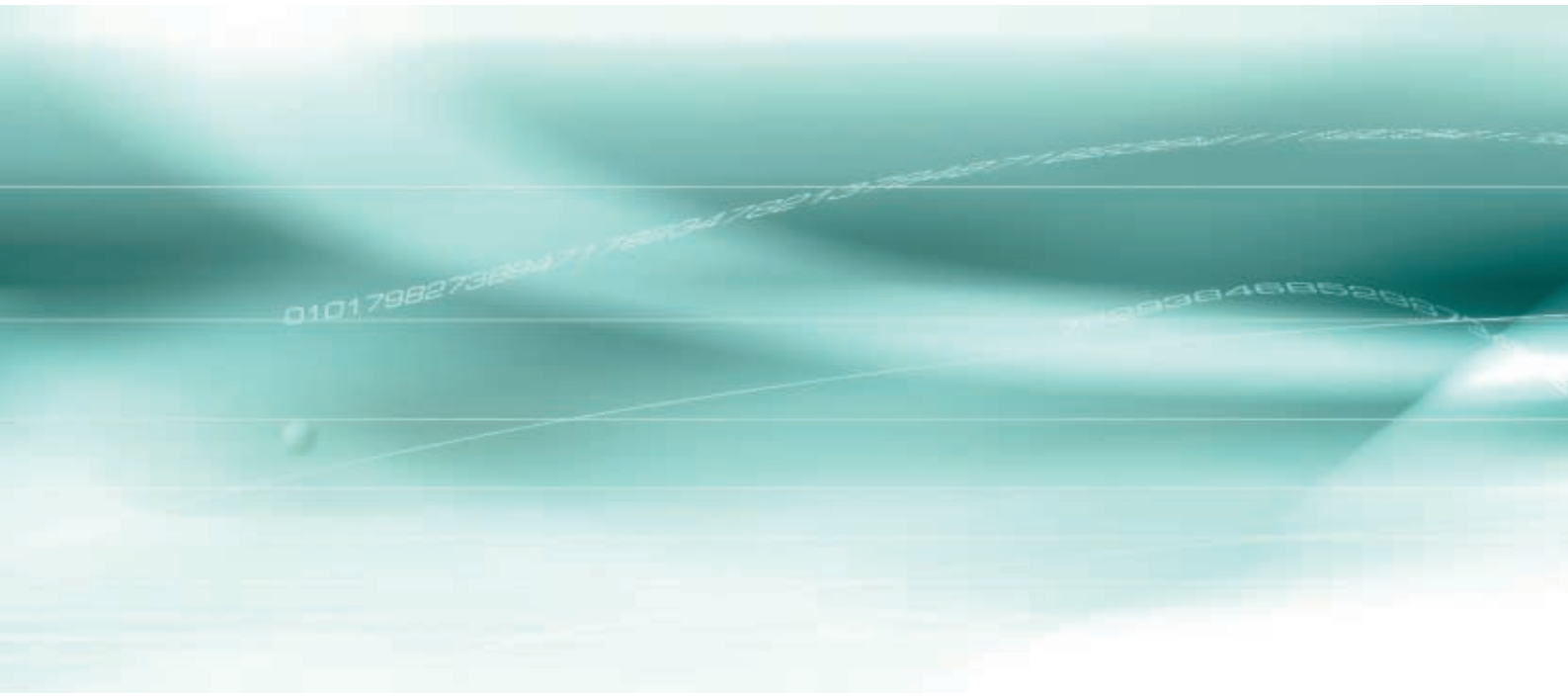


Panasonic
ideas for life




DVCPRO P2 SERIES

ING — A REVOLUTION, IT NEWS GATHERING



Get Ready to Go Beyond



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

At the heart of the P2 Series is Panasonic's new plug-in PC card type media. Called P2 ("Professional Plug-in"), these solid-state cards are neither tape nor disc and require no mechanism. P2 cards fit neatly in the slots of P2 Series equipment and record DVCPRO50/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 deck 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

A Leap Beyond in

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).



News Gathering







Beyond Conventional ENG: The Superior Mobility of IT-based News Gathering (ING)

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 up to 100,000 times, 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

Unlike a VTR, the P2 camera-recorder has no mechanism. That means it doesn't take time to unload/upload the cards, and it provides reliable recording even when subjected to vibration and shock. This, plus the P2 cam's rugged and well-balanced body gives you outstanding mobility. The P2 cam also offers unique functions that are only possible with the memory card. It has five P2 card slots and allows seamless, continuous recording over all five. And its hot swap function lets you replace any card except the one being recorded on the fly, giving you outstanding data capacity and non-stop recoding. Proxy data recording and wireless LAN functions let you transfer low-resolution proxy AV streams with wireless ease. The P2 cam's built-in Color LCD Monitor displays thumbnails of recorded clips and allows seamless playback. The P2 cam also offers convenient features such as voice memo capability and shot markers.

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^{*1} 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^{**2} 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 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.

*1: The P2 card driver (bundled with all P2 cams, decks and drives) must be installed.

The P2 card driver operates under Windows XP and Windows 2000.

**2: Future compatibility (upgraded for a charge)

Random Access Playback and Nonlinear Editing: The P2 deck

The P2 Series provides super-fast news transmission from OB 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 sent instantly for on-air playback. The new 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.

*The P2 card driver (bundled with all P2 cams, decks and drives) must be installed. The P2 card driver operates under Windows XP and Windows 2000.

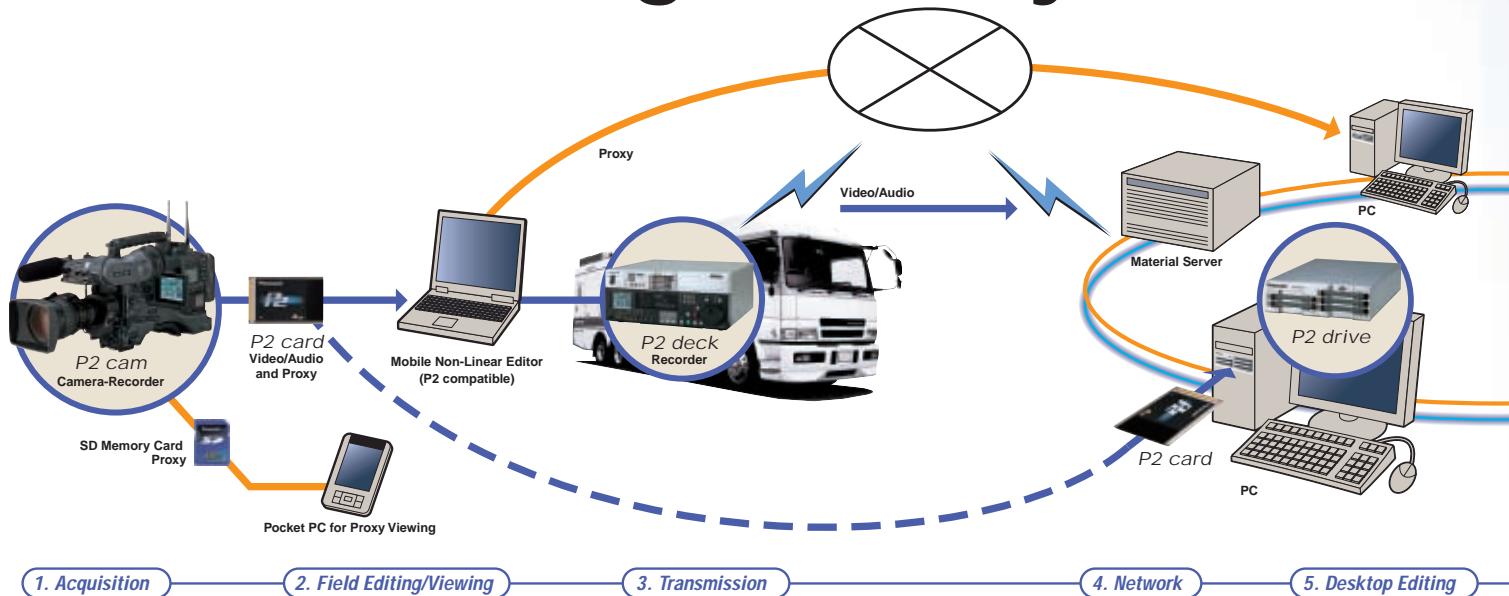
More Flexibility — Combined VTR Use and Data Archive System

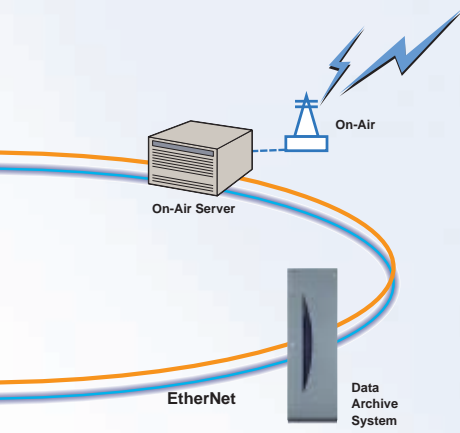
Panasonic's ING concept — IT-based news gathering — is not a closed system. The P2 decks are equipped with the same interfaces as today's DVCPRO VTRs, so they can link seamlessly into conventional systems for tape editing and on-air transmission.

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

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.

Beyond Conventional Workflows — The Next Generation in Nonlinear and Networking News Systems





P2 card

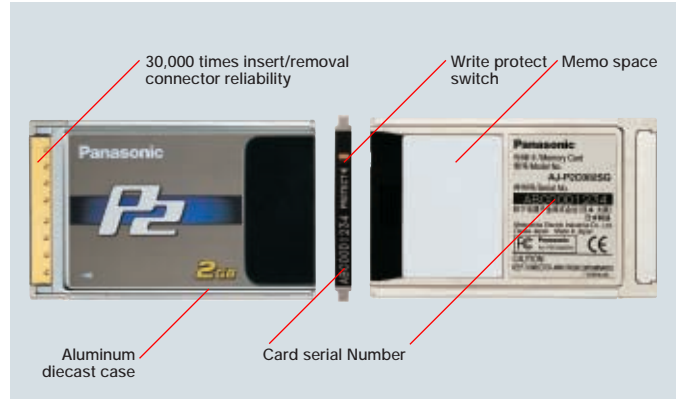
The super-slim card that's transforming news gathering



AJ-P2C004H
H-Series 4GB Memory card



AJ-P2C002S
S-Series 2GB Memory card



New 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 (bundled with all P2 cams, decks and drives) must be installed. The P2 card driver operates under Windows XP and Windows 2000.

Incorporates the Large Capacity and High Speed of SD Memory cards

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.

The AJ-P2C004H P2 cards, for example, have a 4-GB*² capacity. They can hold up to 16 minutes of DVCPRO or DV data (with 2 channels of 48 kHz/16-bit audio). As the SD Memory card's capacity continues to grow, so will the P2 card's recording time.

The P2 far surpasses all other AV media in transfer speed, too. The AJ-P2C004H, for example, transfers data at up to 640 Mbps*³, which can greatly speed up production processes.

P2 card Recording Time Reference

Category	Model Number	Capacity Indication* ²	Approx. Recording Time		Data Transfer Speed* ³ (Max.)
			DVCPRO/DV (Audio 2ch)	DVCPRO50 (Audio 4ch)	
2GB P2 card	AJ-P2C002SG	2 GB	8 min.	4 min.	320 Mbps
4GB P2 card	AJ-P2C004HG	4 GB	16 min.	8 min.	640 Mbps

*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.

Reliable in the Face of Shock and Temperature Change

The super-slim P2 card slips easily into a shirt pocket and 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).

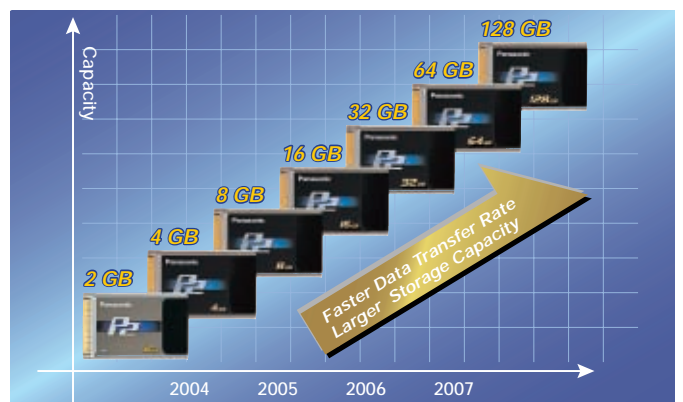
In durability too, the P2 card goes well beyond ordinary PC cards. The connector portion, for example, is specially designed for professional use and has passed insertion/removal tests of more than 30,000 cycles. A card can be rewritten more than 100,000 times, for reliable, repeated use. Cards are also equipped with a write-protect switch that prevents accidental erasure.

SD/HD Migration Inherited from DVCPRO

You can record DVCPRO50, DVCPRO and DV data onto P2 cards. And since P2 cards can be used with existing DVCPRO50, DVCPRO and DV equipment, you can transition step-by-step from tape to cards.

Panasonic offers the P2 H-Series for future high-definition applications. With the DVCPRO HD P2 cam and HD P2 deck now under development, and with efforts under way to introduce higher-capacity SD Memory cards, we expect to see P2 H-Series cards that offer HD recording. The P2 Series goes hand-in-hand with the SD/HD migration path that distinguishes the DVCPRO family, and with the IT-based news gathering that it helps make possible.

P2 card Roadmap



P2 cam

*2/3" 3CCD Camera-Recorder:
The P2 Solution to News Gathering in Rough Environment*



AJ-SPX800

MEMORY CARD CAMERA-RECORDER (P2 cam)

P2 card Breaks New Ground in Mobility and Reliability

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

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 fleeting moments that other systems miss. You won't worry about missing the shot.

Next-Generation Recording Functions

The AJ-SPX800 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 fixed area.
- **Pre-rec:** While in standby mode, you can continuously store, and subsequently record, up to 15 seconds of images and sounds (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.

Wide 2/3" CCD for High Sensitivity and High Image Quality

The AJ-SPX800 features a 2/3" 520,000-pixel/NTSC (600,000-pixel/PAL) 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/NTSC (63-dB/PAL) 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 intact. 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.

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.

24p*/30p Progressive Mode (NTSC)/ 25P Progressive Mode (PAL)

The frame rate can be switched between the normal 60i (60 fields/sec), 24p*1 (24 frames/sec) and 30p (30 frames/sec)*2. In both 24p and 30p modes, a complete progressive scan image is produced for each frame. You'll find the AJ-SPX800 suitable for a host of applications, from production of documentaries, commercials, and music video clips to up-converting for HD.

*1: Will be upgradable soon (option).

*2: Each records onto card in the standard 60i TV format. In PAL model, the frame rate can be switched between 50i (50 field/sec) and 25p (25 frames/sec), to be recorded onto card in the standard 50i TV format.

DVCPRO/DVCPRO50/DV Switchable

The versatile P2 cam can record in DVCPRO, high-quality 4:2:2 digital component DVCPRO50, and DV. A single 4GB* P2 card holds up to 16 minutes of DVCPRO/DV data or 8 minutes of DVCPRO50 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 capacity indicated on the card.

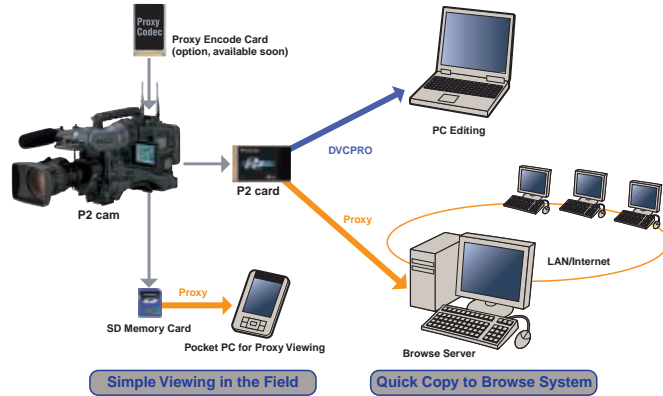
Four-Channel Digital Audio in All Formats

In all formats - DVCPRO50, DVCPRO, and DV - the AJ-SPX800 can record full 48-kHz/16-bit digital audio on each of the four channels. You can freely select the audio source for each channel, choosing from mic, line, wireless receiver, and other sources.



Proxy Data Recording*

Mount an Proxy Encode Card (optional, available soon) into the option card slot or one of the P2 card slots, 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. 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.

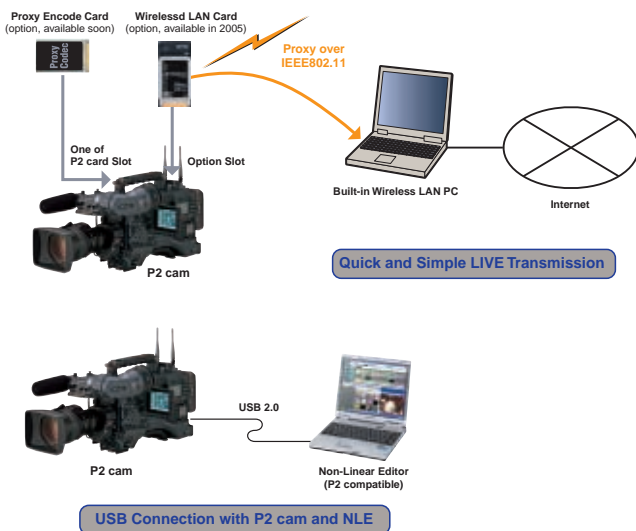


* Proxy data is AV data with low-resolution MPEG4 video and audio containing time code, metadata, and other control information.

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

PC Connection via Wireless LAN*1 or USB 2.0*2

Mount a Wireless LAN Card (optional, available in 2005) into the option card slot, and you can connect the P2 cam directly to a LAN. This is an extremely simple solution for live, on-air broadcast of proxy data.*3 The AJ-SPX800 comes equipped with USB 2.0 interfaces*2 that let you use the P2 card slot as an external drive for a PC. This gives you the flexibility to perform in-the-field nonlinear editing or network data transfers.



*1: Will be available in 2005..

*2: Future compatibility (upgraded for a charge)

*3: A proxy encode card or wireless LAN card can be mounted into the option card slot. If you want to have both cards mounted at the same time, use one of the P2 card slots for the proxy encode card. This leaves four P2 card slots for recording use.

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.

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 while recording or after recording, such as to support post-recording processing.

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, like when following a subject walking from indoors to outdoors.





Option Slot



Rear Connector Panel

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).[NTSC model]
[In PAL model,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.
- 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-GPS900G GPS unit: Lets the AJ-SPX800 record real-time position data (latitude, longitude, and altitude) onto the memory card. Conforms to UMID standards.
- SDI output and IEEE 1394 digital interfaces (optional)
- AJ-EC3 Extension Control Unit (ECU)



P2 deck

*Ideal for use in Existing OB 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.

DVCPRO50/DVCPRO/DV Switchable

The AJ-SPD850 records in 25Mbps DVCPRO; high-quality, 4:2:2, 50Mbps DVCPRO50; and DV. A single 4GB* P2 card holds up to 16 minutes of DVCPRO/DV data or 8 minutes of DVCPRO50 data. Using all five slots, you get about 80 minutes of continuous record or play in DVCPRO/DV, or 40 minutes in DVCPRO50 — 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 - DVCPRO50, 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

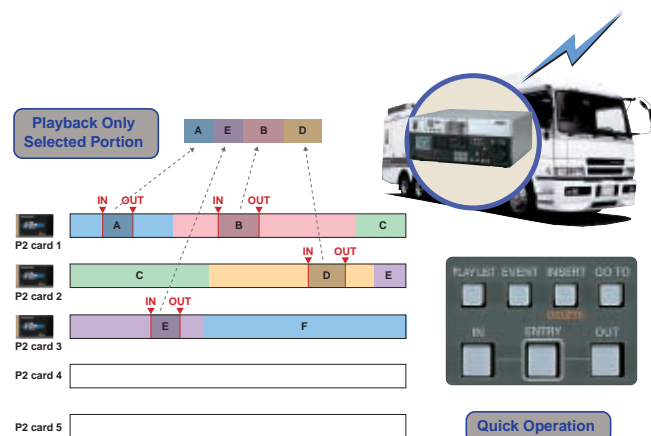
The AJ-SPD850 can read from and write to an SD Memory card mounted in the slot provided. You can use an SD Memory card for purposes such as backing up the playlist data.

Voice Memo Playback

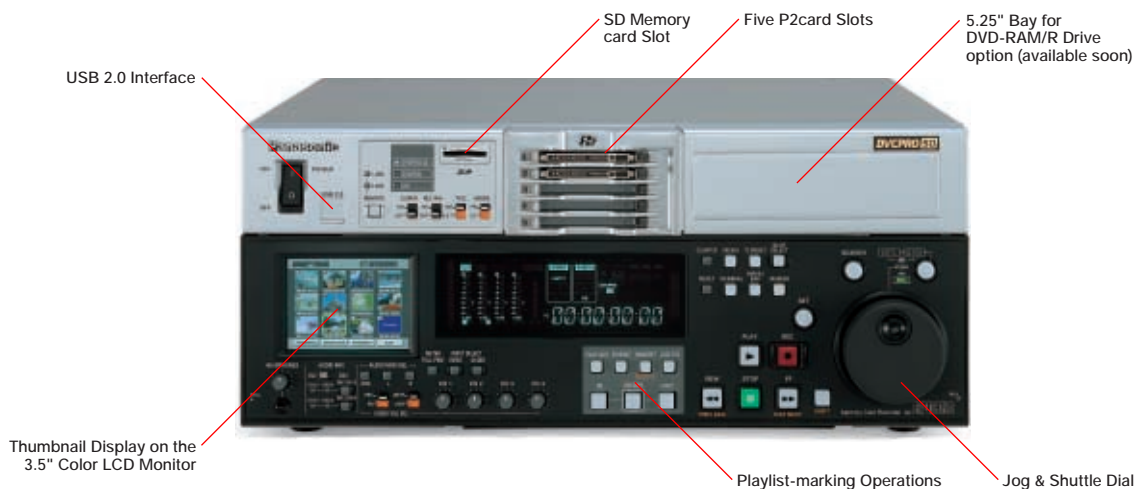
Use this function to play back voice memos added to clips recorded with a P2 cam, such as comments from the news gathering crew. The thumbnail display shows whether there are any voice memos or shot markers.

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 (available soon), the playlist makes it easy to back up your P2 data.



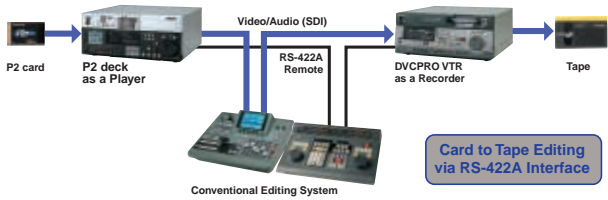
*Audio split editing and transition settings are not supported. Also, note that the AJ-SPD850 is not equipped with a function for producing DVD videos.



RS-422A and Other Familiar Interfaces

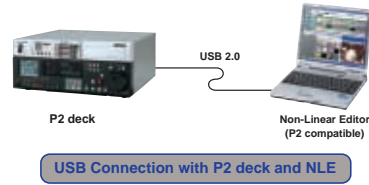
The AJ-SPD850 comes equipped with many of the same interfaces found on DVCPRO VTRs — RS-422A, component/composite video, analog audio/digital audio, REF video and more. Combine the AJ-SPD850 with an editing controller, and you can use it as the player in a linear editing system.

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.



Equipped with PC Interfaces

- **USB 2.0** (future compatibility, upgraded for a charge): 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** (need software upgrade): Will let you connect to a network to send data



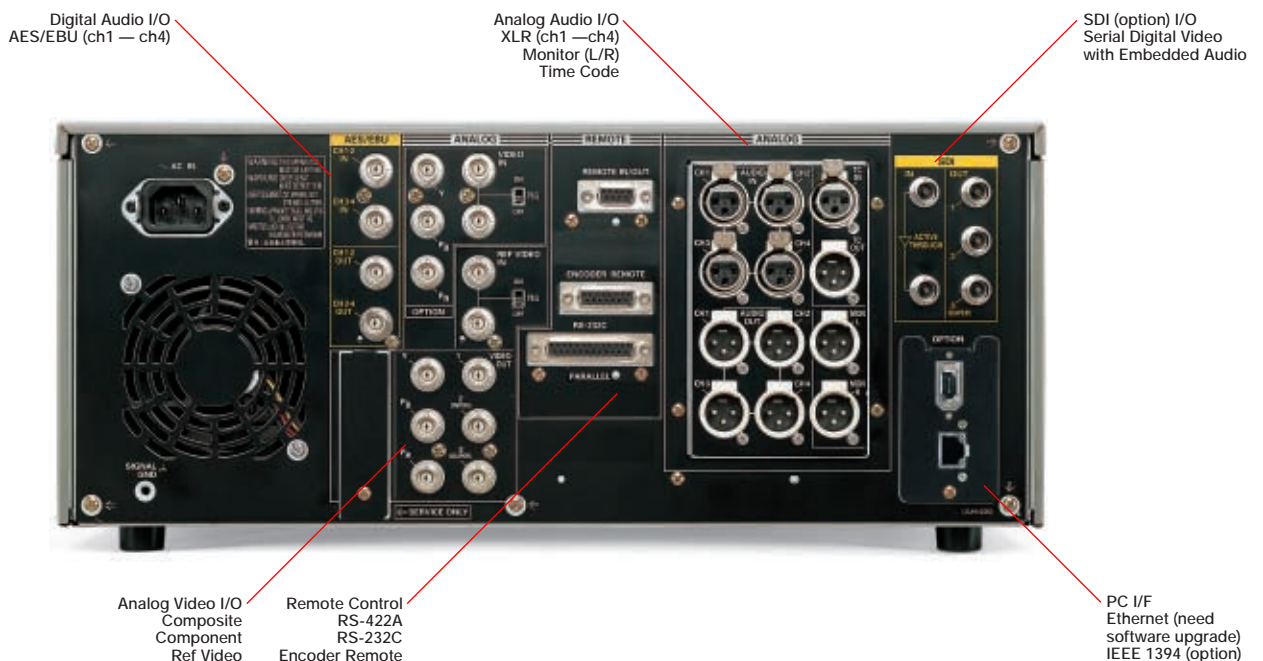
Optional SDI/IEEE 1394 Compatibility

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)

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.

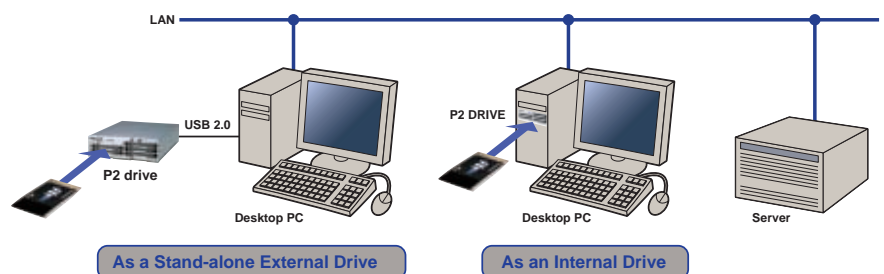
*A P2 card driver (bundled with the P2 cam, deck and drive) must be installed in the PC. The P2 card driver operates under Windows XP and Windows 2000.

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.



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

- News Edit
- Profile M-Series
- GVG News System

www.thomsongrassvalley.com



Quantel

Products Supporting P2

- generationQ Editing Software
- QView, QCut and QEdit Pro
- sQServer

www.quantel.com



Products Supporting P2

- NewsCutter® Adrenaline™ FX
- NewsCutter® XP Mobile
- Avid Unity™ for News

www.avid.com



Products Supporting P2

- Liquid Editing System
- MediaStream Server
- Vortex News System
- Palladium Storage System

www.pinnaclesys.com/cn/



DAYANG

Production Automation Archiving Networking

Products Supporting P2

- X-edit

www.dayang.com.cn/



Products Supporting P2

- Nexio NX4000TXS Transmission Server
- Nexio NX4000ITS Integrated Storage Server
- Nexio NewsFlash Editing Systems
- Nexio NewsFlash FX Editing Systems

www2.leitch.com/



BROADCAST EQUIPMENT

Products Supporting P2

- CleanEdit

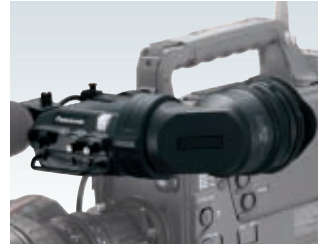
www.evs.tv/

P2 Optional Accessories

AJ-SPX800 (P2 cam) Options



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



AJ-VF15B
1.5" EVF FOR 4:3



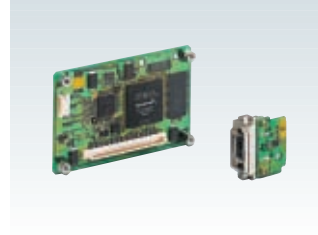
AJ-GPS900G
GPS UNIT



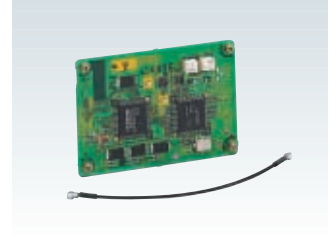
FUJINON 2/3" LENS



CANON 2/3" LENS



AJ-YAD800G
IEEE 1394 INTERFACE BOARD
* Available soon. Requires upgrade to the camera-recorder software.



AJ-YA902AG
SDI OUTPUT BOARD



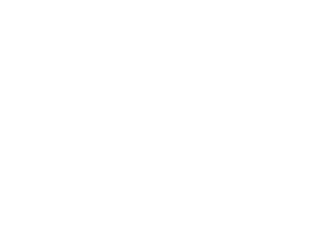
SD MEMORY CARD



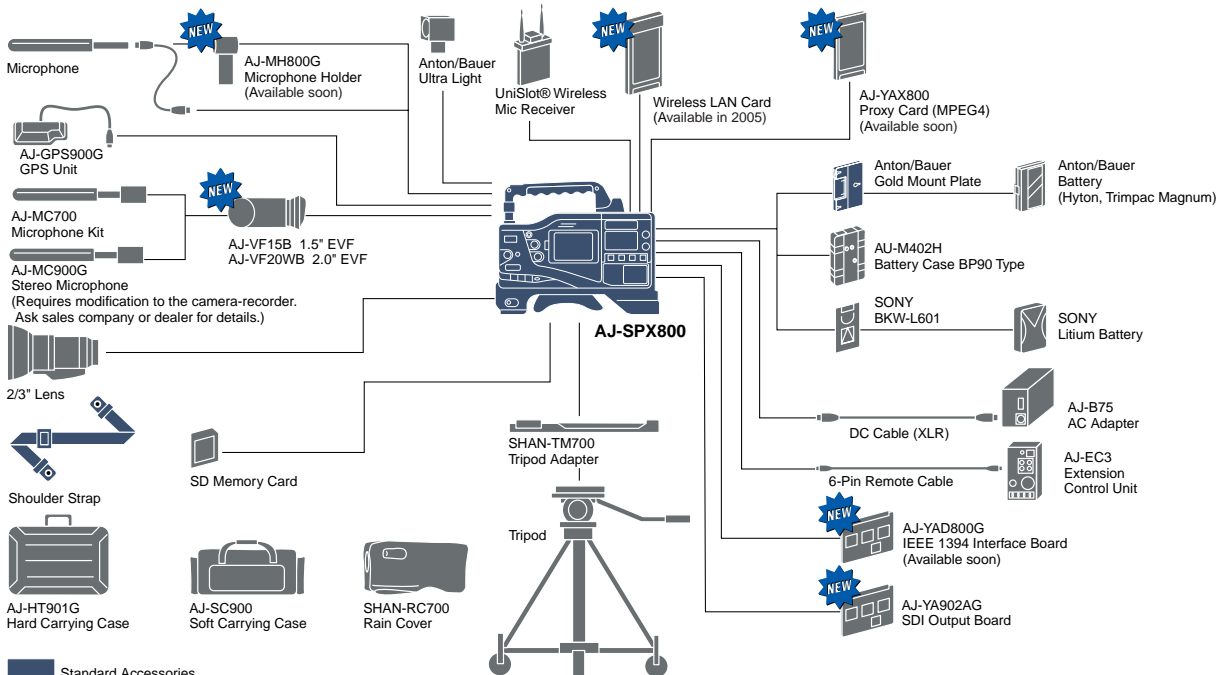
AJ-MC700
MICROPHONE KIT



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



AJ-MH800G
MICROPHONE HOLDER
* Available soon





AJ-M402H
BP90 TYPE BATTERY CASE



AJ-B75
AC ADAPTOR



AJ-EC3
EXTENSION CONTROL UNIT



SHAN-TM700
TRIPOD ADAPTR



DIONIC 90
ANTONBAUER BATTERY PACK



TITAN 70
ANTONBAUER AC
ADAPTOR/BATTERY CHARGER



ULTRA LIGHT
ANTONBAUER ULTRA LIGHT



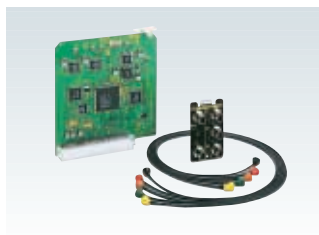
AJ-SC900
SOFT CARRYING CASE
*Not available in some area



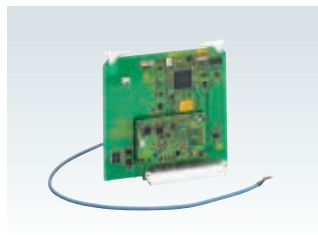
AJ-HT901G
HARD CARRYING CASE
*Not available in some area



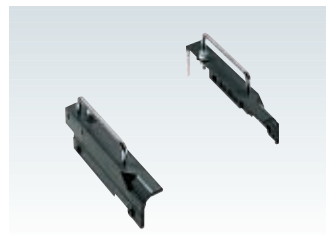
SHAN-RC700
RAIN COVER
*Not available in some area



AJ-YA755G
SDI BOARD



AJ-YAD850G
IEEE 1394 INTERFACE BOARD



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



BT-LH900
8.4" LCD HD/SD MONITOR



BT-LH1500
15" LCD HD/SD MONITOR



BT-LH1800
18" LCD HD/SD MONITOR

P2 Specifications

AJ-P2C004H/AJ-P2C002S 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-P2C004H Specifications

Recording Capacity:*1	Approx. 2GB
Reading/Writing Speed:*2	640 Mbps
Recording Playback Time**:	DVCPRO50: Approx. 8 min. (Video/4CH audio) DVCPRO/DV: Approx. 16 min. (Video/2CH audio)

AJ-P2C002S Specifications

Recording Capacity:*1	Approx. 2GB
Reading/Writing Speed:*2	320 Mbps
Recording Playback Time:	DVCPRO50: 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-P2C004H will be available soon.

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:	DVCPRO50/DVCPRO/DV switchable
Audio Recording Format:	48kHz/16bits, 4CH (DVCPRO50), 2CH/4CH switchable (DVCPRO/DV)
Recording Media:	P2 card
Recording/Playback Time*:	[25 Mbps video and 2CH audio]
[DVCPRO/DV]	by single cards using 5 card slot
AJ-P2C004H	Approx. 16 min. Approx. 80 min.
AJ-P2C002S	Approx. 8 min. Approx. 40 min.
Recording/Playback Time*:	[50 Mbps video and 4CH audio]
[DVCPRO50]	by single cards using 5 card slot
AJ-P2C004H	Approx. 8 min. Approx. 40 min.
AJ-P2C002S	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 (DVCPRO50)
(AJ-SPX800P)	Pb/Pr: 30 Hz to 2.75 MHz, +1.0/-3.0 dB (DVCPRO50)
PAL Bandwidth:	Y: 25 Hz to 5.75 MHz, +1.0/-3.0 dB (DVCPRO50),
(AJ-SPX800E)	Pb/Pr: 25 Hz to 2.75 MHz, +1.0/-3.0 dB (DVCPRO50)
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)

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:	DVCPRO50/DVCPRO/DV switchable		
Audio Recording Format:	48kHz/16bits, 4CH (DVCPRO50), 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-P2C004H	Approx. 16 min.	Approx. 80 min.
	AJ-P2C002S	Approx. 8 min.	Approx. 40 min.
Recording/Playback Time*: [DVCPRO50]	[50 Mbps video and 4CH audio]	by single cards	using 5 card slot
	AJ-P2C004H	Approx. 8 min.	Approx. 40 min.
	AJ-P2C002S	Approx. 4 min.	Approx. 20 min.
Digital Slow:	-1 to +1 times normal speed (DVCPRO50/DVCPRO)		

Video Specification (Digital Video)

Sampling Frequency:	Y: 13.5 MHz, P _B /P _R : 6.75 MHz (DVCPRO50)		
Quantizing:	8 bits		
Video Compression Format:	DV-Based Compression (SMPTE314M)		
Video Compression Ratio:	1/3.3 (DVCPRO50), 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)	P _B /P _R : 30 Hz to 2.75 MHz (-2.0 dB)
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)
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, P _B , P _R) Y: 1.0 Vp-p, 75Ω, P _B /P _R (525i): 0.486/0.7 Vp-p switchable, 75Ω (75% color bar, 7.5% setup) P _B /P _R (625i): 0.7 Vp-p, 75Ω (100% color bar)
Analog Composite Input:	BNC x 2 (loop-through), 75Ω on/off, Video: 1.0 Vp-p (75Ω)
Reference Input:	Analog composite, BNC x 2 (loop-through), 75Ω on/off
SDI Input (option):	BNC x 2 (active-through), serial digital component SMPTE259M-C (NTSC), ITU-R BT.656-4 (PAL) standard

Video Output Signal

Analog Component Output:	BNC x 3 (Y, P _B , P _R) Y: 1.0 Vp-p, 75Ω, P _B /P _R (525i): 0.486/0.7 Vp-p switchable, 75Ω (75% color bar, 7.5% setup) P _B /P _R (625i): 0.7 Vp-p, 75Ω (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) SMPTE259M-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 μ 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 μ sec, T2=15 μ sec (on/off auto)

Audio Input Signal

Analog 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 SMPTE259M-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 75Ω
Serial Digital Output:	BNC x 3, 75Ω SMPTE259M-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, 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 \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

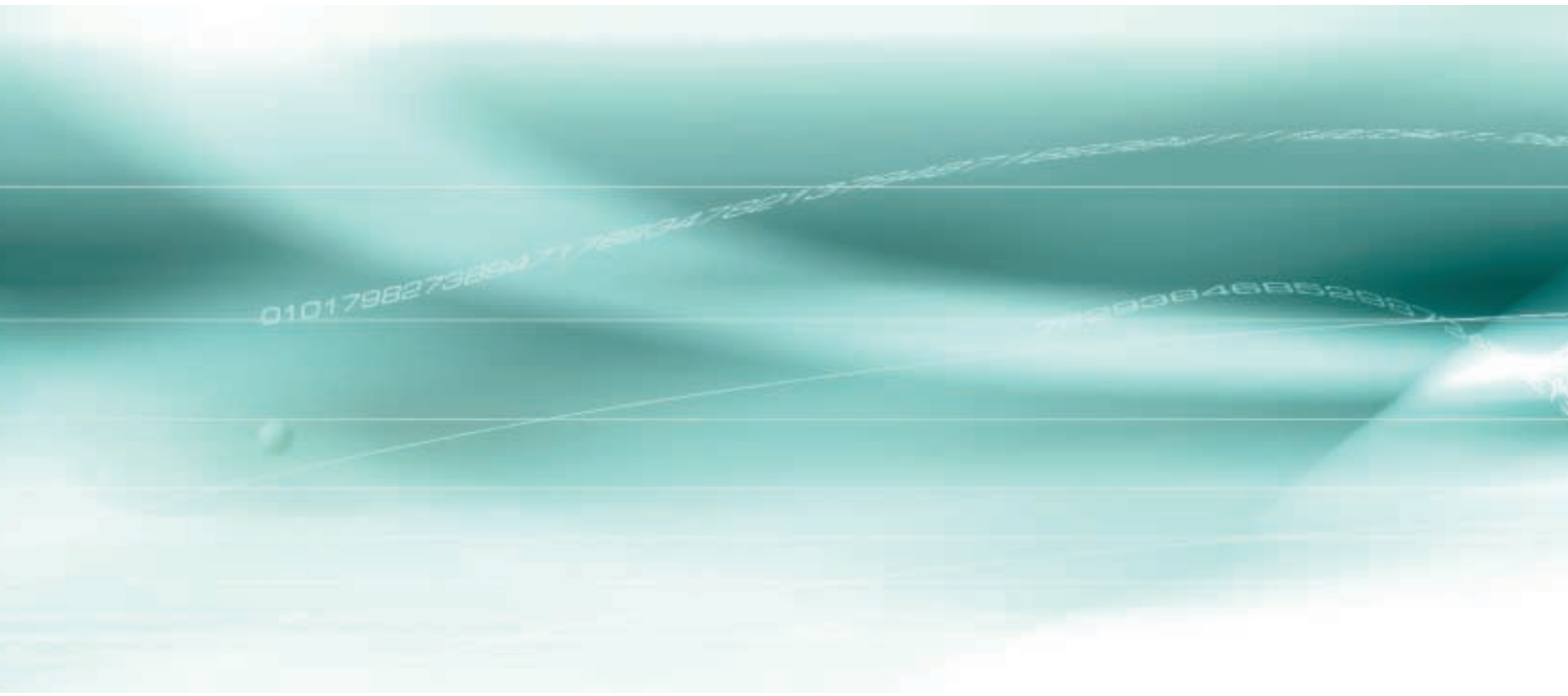
MEMORY CARD DRIVE (P2 drive)

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 P2 Takes You to the Beyond

Panasonic

**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
<http://panasonic.biz/sav/p2>

**Panasonic Broadcast & Television
Systems Company**
A Division of Matsushita Electric Corporation
of America
1 Panasonic Way 4E-7, Secaucus, NJ 07094
Tel. +1 201 348 5300
www.panasonic.com/broadcast

Panasonic Broadcast Europe
A Division of Panasonic Marketing Europe
GmbH
Hagenauer Str. 43
65203 Wiesbaden, Germany
Tel. +49 (0)611 235 401
www.panasonic-broadcast.com

Panasonic Singapore
A Division Company of Matsushita Electric
Asia Pte Ltd
2 Jalan Kilang Barat, Panasonic Building
Singapore 159346
Tel. +65 6270 0110
www.panasonic.com.sg

