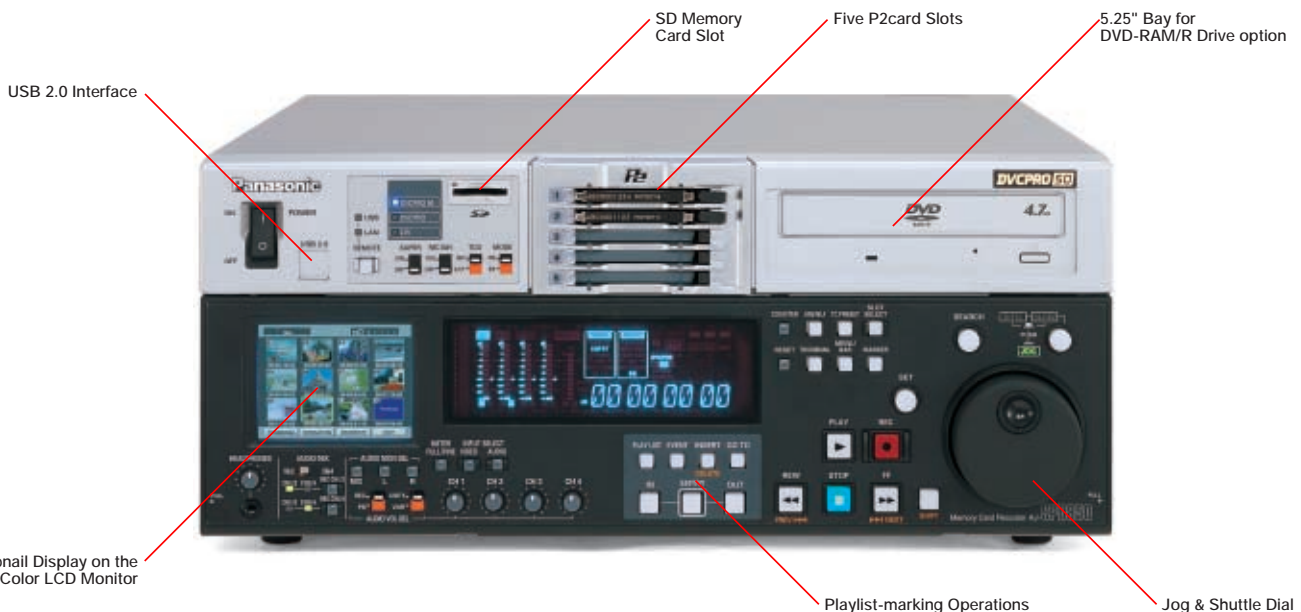
Use this function to play back voice memos added to clips recorded with a P2 cam, such as comments from the news gathering crew. The thumbnail display shows whether there are any voice memos or shot markers.

## 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.



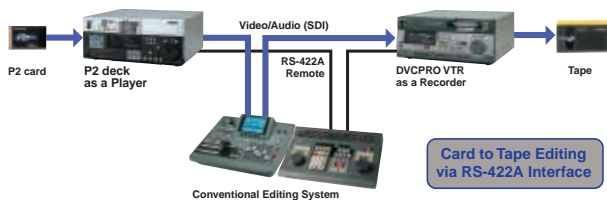
\*Audio split editing and transition settings are not supported. Also, note that the AJ-SPD850 is not equipped with a function for producing DVD videos.



## 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 for production and broadcasting.



## Optional DVD-RAM/DVD-R Drive

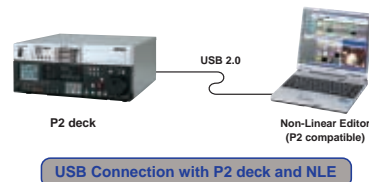
An optional AJ-DVD850G DVD-RAM/DVD-R drive can be built into the AJ-SPD850, making it easy to back up an entire P2 card or a batch of selected clips.

\*Software upgrade is needed.



## Equipped with PC 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



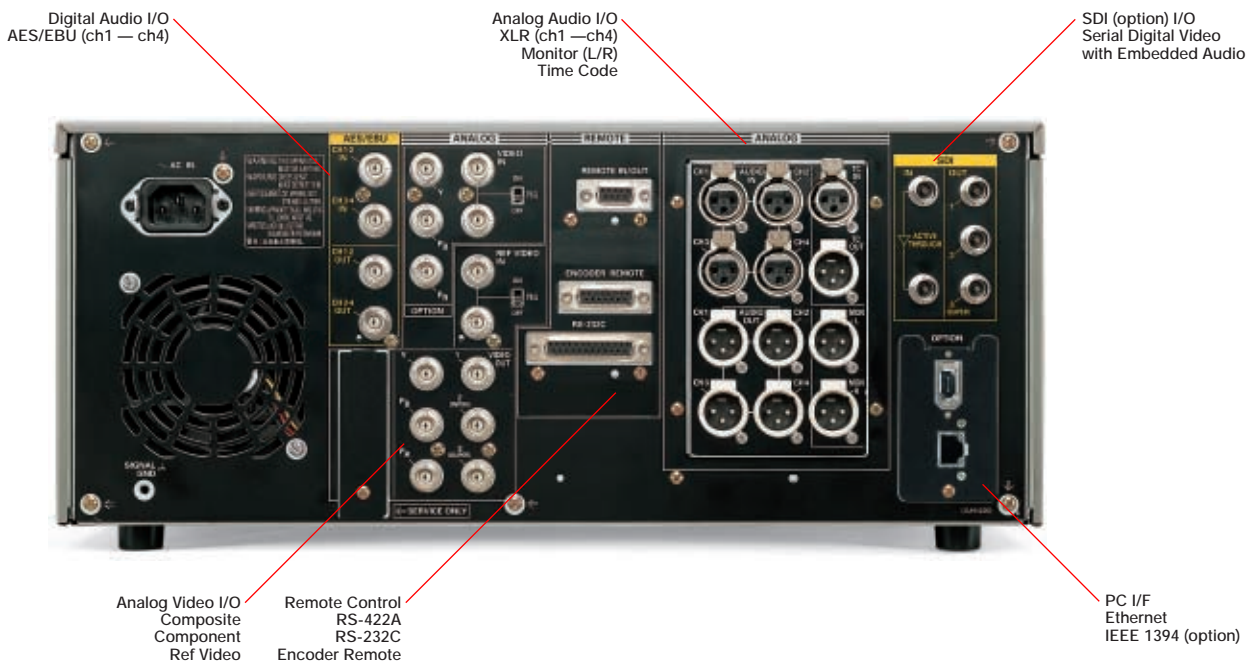
## Optional SDI/IEEE 1394 Compatibility

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

*Direct Connection to a PC*



**AJ-PCD10**  
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)

## Use the AJ-PCD10 Externally or Install It into Your PC

Install the AJ-PCD10 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 cable, you can use it as a stand-alone external drive. You can also use the AJ-PCD10 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 and Windows 2000.

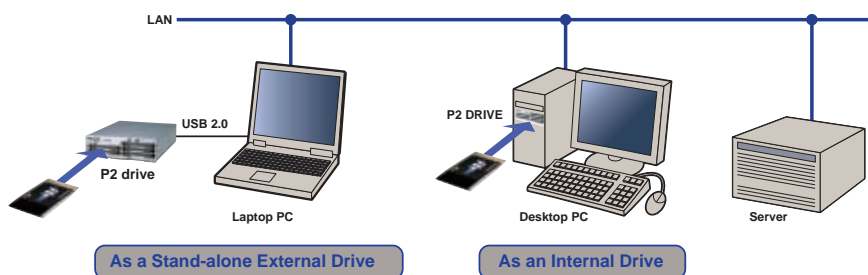


## Five P2 card Slots

The AJ-PCD10'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.

## High-Speed Data Transfer via USB 2.0

The USB 2.0 interface lets you transfer data at high speeds. You can edit directly onto P2 card with nonlinear editing software. You also get blazing fast results when uploading files to a server or copying onto a hard drive.



## 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 1.32 lbs (600 g), P2 store offers outstanding portability. It runs on DC power, so you can use batteries or an AC adaptor.

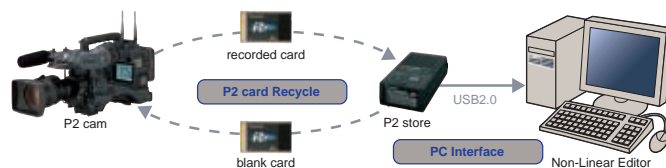
## Withstands Impact and Vibration

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.





# P2 handheld



## AG-HVX200

DVCPRO HD MEMORY CARD CAMERA-RECORDER (TENTATIVE SPECIFICATIONS)

### *Heralding a New Era in News Gathering and Production*

The new AG-HVX200 represents a milestone in the evolution of the P2 system. It's the world's first camera-recorder to feature an HD/SD multi-format platform for P2. Offering greater speed, mobility, and cost-performance than current camera-recorders, the AG-HVX200 promises to revolutionize news gathering and program production. The AG-HVX200 goes beyond the limits of conventional camera-recorders, providing a high-end solution to everything from news gathering to movie production.

- World's first 1080i/720p/480i multi-video format camera-recorder
- DVCPRO HD/DVCPRO 50/DVCPRO/DV multi-codec
- 24p/30p shooting in all 1080, 720, and 480 formats
- Equipped with two P2 card slots - world's first handheld camera-recorder with solid-state memory recording
- Hot swapping and pre-rec functions (see page 9)
- LCD monitor displays images from clip thumbnails
- World's first variable frame rate handheld camera-recorder; allows slow-motion and fast-motion recording
- News gamma and cine-like gamma curves
- Leica Dicomar wide-angle lens with cam-driven manual zoom
- Records up to four channels of non-compressed digital audio
- IEEE 1394 and USB2.0 PC interfaces
- Professional-use inputs/outputs, including XLR audio input (x2) and HD analog component output (D4)

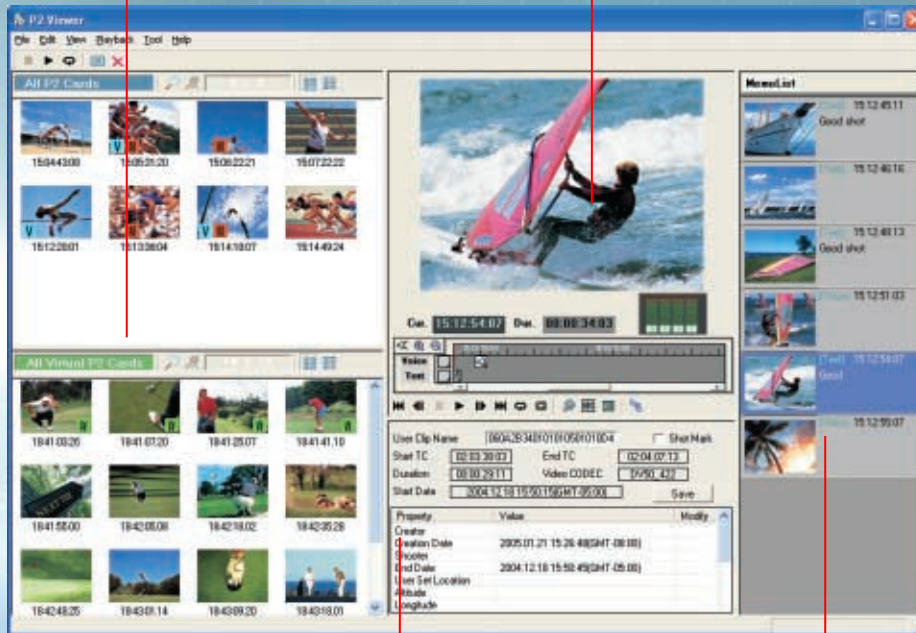
# P2 viewer

## 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.

## P2 Viewer 2.0

P2 APPLICATION SOFTWARE (A FREE DOWNLOAD FOR P2 USERS)

### *Easy Viewing and Copying of P2 Files*

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/>

\*System requirements: Microsoft(R) Windows 2000 SP4 or later, Windows XP Professional SP1 or later, or DirectX 9.0b or later; full-color (32-bit) display; sound card; and P2 driver (comes bundled with the P2 cam, P2 deck, and P2 drive)

#### Main Features

- Plays P2 clips (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

# 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.



#### Products Supporting P2

- Final Cut Pro

[www.apple.com](http://www.apple.com)

## Avid



#### Products Supporting P2

- NewsCutter® XP
- NewsCutter® Adrenaline™ FX
- Media Composer® Adrenaline™

[www.avid.com](http://www.avid.com)

## canopus



#### Products Supporting P2

- EDIUS HD
- EDIUS SD
- EDIUS SP
- EDIUS NX

[www.canopus.com](http://www.canopus.com)





Production Automation Archiving Networking



**Products Supporting P2**

- D<sup>3</sup>-Edit
- DP-Edit

[www.dayang.com.cn/](http://www.dayang.com.cn/)



A THOMSON BRAND



**Products Supporting P2**

- NewsEdit LT
- NewsEdit SC
- NewsEdit XT

[www.thomsongrassvalley.com](http://www.thomsongrassvalley.com)



**Products Supporting P2**

- Liquid Broadcast
- Liquid Chrome HD
- Liquid Blue

[www.pinnaclesys.com/broadcast](http://www.pinnaclesys.com/broadcast)



**Products Supporting P2**

- CleanEdit

[www.evs.tv/](http://www.evs.tv/)



Quantel



**Products Supporting P2**

- Nexio NewsFlash
- Nexio NewsFash FX
- Velocity-Q

[www2.leitch.com/](http://www2.leitch.com/)



**Products Supporting P2**

- sQ Edit Plus

[www.quantel.com](http://www.quantel.com)



**Products Supporting P2**

- FireStore
- DV Conversion Suite

[www.focusinfo.com](http://www.focusinfo.com)



**Products Supporting P2**

- FlipFactory
- MAP
- Launch

[www.telestream.net](http://www.telestream.net)



# P2 Optional Accessories

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



**AJ-VF20WBP**  
2" EVF 16:9/4:3 SWITCHABLE



**AJ-VF15BP**  
1.5" EVF FOR 4:3



FUJINON 2/3" LENS



CANON 2/3" LENS



**AJ-MC700**  
MICROPHONE KIT



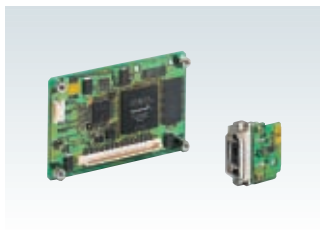
**AJ-MH800G**  
MICROPHONE HOLDER



**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



**AJ-B75**  
AC ADAPTOR



**DIONIC 90**  
ANTONBAUER BATTERY PACK



**TITAN 70**  
ANTONBAUER AC  
ADAPTOR/BATTERY CHARGER



**ULTRA LIGHT**  
ANTONBAUER ULTRA LIGHT



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

## P2 store (AJ-PCS060G) OPTIONS



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



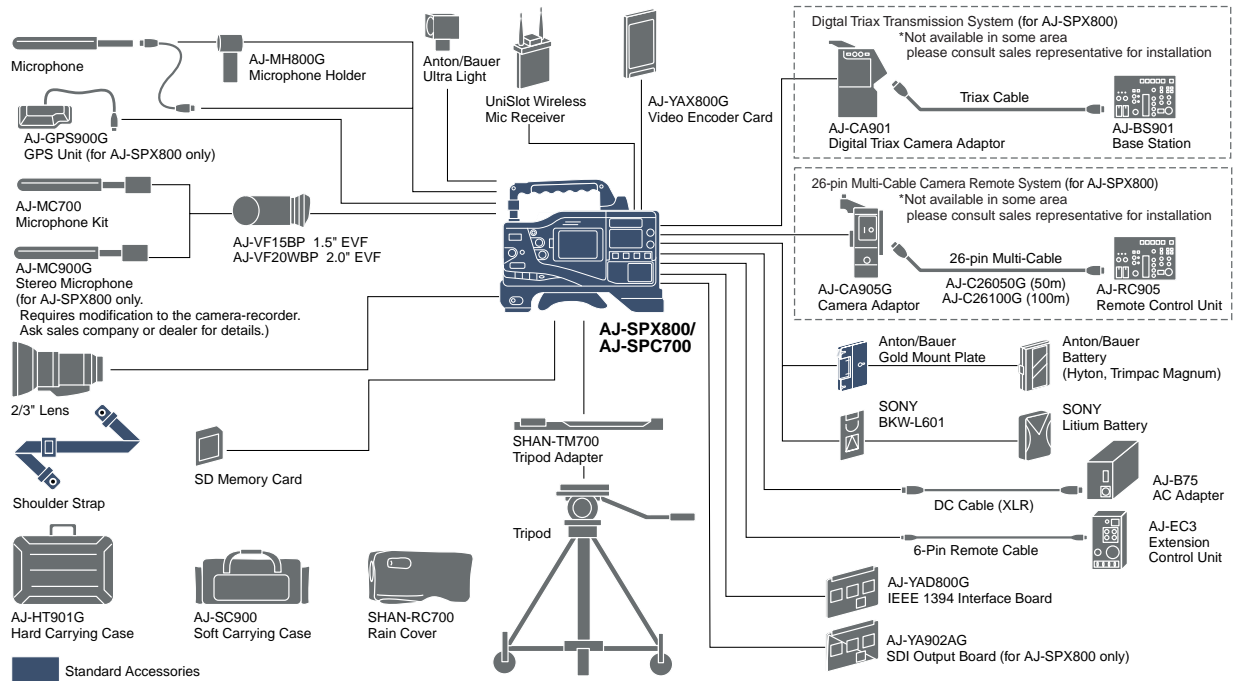
**SHAN-RC700**  
RAIN COVER  
\*Not available in some area



**AG-B15**  
AC ADAPTOR KIT



**CGR-D16** (1.6 Ah)  
**CGA-D54** (5.4 Ah)  
BATTERY PACK



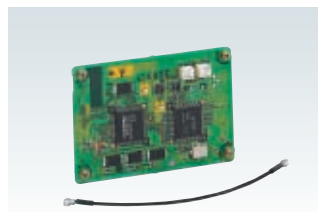
## P2 cam (FOR AJ-SPX800 ONLY) OPTIONS



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



**AJ-GPS900G**  
GPS UNIT  
(for AJ-SPX800 only)



**AJ-YA902AG**  
SDI OUTPUT BOARD  
(for AJ-SPX800 only)

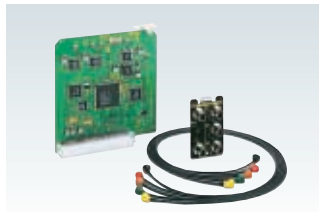
DIGITAL TRIAX  
TRANSMISSION SYSTEM  
**AJ-BS901**  
DIGITAL TRIAX BASE STATION  
**AJ-CA901**  
DIGITAL TRIAX CAMERA ADAPTOR

26-PIN MULTI-CABLE  
CAMERA REMOTE SYSTEM  
**AJ-CA905G**  
CAMERA ADAPTOR  
**AJ-RC905**  
REMOTE CONTROL UNIT

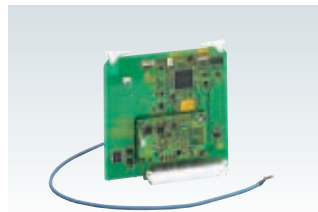
## P2 deck (AJ-SPD850) OPTIONS



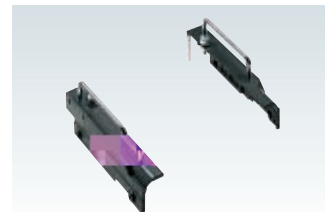
**AJ-DVD850G**  
DVD-RAM/DVD-R DRIVE



**AJ-YA755G**  
SDI BOARD



**AJ-YAD850G**  
IEEE 1394 INTERFACE BOARD



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

## HD/SD LCD MONITORS



**BT-LH900**  
8.4" LCD HD/SD MONITOR



**BT-LH1700W**  
17" LCD HD/SD MONITOR



# P2 Specifications

## AJ-P2C008HG/AJ-P2C004HG/AJ-P2C002SG 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 (1.6 oz)
Dimensions (W x H x D):	54 x 5 x 85.6 mm (2.13" x 0.2" x 3.37")

### AJ-P2C008HG Specifications

Recording Capacity:*1	Approx. 8GB
Reading/Writing Speed:*2	640 Mbps
Recording Playback Time:	DVCPRO HD: Approx. 8 min. (Video/4CH audio) DVCPRO 50: Approx. 16 min. (Video/4CH audio) DVCPRO/DV: Approx. 32 min. (Video/2CH audio)

### AJ-P2C004HG Specifications

Recording Capacity:*1	Approx. 4GB
Reading/Writing Speed:*2	640 Mbps
Recording Playback Time:	DVCPRO HD: Approx. 4 min. (Video/4CH audio) DVCPRO 50: Approx. 8 min. (Video/4CH audio) DVCPRO/DV: Approx. 16 min. (Video/2CH audio)

### AJ-P2C002SG Specifications

Recording Capacity:*1	Approx. 2GB
Reading/Writing Speed:*2	320 Mbps
Recording Playback Time:	DVCPRO 50: Approx. 4 min. (Video/4CH audio) DVCPRO/DV: Approx. 8 min. (Video/2CH audio)

\*1 Total card capacity includes space for data management such as system data, therefore, actual usable area is less than capacity indicated on the card.

\*2 This data transfer speed is theoretical value. An actual data transfer speed varies according to operating condition and devices.

\*AJ-P2C008HG will be available soon.

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

## 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 (NTSC: 520,000 pixels, PAL: 600,000 pixels) x 3
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, 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]	by single cards using 5 card slot AJ-P2C004HG Approx. 16 min. Approx. 80 min. AJ-P2C002SG Approx. 8 min. Approx. 40 min.
Recording/Playback Time*:	[50 Mbps video and 4CH audio]
[DVCPRO 50]	by single cards using 5 card slot AJ-P2C004HG Approx. 8 min. Approx. 40 min. AJ-P2C002SG Approx. 4 min. Approx. 20 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 O50)
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: -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:	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-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 (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 12-9/16") without handle and wireless option cover

### Camera Section

Image Sensor:	2/3" IT-CCD (NTSC: 520,000 pixels, PAL: 600,000 pixels) x 3
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:	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:	F13 at 2000 lux, 89.9% reflect
Minimum Illumination:	0.01 Lux at F1.4, +48dB and +20dB gain
Video S/N:	NTSC: better than 65dB, PAL: better than 63dB (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, 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-P2C002SG Approx. 8 min. Approx. 40 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-P2C002SG Approx. 4 min. Approx. 20 min.

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

NTSC Bandwidth: (AJ-SPX800P)	Y: 30 Hz to 5.75 MHz, +1.0/-3.0 dB (DVCPRO 50) Pb/Pr: 30 Hz to 2.75 MHz, +1.0/-3.0 dB (DVCPRO 50)
PAL Bandwidth: (AJ-SPX800E)	Y: 25 Hz to 5.75 MHz, +1.0/-3.0 dB (DVCPRO 50), 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)
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-EC3)

### Included Accessories

Shoulder strap, Front audio volume knob, Screw M2 x 6 mm (XYNZ+J6FZ)
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# 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 (32°F to 104°F) Storage: -20°C to 60°C (4°F to 140°F)
Permissible Humidity:	Operating: 5% to 85% (no condensation) Storage: 0% to 90% (no condensation)
Weight:	Approx. 0.65 kg (1.43 lbs)
Dimensions (W x H x D):	90 x 45 x 180.5 mm (3-9/16" x 1-13/16" x 7-1/8")

### Hard Disk Drive

HDD Capacity:	60 GB
PC Operating System:	Proper operation guaranteed Windows XP Professional (later SP2) Windows 2000 (later SP4)
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)

# P2 Specifications

## AJ-SPD850

### MEMORY CARD RECORDER (P2 deck)

#### General Specification

Power Source:	AC 100 V to 240 V $\pm$ 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 (30.8 lbs)
Dimensions (W x H x D):	424 x 175.2 x 430 mm (16-3/4" x 6-15/16" x 16-15/16")
Recording Video Signal:	525i/60, 625i/50 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] AJ-P2C004HG by single cards using 5 card slot Approx. 16 min. Approx. 80 min. AJ-P2C002SG Approx. 8 min. Approx. 40 min.
Recording/Playback Time*: [DVCPRO 50]	[50 Mbps video and 4CH audio] AJ-P2C004HG by single cards using 5 card slot Approx. 8 min. Approx. 40 min. AJ-P2C002SG Approx. 4 min. Approx. 20 min.
Digital Slow:	-1 to +1 times normal speed (DVCPRO 50/DVCPRO/DV)

#### Video Specification (Digital Video)

Sampling Frequency:	Y: 13.5 MHz, Pb/Pr: 6.75 MHz (DVCPRO 50)
Quantizing:	8 bits
Video Compression Format:	DV-Based Compression (SMPTTE314M)
Video Compression Ratio:	1/3.3 (DVCPRO 50), 1/5 (DVCPRO)
Error Correction:	Reed-Solomon product code
Video Bit Rate:	50 Mbps (DVCPRO 50), 25 Mbps (DVCPRO/DV)

#### \* Component IN/Component OUT

Video Bandwidth (525i):	Y: 30 Hz to 5.75 MHz (-2.0 dB) Pb/Pr: 30 Hz to 2.75 MHz (-2.0 dB)
Video Bandwidth (625i):	Y: 25 Hz to 5.75 MHz (-2.0 dB) Pb/Pr: 25 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

#### \* Composite IN/Composite OUT

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

#### Video Input Signal

Analog Component Input:	BNC x 3 (Y,Pb,Pr) Y: 1.0 Vp-p, 75 $\Omega$ , Pb/Pr (525i): 0.486/0.7 Vp-p switchable, 75 $\Omega$ (75% color bar, 7.5% setup) Pb/Pr (625i): 0.7 Vp-p, 75 $\Omega$ (100% color bar)
Analog Composite Input:	BNC x 2 (loop-through), 75 $\Omega$ on/off, Video: 1.0 Vp-p (75 $\Omega$ )
Reference Input:	Analog composite, BNC x 2 (loop-through), 75 $\Omega$ on/off
SDI Input (option):	BNC x 2 (active-through), serial digital component SMPTTE259M-C (NTSC), ITU-R BT.656-4 (PAL) standard

#### Video Output Signal

Analog Component Output:	BNC x 3 (Y,Pb,Pr) Y: 1.0 Vp-p, 75 $\Omega$ , Pb/Pr (525i): 0.486/0.7 Vp-p switchable, 75 $\Omega$ (75% color bar, 7.5% setup) Pb/Pr (625i): 0.7 Vp-p, 75 $\Omega$ (100% color bar)
Analog Composite Output:	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) SMPTTE259M-C (NTSC), ITU-R BT.656-4 (PAL) standard

#### Video Output Adjustment Range

Gain:	$\pm$ 3 dB
Chroma Gain:	$\pm$ 3 dB
Hue (Chroma Phase):	$\pm$ 30°
Set-up Level (Black Level):	$\pm$ 14 IRE ( $\pm$ 100 mV)
Sync Phase:	$\pm$ 15 $\mu$ sec
SC Phase:	$\pm$ 180°

#### Audio Specification (Digital Audio)

Sampling Frequency:	48 kHz (sync video)
Quantizing:	16 bits
Frequency Response:	20 Hz to 20 kHz, $\pm$ 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:	20 dB (NTSC), 18 dB (PAL)
De-emphasis:	T1=50 $\mu$ sec, T2=15 $\mu$ sec (on/off auto)

#### Audio Input Signal

Analog Input:	XLR x 4 (CH1/CH2/CH3/CH4), 600 $\Omega$ /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), 75 $\Omega$ SMPTTE259M-C/272M-A standard (NTSC) ITU-R BT.656-4 standard (PAL)

#### Audio Output Signal

Analog 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 $\pm$ 0.2 Vp-p 75 $\Omega$
Serial Digital Output:	BNC x 3, 75 $\Omega$ SMPTTE259M-C/272M-A standard (NTSC) ITU-R BT.656-4 standard (PAL)
Monitor Output:	XLR x 2, low-impedance, +4/0/-20 dBu switchable
Headphones:	Stereo mini jack, 8 $\Omega$ , variable level

#### Other Input and Output

Time Code Input:	XLR x 1, 0.5 to 8.0 Vp-p, 10 k $\Omega$
Time Code Output:	XLR x 1, low-impedance, 2.0 $\pm$ 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-PCD10

### MEMORY CARD DRIVE (P2 drive)

#### General Specification

Power Source:	AC 100 V to 240 V (0.8 A to 0.4 A), 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 mm (5-7/8" x 1-11/16" x 7-7/8") excluding protruding parts

#### PC System Requirement

Operating System:	Proper operation guaranteed Windows XP Professional (later SP1) Windows 2000 (later SP4)
Main Memory:	512 MB or greater recommended
Interface:	USB Ver. 2.0 compliant
Card Slot	
PC Card Slot:	PC Card (Type II) x 5 slot (CardBus compliant)



# Panasonic

PANASONIC BROADCAST & TELEVISION SYSTEMS COMPANY  
UNIT OF PANASONIC CORPORATION OF NORTH AMERICA  
[www.panasonic.com/broadcast](http://www.panasonic.com/broadcast)

**Executive Office:** One Panasonic Way, 4E-7, Secaucus, NJ 07094  
(201) 348-5300  
**EASTERN ZONE:** One Panasonic Way 4E-7, Secaucus, NJ 07094  
(including Southeast) (201) 348-7196  
**WESTERN ZONE:** 3330 Cahuenga Blvd W., Los Angeles, CA 90068  
(including Southwest) (323) 436-3608  
**Government Sales:** (201) 348-5300 (Eastern U.S.),  
(323) 436-3608 (Western U.S.)

**Panasonic Canada Inc.**  
5770 Ambler Drive, Mississauga, Ontario L4W 2T3 (905) 624-5010  
[www.panasonic.ca](http://www.panasonic.ca) e-mail: [broadcast@panasonic.ca](mailto:broadcast@panasonic.ca)

**Panasonic Puerto Rico, Inc.**  
San Gabriel Industrial Park, 65th Infantry Ave., Km. 9.5, Carolina,  
Puerto Rico 00630 (787) 750-4300

**Matsushita Electric Industrial Co., Ltd.**  
**Systems Business Group**  
2-15 Matsuba-cho, Kadoma, Osaka, 571-8503 Japan  
Tel. 81-6-6905-4650 Fax. 81-6-6908-5969  
<https://www.pavc.panasonic.co.jp/pro-av/>

**Panasonic Systems Sales Taiwan Co., Ltd.**  
5F, 2 Sec. 5 Hsin I Road Taipei, Taiwan  
Tel. 886-2-2725-9100 Fax. 886-2-2725-9291

**Panasonic Korea Ltd.**  
Seohyun B/D, 1718-9, Seocho-Dong, Seocho-Gu,  
Seoul, Korea  
Tel. 82-2-2106-6641 FAX. 82-2-533-8766

**Broadcast and Communication Company of Asia, Inc.**  
R-1902A Tektite Tower II Exchange Road Ortigas Center  
Posig City, Philippines  
Tel. 63-2-633-6162 Fax. 63-2-631-1861

**Panasonic de Mexico, S.A. de C.V.**  
Tel. 52-55-5488-1000 Fax. 52-55-5575-6763

**Panasonic Latin America S.A.**  
(Caribe, Centro America, Venezuela, Colombia, Ecuador, Bolivia,  
Uruguay, Paraguay, Chile)  
Tel. 507-229-2955 Fax. 507-229-2536

**Panasonic del Peru S.A.**  
Tel. 51-1-614-0000 Fax. 51-1-452-9415

**Panasonic do Brasil Ltda**  
Tel. 55-11-3889-4035 Fax. 55-11-3889-4004

