

# Panasonic

# P2HD

## AJ-PX5000G

Memory Card Camera Recorder



**AVC ULTRA** AVC INTRA AVC LONG G P2 P2 micro SD XC **HDMI**

\*The lens, mic, viewfinder, wireless receiver and battery pack shown in the photo are optional accessories.

## A High-Quality, Cost-Effective ENG Camera Recorder with Versatile IT Support Backed by AVC-ULTRA\*<sup>1</sup> Codecs, microP2 Card Slots, New Dual Codec Recording\*<sup>2</sup> and Network Function\*<sup>2</sup>

Combining high-end image quality with cost-efficient operation, the AJ-PX5000G meets the new needs of broadcast workflows for the networking age, and sets a new standard for ENG. In addition to conventional P2 card slots, the AJ-PX5000G is the first camera recorder to offer microP2 card slots which dramatically reduce media costs. Recording codecs start with AVC-Intra and include, again for the first time in a camera recorder, the AVC-LongG50/25 codecs with low-bit-rate operation and Full-HD 1920 x 1080, 4:2:2, 10 bit image quality. Even longer record time is possible by using AVC-LongG12 (8 bit 4:2:0). Dual codec recording\*<sup>2</sup> is also possible with low-bit-rate and high-quality AVC-LongG6\*<sup>2</sup> codec (Full-HD 1920 x 1080), for breaking news. The AJ-PX5000G also supports the AVC-Intra200 codec\*<sup>2</sup>\*<sup>3</sup> for visually lossless images that approach the level of uncompressed master quality. Featuring the newly developed 2.2-megapixel 2/3-type MOS image sensor, this advanced camera recorder achieves high F12 (59.94 Hz)/F13 (50 Hz) sensitivity and excellent images with an S/N ratio of 62 dB. Also enabling progressive full frame\*<sup>2</sup> 1080/60p\*<sup>4</sup> and 1080/50p shooting, the AJ-PX5000G comes with 3G SDI/HDMI terminals as a standard feature. Operation is also possible using AVC-Proxy\*<sup>2</sup> images. A wired/wireless LAN connection enables metadata input\*<sup>2</sup> and playlist editing,\*<sup>2</sup> while 4G connection\*<sup>5</sup> allows proxy files to be transferred to a network server, contributing to a smoother ENG workflow based on networking and IT operation.

\*1: AVC-ULTRA is the name of Panasonic's professional video codec family. The AJ-PX5000G does not support all of the formats included in the AVC-ULTRA family.

\*2: Available in the near future.

\*3: An optional function.

\*4: 60p is actually recorded at 59.94 Hz.

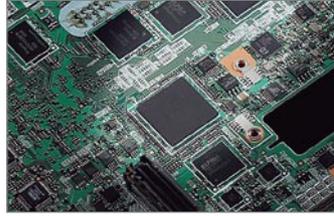
\*5: This will be available in the future.

The use of DCF Technologies is under license from Multi-Format, Inc.



## First Standard-Equipped AVC-ULTRA Codec

From mastering to streaming, the image quality and bit rate can be selected to match the application. Panasonic's professional A/V codec family, AVC-ULTRA, is provided as standard equipment for the first time ever, to meet the particular needs of broadcasting and image production.



AVC-ULTRA Codec LSI

**AVC Intra** An intra-frame compression method that is highly suited to image production. In addition to the conventional AVC-Intra100/50, an optional AVC-Intra200 codec will be available.\*1 With superb images that approach uncompressed quality and 24 bit audio, it offers a level of quality that meets the needs of mastering and archiving.

**AVC Long G** An inter-frame compression method that achieves high-quality HD recording at a low bit rate. Ideal for providing on-air content direct from the shooting location and for workflows using content transferred over the internet. Four bit rates are available: AVC-LongG50/25/12\*/6\*1\*2 Mbps. AVC-LongG50/25 provide 10 bit/4:2:2 quality at a bit rate of approximately 25 Mbps.

**AVC Proxy** Low-bit-rate, high-resolution, high-sound-quality proxy video (Quick Time/H.264) is also recorded with the actual data.\*3 Also includes metadata for efficient offline editing. See the table (AVC-Proxy Recording Modes and Recording Signals) on Page 6.



\*1: Available in the near future. \*2: Recordable when dual codec recording is selected. \*3: Proxy data cannot be recorded when using the Loop Rec or Interval Rec function. Proxy data is low-resolution video and audio data with time code, metadata, and other management data in a file format. The use of DCF Technologies is under license from Multi-Format, Inc.

## Standard-Equipped microP2 Card Slots

The AJ-PX5000G is the first camera recorder to come with two slots for the microP2 card, the new broadcast-use memory card downsized to match the size of a conventional SD memory card.

• **microP2 card:** While inheriting the high reliability of the P2 card and maintaining the large capacity of 64 GB,\*1 the microP2 card was greatly downsized to match the size of an SD memory card, thus resulting in a considerable reduction in cost.

• **Content Protection System (CPS):** A new security function featured on the microP2 card. The content recorded on the card is locked with a password to protect against unauthorized access.

This prevents data from being stolen and enables secure media control.

- **P2 Card Slots:** Two conventional P2 card slots can be used.\*2
- **Highly Mobile and Reliable:** The microP2 and P2 cards are highly resistant to temperature changes, dust, impacts, and vibration, and there are no worries about condensation, head clogging, or dropout as there are with VTR systems. Data is recorded onto empty card spaces, so there is no need to search for the beginning and ending of recorded portions. There is also no danger of mistakenly recording over existing data.

\*1: Total card capacity includes space for data management, such as system data; therefore, the actual usable area is less than the capacity indicated on the card. See the "Recording Times" table on Page 6 for recording times.

\*2: microP2 and P2 cards cannot be simultaneously recorded.



## Network Solutions

(Available in the near future)

The AVC-Proxy files and Network function (wired/wireless LAN) make it possible to configure a workflow for previewing images, editing metadata, editing playlists, sharing networks, and uploading motion images quickly and at low cost with a PC/Mac, tablet, or smartphone.\*1

- **New Dual Codec Recording:** While recording actual data with an AVC-Intra100 or LongG50/25 codec, you can simultaneously record with the low-bit-rate HD AVC-LongG6 codec. This lets you, for example, distribute news flashes in Full-HD.
- **Wired LAN Connection:** Proxy image previewing, metadata editing, and streaming are possible from a PC or Mac via the LAN (Ethernet) terminal.
- **Wireless LAN Connection:** The optional AJ-WM30 Wireless Module allows wireless LAN (IEEE 802.11) connection. This enables previewing and metadata editing with a tablet or smartphone.\*1
- **4G Connection (available in the future):** Functions equivalent to those with a wired LAN connection are possible over a 4G connection.
- **Playlist Editing:**\*2 Playlists can be edited using proxy images with a PC/Mac or tablet. The workflow can be streamlined and speeded up by rough editing on-location, and then sending data or transferring files.\*3 The results can be saved together with the edited playlist, then played, SDI output, and copied using a web application.

\*1: For the latest information, see "Service and Support" on the Panasonic web site (<http://pro-av.panasonic.net/>).

\*2: For a wireless LAN connection, the AJ-WM30 Wireless Module is required.

\*3: There is no data transfer function in the camera itself.



\*1: For the latest information, see "Service and Support" on the Panasonic web site (<http://pro-av.panasonic.net/>).

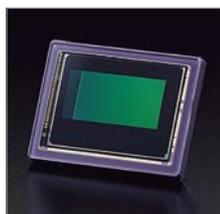


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# Camera Performance, Functions, and Operating Ease

## High Sensitivity and Low Noise with the New 2/3 type 3MOS Image Sensors

• **New 2/3 type 3MOS Image Sensors:** The newly developed 2.2 megapixel 2/3 type 3MOS (RGB) image sensors offer full-pixel HD (1920 x 1080) resolution, F12 (59.94 Hz) or F13 (50 Hz) sensitivity and low noise with an S/N of 62 dB (with DNR ON). It also achieves rich gradation and vibrant color reproduction.



2/3 type, 2.2 megapixel MOS sensor

## A Newly Developed LSI for High Image Quality

This LSI incorporates a high-performance digital signal processor (DSP). It also integrates intricate image quality adjustment functions, including 12 axis + skin color 3-axis independent correction capable of hue adjustment for each color space, plus Skin Tone Detail and other settings. In addition, the DSP achieves lower power consumption than previous models.



Camera signal processing LSI

• **Advanced Flash Band Compensation (FBC):** High-precision flash band detection and compensation.

## Image-Enhancing Functions and Versatile Image Settings

- **DRS (Dynamic Range Stretch):** Suppresses blocked shadows and blown highlights to achieve a visually wide dynamic range.
- **Gamma:** Select from 7 mode (HD/SD/FILMLIKE 1/FILMLIKE 2/FILMLIKE 3/FILM-REC/VIDEO-REC) gamma curves.
- **Digital Image Settings:** H detail, V detail, detail coring, skin tone detail, chroma level, color temperature, master pedestal, knee, matrix, color correction.

## Advanced Functions for Broadcast Applications

- **Scan Reverse Function:** This function cancels the image inversion that occurs when Angenieux or Canon HD lens adapters are used.
- **High-Sensitivity DS Gain:** High sensitivity is achieved without increasing noise.\*1 Combined with gain, this enables a maximum +76 dB,\*2 for ultrahigh sensitive recording at minimum subject illumination of 0.004 lx.
- **Digital Zoom:** 2x/3x/4x digital zoom boost.
- **Electronic Shutter with Half-Speed:** The AJ-PX5000G features six fixed shutter speeds of up to 1/2000 sec., plus "half-speed" (180 degree) and synchro-scan capability.
- **Two Optical Filters:** ND and CC, have four positions each. The 3200K, 4300K, 5600K and 6300K positions of the CC filter help to express deeper colors.

\*1: Due to the use of image accumulation, the number of recorded frames per second decreases. This results in a frame-by-frame playback effect.

\*2: With super gain set at +42 dB and digital super gain (cumulative mode) at +34 dB.

## Setup Data Files

- **Setup Files:** Eight camera setup data files (including four scene files) can be saved on an SD/SDHC/SDXC memory card. Loading this file from memory card makes color setting easier for multiple cameras.
- **Lens Files:** Stores settings for interchangeable lenses. Eight files can be stored in the camera unit, and 64 (8 x 8) files can be saved on an SD/SDHC/SDXC memory card.



picture simulated

## Shooting Assist Functions

- **Focus Assist:** Expands the center section of the viewfinder screen for easier focusing.
- **Shockless White Balance:** A smooth transition occurs when switching White Balance modes. This is effective, for example, when moving from outdoors to indoors.
- **User Buttons:** Functions can be freely allocated to the five User buttons.
- **WFM:** Simplified waveform and vectorscope display.

## Optional Color and Black-and-White Viewfinders

The optional AJ-CVF100G HD Color Viewfinder employs a 25.4 mm (1 inch) 1,500,000 dot-equivalent (960 x 540 x 3 [RGB]) transmission-type LCOS (Liquid Crystal On Silicon) to achieve high resolution, high brightness and high response. It helps to reduce the possibility of white balance adjustment errors and other errors in recording.

The optional AJ-HVF21KG 50.8 mm (2 inches) Black-and-White HD Viewfinder or AG-CVF15G/CVF10G HD Color Viewfinders can also be used.

## Color LCD Monitor

The built-in 8.76 cm (3.45 inches) color LCD serves as a monitor when shooting, displays menus, and provides waveform and vectorscope displays. After recording, clips selected from clip and thumbnail displays can be played or deleted (single or multiple clips). In addition to VTR-like pause, fast-forward, and rewind functions, multiple clips can be consecutively played in any desired sequence for transmitting data from the shooting location.

\* Clips with different recording formats cannot be consecutively played.

## Recording Supported by Versatile Functions and Easy Operation

- **Mode Check:** Displays a list of the camera settings on the viewfinder and LCD monitor.
- **Zebra:** Select any two levels from among 0% to 109%, in 1% steps. A mode also allows two patterns to be overlaid and displayed.
- **Y-GET:** Measures brightness at center and displays numerical data.
- A 3 point locking viewfinder mount allows precise adjustment.
- The large audio dials (4 channel) feature a push lock function.
- The Audio Input level adjustment (front) can be switched ON/OFF and allocated to desired channels.
- **microP2 Card Window:** The microP2 card can be exchanged when holding the camera on your shoulder.\*
- Light weight of approx. 3.4 kg (7.5 lbs., main unit only), low power consumption of 29 W (main unit only, 1080/59.94i, AVC-Intra100 standard recording status, LCD ON).

\* Slot 3 only.

## Uplink Device Support

(Available in the near future)

Portable uplink solutions are supported. The status, settings, and bandwidth condition for the LiveU LU40 Series\* can be displayed on the camera viewfinder, and uplink start/stop can be operated. This allows the camera operator to handle live relays comfortably and securely.

\* The LiveU LU40 Series is not included in the option. A BNC cable and USB cable are required to connect the camera to the LU40 Series. For mounting to the camera, a separately purchased mount adapter (manufactured by a different company) is required. For information on LiveU and other application solutions, see "Service and Support" on the Panasonic web site (<http://pro-av.panasonic.net/>).



LiveU LU40i



# Recorder Functions and Interfaces

## Full Frame Progressive Recording (Available in the near future)

1080/60p\* (50p) full frame progressive recording is supported for the first time in the AJ-PX5000G. In addition to being able to record with the AVC-Intra100 or AVC-LongG25 codec, the camera can through-output data from the 3G SDI and HDMI output terminals.

\* 60p is actually recorded at 59.94 Hz.

## HD/SD Multi Format/Multi Codec

In addition to 1080/60i\*<sup>1</sup>, the AJ-PX5000G supports 24p\*<sup>1\*2</sup>, 30p\*<sup>1\*2</sup>, 60p\*<sup>1\*2</sup>, and 720p\*<sup>2</sup> multi HD format and SD recording. Also, 50i, 50p, and 25p are supported by 59.94 Hz/50 Hz switching, for convenient use in productions headed for overseas use or for use in overseas branch studios. For 24p\*<sup>1</sup>/30p\*<sup>1</sup> (25p) image recording, a native (PN) recording mode that records only the effective frames, or a pulldown recording mode can be selected. Recording is also possible with a 24PA (Advance) pulldown system suited to 24p image nonlinear editing. A wide variety of progressive recording is possible. (See right page.) DVCPRO HD/DVCPRO50/DVCPRO/DV recording is also supported.

\*1: 60i, 60p, 24p, and 30p are actually recorded at 59.94 Hz, 23.98 Hz, and 29.97 Hz respectively.

\*2: Available in the near future.

## Metadata Recording

Shooter's name, Reporter's name, Program name, etc., can be recorded as clip metadata. Embedded GPS enables location information recording (latitude, longitude, altitude) (available in the future). This metadata makes search or classification easier. The metadata can be modified by PC and other devices via USB, LAN or Wireless LAN\*.

\* The AJ-WM30 Wireless Module is required.

## High-Quality 24 Bit 4 Channel Audio Recording

The AVC-Intra or AVC-LongG modes support 24 bit digital audio recording\* (16 bit for DVCPRO HD, DVCPRO 50, DVCPRO and DV). The AJ-PX5000G offers 4 channel audio in all recording modes. Each channel input can be selected from FRONT (mic), REAR (line) and WL (wireless). The level volume also supports 4 channels.

\* The audio signal can be played back by using 24 bit digital audio equipment. For details, refer to "Note Regarding 24 bit Audio" on page 10.

## Four Slots for Simul Rec and Other Recording Tasks

- **Four (2 x 2) Slots:** Features two slots each for microP2 cards and P2 cards.
- **Simul Rec:**\*<sup>1</sup> Records simultaneously onto two microP2 cards or P2 cards.\*<sup>2</sup>
- **Hot-Swap Rec:** Thanks to the two card slots, you can hot-swap P2 cards for continuous non-stop recording.
- **One-Clip Rec Mode:** Records up to 99 consecutive cuts as a single clip. A text memo is automatically attached to the Rec Start point for easy searching for the beginning of the cut.
- **Pre Rec:** This stores approximately 8 seconds of video and audio data in memory while in standby mode and lets you recover and use the data from the point approximately 8 seconds before you started recording.
- **Loop Rec:** By allocating the open space on two microP2 cards or two P2 cards, the camera continues to record over that area until the operator pushes the stop button.\*<sup>2</sup>
- **Interval Rec:** Automatically records intermittently based on a set interval and recording time.
- **One-Shot Rec:** A frame-shot recording function useful for producing animations.
- **Text Memo:**\*<sup>3</sup> Up to 100 memos can be posted onto a clip as bookmarks.
- **Shot Marker:**\*<sup>3</sup> Used to mark clips as OK, NG, etc.
- **Rec Review:** This lets you run a quick playback check of the clip-end you have just recorded.

\*1: Available in the near future.

\*2: microP2 and P2 cards cannot be simultaneously recorded.

\*3: The text memo and shot mark cannot be added in Loop Rec, Interval Rec, or One-Shot Rec mode.





Card slot, LCD monitor and recorder-related function parts

### 3G SDI Input/Output and HDMI Output



- **3G SDI IN:** Enables line recording. Improves operation on location.
- **3G SDI OUT1:** 3 Gbps supports 1080/60p and 50p progressive full frame image output. Allows Rec Start/Stop linked backup recording with a Panasonic recorder equipped with SDI input.
- **3G SDI OUT2:** Outputs separately from SDI OUT1. Can be set to HD SDI or down-converted SD SDI.
- **HDMI OUT:** This terminal allows digital A/V output to a wide range of devices with both professional and consumer specifications.
- **Aspect Conversion:** The aspect ratio can be selected from among Side Crop, Letter Box, or Squeeze mode when down-converting and outputting from SDI OUT1/SDI OUT2 terminals.

### USB 3.0 High-Speed Transfer Interface

- **USB 3.0 (HOST):** High-speed file copying to external storage.\*
- **USB 2.0 (DEVICE):** Allows use as a P2 card drive.

\* Storage media with more than 2 TB of capacity cannot be used.

### Camera Remote System Compatibility (Available in the near future)

- **10 pin Remote Terminal:** Camera remote operation is enabled with the optional AG-EC4G Extension Remote Control Unit or AJ-RC10G Remote Control Unit.\*
- **Camera Studio System:** The optional camera extension system (AG-CA300G Camera Adapter and AG-BS300 Base Station) support cost-efficient studio integration.

\* Only functions that are supported by the AJ-PX5000G can be controlled.

### Other Interfaces

- **TC IN/TC OUT:** A built-in SMPTE time code generator/reader.
- **GENLOCK IN:** For synchronized recording with a multi-camera system.
- **UniSlot®** compatible wireless receiver slot (2 channels).
- **XLR Audio Input:** 2 channel mic/line inputs supporting 48V phantom power supply.
- Equipped with earphone terminals (stereo mini-jack) and speaker.
- Back tally, rear tally equipped. ON/OFF switchable.

### Recording Codes and Video Formats

Codec	1080											720						480				576			
	60p	50p	60i	50i	30p*	30pN*	24p*	24pA*	24pN*	25p*	25pN*	60p*	50p*	30p*	30pN*	24p*	24pN*	25p*	25pN*	60i	30p	24p	24pA	50i	25p
AVC-Intra200 (option)*	—	—	√	√	—	√	—	—	√	—	√	√	√	—	—	—	—	—	—	—	—	—	—	—	—
AVC-Intra100	√	√	√	√	—	√	—	—	√	—	√	√	√	—	√	—	√	—	√	—	—	—	—	—	—
AVC-Intra50	—	—	√	√	—	—	—	—	—	—	—	√	√	—	—	—	—	—	—	—	—	—	—	—	—
AVC-LongG50	—	—	√	√	—	√	—	—	√	—	√	√	√	—	—	—	—	—	—	—	—	—	—	—	—
AVC-LongG25	√*	√*	√	√	—	√	—	—	√	—	√	√	√	—	—	—	—	—	—	—	—	—	—	—	—
AVC-LongG12*	—	—	√	√	—	√	—	—	√	—	√	√	√	—	—	—	—	—	—	—	—	—	—	—	—
DVCPRO HD	—	—	√	√	√	—	√	√	—	√	—	√	√	√	—	√	—	√	—	—	—	—	—	—	—
DVCPRO 50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	√	√	√	√	√	√
DVCPRO	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	√	√	√	√	√	√
DV	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	√	√	√	√	√	√

\*Available in the near future.

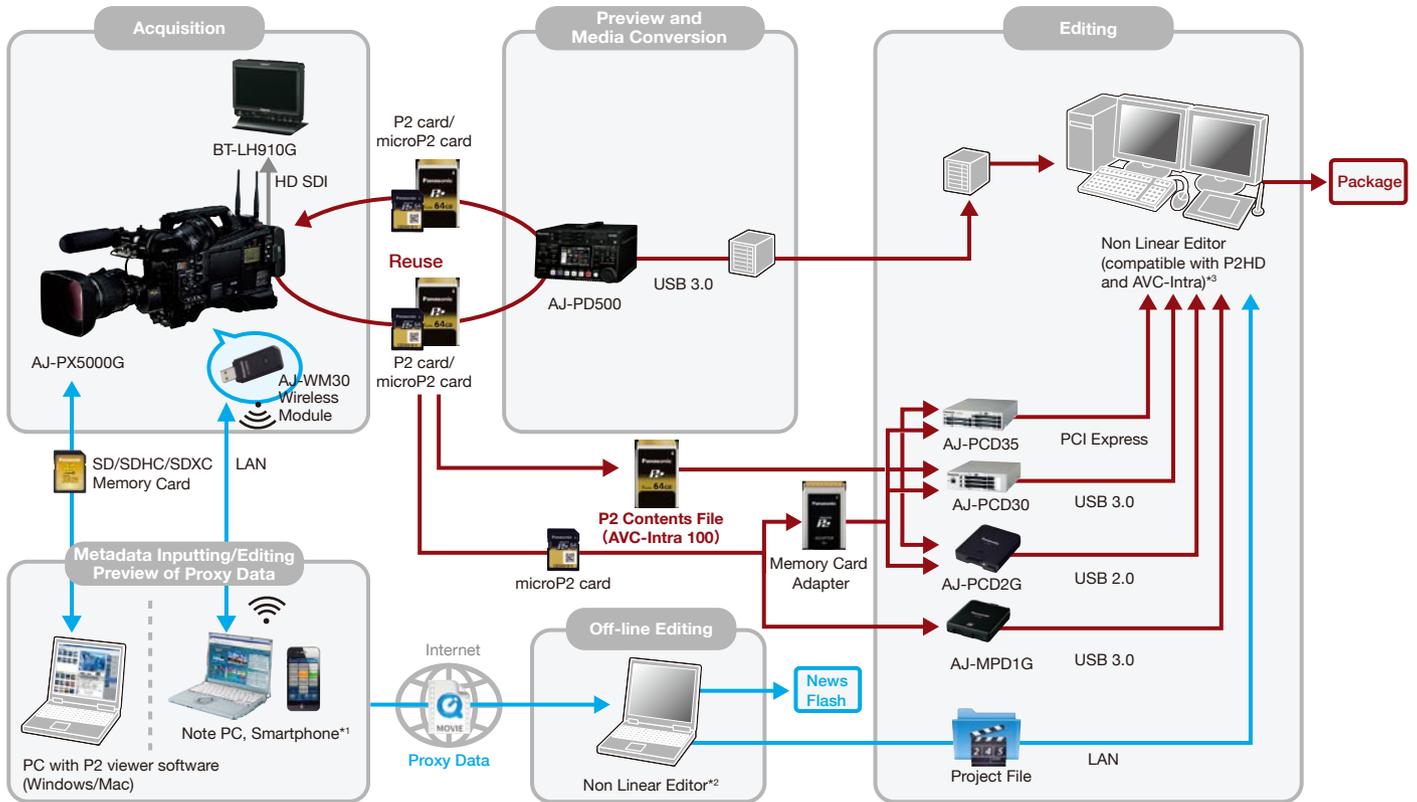
### Recording Times\*1

Recording format (Compression Format) 59.94Hz/50Hz	Card x 1		
	16 GB	32 GB	64 GB
AVC-Intra200 (Option)*2	Approx. 8 min.	Approx. 16 min.	Approx. 32 min.
AVC-Intra100/DVCPRO HD	Approx. 16 min.	Approx. 32 min.	Approx. 64 min.
AVC-LongG50/AVC-Intra50/DVCPRO 50	Approx. 32 min.	Approx. 64 min.	Approx. 128 min.
AVC-LongG25/DVCPRO/DV	Approx. 64 min.	Approx. 128 min.	Approx. 256 min.
AVC-LongG12*2	Approx. 120 min.	Approx. 240 min.	Approx. 480 min.

### AVC-Proxy Recording Modes and Recording Signals

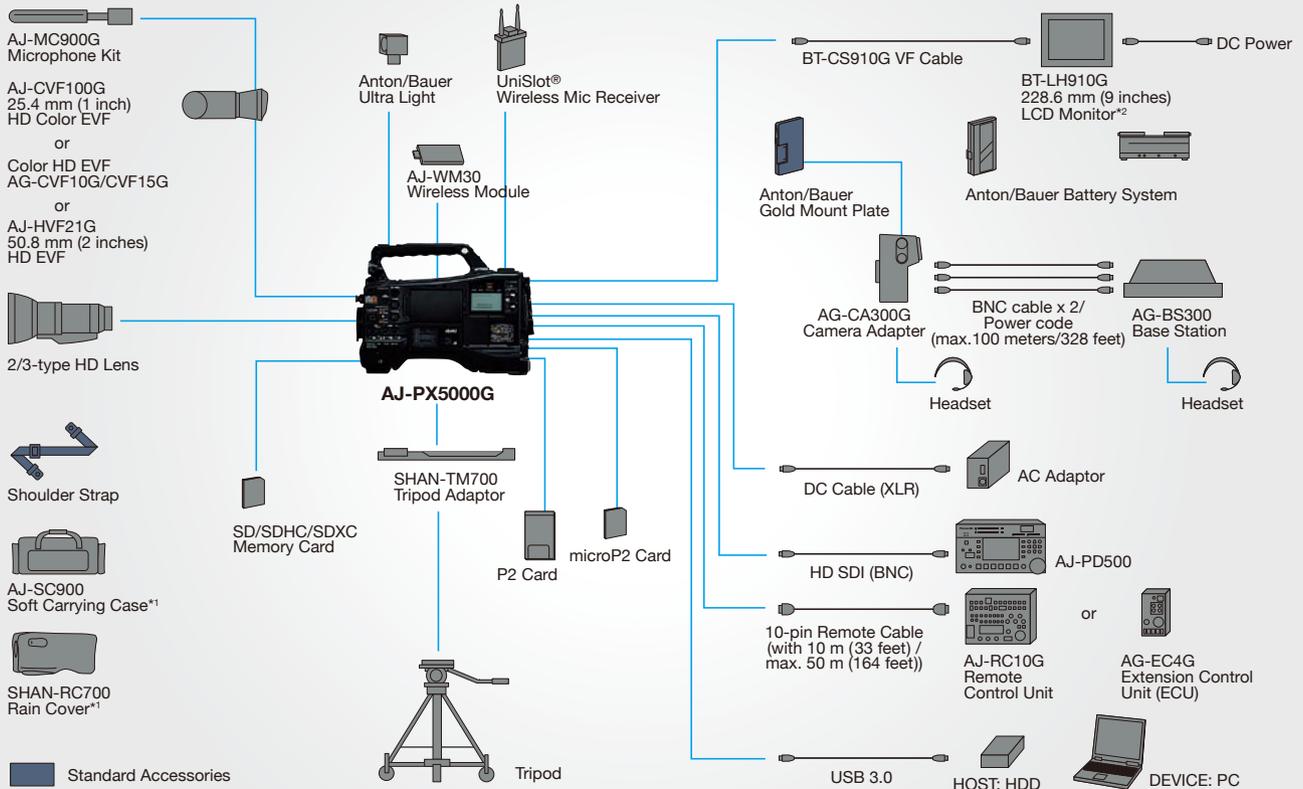
Recording Mode	Video			Audio		
	Resolution	Codec	Bit Rate	Codec	CH	Bit Rate/1CH
STD 2CH MP4	320 x 240 (QVGA)	MPEG-4 Simple Profile	1500 kbps	AAC-LC	2CH	64 kbps
LOW 2CH MOV	1080i mode: 480 x 270 480-59.94i mode: 352 x 240 576-50i mode: 352 x 288 1080 60/50p mode: 320 x 180 1080 30/25/24p mode: 480 x 270 720 60/50p mode: 320 x 180 720 30/25/24p mode: 480 x 270	H.264 Baseline Profile 800	800 kbps	AAC-LC	2CH	64 kbps
HQ 2CH MOV	640 x 360	H.264 High Profile	1500 kbps	AAC-LC	2CH	64 kbps
HQ 4CH MOV	640 x 360	H.264 High Profile	1500 kbps	AAC-LC	4CH	64 kbps
SHQ 2CH MOV	960 x 540	H.264 High Profile	3500 kbps	Linear PCM	2CH	768 kbps

\*1: For 1080/59p and 1080/50p, the recording times become 1/2 of those shown above. All of the times apply when single clips are recorded continuously one after the other onto a P2 card. Depending on the number of clips to be recorded, the recordable time may be shorter than the times given. \*2: Available in the near future.



\*1: Proxy data can be stored and transferred by Mac/PC only. \*2: Must support proxy video data. \*3: To link with an off-line editing system, compatibility with project data of the off-line editing system is required. The use of DCF Technologies is under license from Multi-Format, Inc.

## System Chart



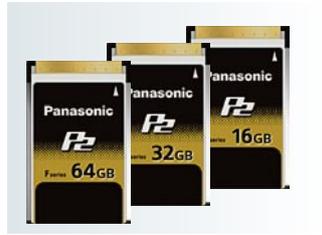
\*1: Not available in some areas. \*2: Mounting bracket is required to mount on a camera recorder.



**AJ-WM30**  
Wireless Module



**AJ-AKR200G**  
Upgrade Software Key  
Enables AVC-Intra 200 codec recording.  
*\* Available in the near future.*



**AJ-P2E064FG**  
**AJ-P2E032FG**  
**AJ-P2E016FG**  
Memory Card "P2 card" F Series\*1



**AJ-P2M064AG**  
**AJ-P2M032AG**  
microP2 Card



**AJ-MPD1G** "microP2 drive"  
Memory Card Drive  
Compact, lightweight, cost-effective USB-Bus powered microP2 card drive with USB 3.0 support and 2 card slots.



**AJ-PD500** "P2 portable deck"  
Memory Card Recorder  
AVC-ULTRA and microP2 supported. A half-rack size recorder for a high-quality, cost-effective workflow



**AJ-HPM200** "P2 mobile"  
Memory Card Recorder/Player  
Advanced P2 mobile with versatile functions such as networking, AVCHD compatibility (option) and eSATA interface.



**AG-HPD24** "P2 portable deck"  
Memory Card Portable Recorder  
Equipped with USB 3.0 and RS-422A interfaces, this compact 2-slot P2 deck supports 3D recording.



**AJ-PCD35** "P2 drive"  
Memory Card Drive  
High-speed PCI Express interface.



**AJ-PCD30** "P2 drive"  
Memory Card Drive  
3-slot drive with USB 3.0 interface for high-speed 1.5 Gbps data transfer.



**AJ-PCD2G** "P2 drive"  
Memory Card Drive  
USB-Bus powered 1 slot P2 drive  
Ideal for mobile application.



**P2 Viewer Plus**\*2  
Viewing Software  
Supports P2HD. This Windows/Mac utility makes it easy to view and copy P2 files.



**AJ-SK001G** (for P2 Viewer plus)  
Ingesting Function Software Key\*3  
The ingesting function copies all clips on P2 cards to a storage medium, such as an HDD. During ingesting, the clips are verified for secure copying, with log files created.

**Avid NLE Plug-In Software** (for Avid Media Composer V6.5 or later)



**AJ-PS001G** **NEW**  
Software Key  
for AVC-Proxy re-link.



**AJ-PS002G** **NEW**  
Software Key  
for AVC-Intra50/100 P2 file export.



**AJ-PS003G** **NEW**  
Software Key  
for AVC-LongG P2 file export.  
(Scheduled for release in autumn, 2013. Purchase necessary.)



**AJ-PS004G** **NEW**  
Software Key  
for AVC-LongG file import to edit.  
(Scheduled for release in autumn, 2013. Purchase necessary.)

\*1: The P2 card E Series may require P2 equipment software to be updated. Please go to the P2 support page on the Panasonic web page <http://pro-av.panasonic.net/>

\*2: For P2 Viewer Plus download and operating requirement information, see "P2 Viewer Plus" on the Panasonic web page [http://pro-av.panasonic.net/en/sales\\_o/p2/p2viewerplus/](http://pro-av.panasonic.net/en/sales_o/p2/p2viewerplus/)

\*3: For information on purchasing software keys, see "Service and Support" on the Panasonic web page <http://pro-av.panasonic.net/>

**Note Regarding 24 bit Audio**

Clips recorded using 24 bit audio must be played back with 24 bit compatible P2 equipment or the P2 Viewer Plus. If clips are played back with equipment not compatible with 24 bit audio, the clip number will be indicated in red and the clips will not be played back. For the latest information on 24 bit compatible P2 equipment and P2 Viewer Plus, see "Support & Download" on the Panasonic web page <http://pro-av.panasonic.net/>

## Optional Accessories

As of September, 2013



**AJ-CVF100G**  
25.4 mm (1 inch)  
HD Color EVF



**AG-CVF10G**  
Color HD EVF  
Open one way for LCD  
monitor viewing



**AG-CVF15G**  
Color HD EVF  
Open two ways for LCD  
monitor viewing



**AJ-HVF21KG**  
50.8 mm (2 inches)  
HD EVF  
59.94Hz/50Hz  
switchable



**AJ-MC900G**  
Stereo Microphone



**SHAN-TM700**  
Tripod Adaptor



SD/SDHC/SDXC  
Memory Card



**BT-LH910G**  
228.6 mm (9 inches)  
HD/SD LCD monitor



**BT-CS910G**  
VF Cable



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



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

## Camera Studio System



BNC cables transmit degradation-free HD digital images up to 100 meters (328 feet) in addition to giving you full remote control.

**AG-CA300G**  
Camera Adapter

**AG-EC4G**  
Extension Control Unit

**AG-BS300**  
Base Station

**AJ-RC10G**  
RCU (Remote Control Unit)  
with 10 meters (32 feet) remote control  
cable

**AG-YA500G**  
VF Interface Box

**AJ-C10050G**  
Remote Control Cable  
(50 meters / 164 feet)

Bound Cable for Camera Studio System  
(between AG-BS300 and AG-CA300G)  
[Canare]  
**V2PCS25-5CFWCE-SF-SC** (25 meters/82 feet)  
**V2PCS50-5CFWCE-SF-SC** (50 meters/164 feet)  
**V2PCS100-5CFWCE-SF-SC** (100 meters/328 feet)  
Power Cable for Camera Studio System  
(between AG-BS300 and AG-CA300G)  
[Canare]  
**DC50V10-CE01PS-SC** (50 meters/164 feet)  
**DC100V10-CE01PS-SC** (100 meters/328 feet)

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

## Other Manufacturers' Products



### 2/3-type CAC Applicable Lenses

The use of Canon, Fujinon and Angenieux lenses with CAC (Chromatic Aberration Compensation) is recommended.

For the latest information on CAC applicable lenses, see "Support & Download" on the Panasonic website (<http://pro-av.panasonic.net/>). The installation of CAC data might be required depending on the lens. Some Angenieux lenses do not support CAC operation. Be sure to specify CAC applicability when purchasing lenses.



Anton/Bauer  
Ultra Light



Anton/Bauer  
Dionic Battery

## General

Power:	DC 12 V (11.0 V to 17.0 V)
Power Consumption:	29 W (body only, 1080/59.94i, AVC-Intra 100 standard recording status, LCD ON) 70 W (with all optional accessories connected and maximum power supplied from each output terminal)
Operating Temperature:	0°C to 40°C (32°F to 104°F)
Operating Humidity:	10% to 85% (relative humidity)
Storage Temperature:	-20°C to 60°C (-4°F to 140°F)
Weight:	Approx. 3.4 kg (7.5 lbs.) (body only, excluding the battery and accessories)
Dimensions:	147 mm (W) × 267 mm (H) × 342 mm (D) (5-25/32 inches × 10-1/2 inches × 13-15/32 inches) Body only, excluding protrusion

## Camera Unit

Pickup Device:	2/3-type 2.2 million pixels, MOS × 3
Lens Mount:	2/3-type bayonet
CC Filter:	A: 3200 K, B: 4300 K, C: 5600 K, D: 6300 K
ND Filter:	1: CLEAR, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND
Gain Setting:	NORMAL mode: -3 dB, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 15 dB, 18 dB, 21 dB, 24 dB, 27 dB, 30 dB HIGH SENS mode: -6 dB, -3 dB, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 15 dB, 18 dB, 21 dB, 24 dB, 27 dB, 30 dB
Digital Super Gain: (DS.GAIN)	Selectable from 6 dB, 10 dB, 12 dB, 15 dB, 20 dB, 24 dB, 28dB, 34 dB
Super Gain (S.GAIN):	Selectable from 30 dB, 36 dB, 42 dB
Shutter Speed:	59.94 Hz 60i/60p mode: 1/100 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec., 1/2000 sec. HALF 30p mode*: 1/100 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec., 1/2000 sec., HALF 24p mode*: 1/100 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec., 1/2000 sec., HALF 180.0 deg, 172.8 deg, 144.0 deg, 120.0 deg, 90.0 deg, 45.0 deg 50 Hz 50i/50p mode: 1/60 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec., 1/2000 sec. HALF 25p mode*: 1/60 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec., 1/2000 sec., HALF 180.0 deg, 172.8 deg, 144.0 deg, 120.0 deg, 90.0 deg, 45.0 deg
Synchro Scan Shutter:	1/60.1 sec. to 1/7200 sec. (1080/59.94i, 1080/59.94p, 480/59.94i) 1/50.1 sec. to 1/6000 sec. (1080/50i, 1080/50p, 576/50i) 1/30.1 sec. to 1/3600 sec. (1080/29.97p, 480/29.97p)* 1/24.1 sec. to 1/2880 sec. (1080/23.98p, 480/23.98p)* 1/25.1 sec. to 1/3000 sec. (1080/25p, 576/25p)*
Shutter Open Angle:	Configurable between 3 deg and 359.5 deg (in 0.5 deg steps)
Sensitivity:	NORMAL mode: F9 (2000 lx, 3200 K, 89.9% reflection, 1080/59.94i) F10 (2000 lx, 3200 K, 89.9% reflection, 1080/50i) HIGH SENS mode: F12 (2000 lx, 3200 K, 89.9% reflection, 1080/59.94i) F13 (2000 lx, 3200 K, 89.9% reflection, 1080/50i)
Minimum Subject Illumination:	Approx. 0.004 lx (F1.4, +42 dB (S.GAIN), +34 dB (DS.GAIN))
Image S/N:	62 dB (standard)
Horizontal Resolution:	1000 TV or higher (center)

## Memory Card Recorder

Recording Media:	P2 card, microP2 card
System Format:	1080/59.94p, 1080/59.94i, 1080/23.98PsF*, 720/59.94p*, 480/59.94i, 1080/50p, 1080/50i, 720/50p*, 576/50i
Recording Format:	AVC-Intra200 (option)*1/AVC-Intra100/AVC-Intra50/AVC-LongG50/AVC-LongG25/AVC-LongG12*2/DVCPRO HD/DVCPRO50/DVCPRO/DV formats switchable
Recording Video Signal:	1080/59.94p, 1080/59.94i, 1080/29.97p*, 1080/29.97pN*, 1080/23.98p*, 1080/23.98pN*, 1080/23.98pN*, 720/59.94p*, 720/29.97p*, 720/29.97pN*, 720/23.98p*, 720/23.98pN*, 480/59.94i, 480/29.97p*, 480/23.98p*, 480/23.98pN*, 1080/50p, 1080/50i, 1080/25p*, 1080/25pN*, 720/50p*, 720/25p*, 720/25pN*, 576/50i, 576/25p*
Recording/Playback time:	See page 6 in this catalog for recording times.

## Digital Video

Sampling Frequency:	AVC-Intra200 (option)*1/AVC-Intra100/AVC-Intra50/AVC-LongG50/AVC-LongG25/AVC-LongG12*2/DVCPRO HD: Y: 74.1758 MHz, Pb/Pr: 37.0879 MHz (59.94 Hz) Y: 74.2500 MHz, Pb/Pr: 37.1250 MHz (50Hz) DVCPRO50: Y: 13.5 MHz, Pb/Pr: 6.75 MHz DVCPRO: Y: 13.5 MHz, Pb/Pr: 3.375 MHz
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Quantizing:	AVC-Intra200 (option)*1/AVC-Intra100/AVC-Intra50/AVC-LongG50/AVC-LongG25: 10 bit AVC-LongG12*2/DVCPRO HD/DVCPRO50/DVCPRO/DV: 8 bit
Video Compression Format:	AVC-Intra200 (option)*1/AVC-Intra100/AVC-Intra50: MPEG-4 AVC/H.264 Intra Profile AVC-LongG50/AVC-LongG25/AVC-LongG12*2: MPEG-4 AVC/H.264 DVCPRO HD: DV-Based Compression DVCPRO50/DVCPRO: DV-Based Compression DV: DV Compression

## Digital Audio

Recording Audio Signal:	AVC-Intra200 (option)*1/AVC-LongG50/AVC-LongG25: 48 kHz/24 bit, 4CH AVC-Intra100/AVC-Intra50: 48 kHz/16 bit, 4CH and 48 kHz/24 bit, 4CH switch AVC-LongG12*2/DVCPRO HD/DVCPRO50/DVCPRO/DV: 48 kHz/16 bit, 4CH
Headroom:	18 dB/20 dB switchable menu

## Proxy

Video Compression Format:	MPEG4 Simple Profile, H.264/AVC Baseline Profile, H.264/AVC High Profile
Audio Compression Format:	AAC-LC, Linear PCM
Approx. Recording Time*2:	SHQ 2CH MOV Approx. 25 min, HQ 4CH MOV Approx. 72 min HQ 2CH MOV Approx. 78 min, LOW 2CH MOV Approx. 135 min STD 2CH MP4 Approx. 78 min

## Video Input/Output

SDI IN:	BNC×1 HD SDI: 3G: 0.8 V [p-p], 75 Ω 1.5G: 0.8 V [p-p], 75 Ω SD SDI: 0.8 V [p-p], 75 Ω Switch the menu to use as <VIDEO IN> terminal/ return video input terminal/<GENLOCK IN> terminal
SDI OUT1:	BNC×1 HD SDI: 3G: 0.8 V [p-p], 75 Ω, 1.5G: 0.8 V [p-p], 75 Ω SD SDI: 0.8 V [p-p], 75 Ω
SDI OUT2:	BNC×1 HD SDI: 3G: 0.8 V [p-p], 75 Ω, 1.5G: 0.8 V [p-p], 75 Ω SD SDI: 0.8 V [p-p], 75 Ω
VIDEO OUT:	BNC×1 Composite: 1.0 V [p-p], 75 Ω
HDMI OUT:	HDMI×1 (HDMI type A terminal, not compatible with VIERA Link)

## Audio Input/Output

AUDIO IN: (CH1/CH2)	XLR×2, 3-pin, LINE/MIC/MIC+48V switchable type LINE: 4 dBu (-3 dBu/0 dBu/4 dBu selectable menu) MIC: -60 dBu (-60 dBu/-50 dBu selectable menu) MIC+48V: Phantom +48 V supported, -60 dBu (-60 dBu/-50 dBu selectable menu)
MIC IN:	XLR×1, 5 pin Phantom +48 V (selectable menu), -40 dBu (-50 dBu/-40 dBu selectable menu)
Wireless Slot:	25 pin, D-SUB, -40 dBu, 2CH supported
AUDIO OUT: (CH1/CH2)	XLR×1, 5 pin, equilibrium low impedance 4 dBu (-3 dBu/0 dBu/4 dBu selectable menu)
PHONES Out:	Stereo mini jack × 2
Speaker:	20 mm diameter, round × 1

## Other Input/Output

GENLOCK IN:	BNC×1, 1.0 V [p-p], 75 Ω
TC IN:	BNC×1, 0.5 V [p-p] - 8 V [p-p], 10 kΩ
TC OUT:	BNC×1, 2.0 ±0.5 V [p-p], low impedance
DC IN:	XLR×1, 4 pin, DC 12 V (DC 11.0 V to 17.0 V)
DC OUT:	4 pin, DC 12 V (DC 11.0 V to 17.0 V), maximum output current 1.5 A
REMOTE:	10 pin
LENS:	12 pin
VF:	20 pin
LAN:	100BASE-TX/10BASE-T
USB2.0 (device):	Type B connector, 4 pin
USB3.0 (host):	Type A connector, 9 pin
USB2.0 (host):	Type A connector, 4 pin
LIGHT:	2 pin, DC 12 V (DC 11.0 V to 17.0 V), maximum output current 4.5 A (up to 50 W equivalent)
LCD Monitor:	8.76 cm (3.45 inches) LCD monitor, approx. 921000 dots (16:9)

## Included Accessories

Shoulder strap, Mount cap, CD-ROM

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

\*1: Scheduled for release in the near future. \*2: These are reference values for continuous recording using Panasonic products. The recording time may differ depending on the scene or the number of clips.



# P2 Asset Support System

The free member's service program for P2HD/AVCCAM

## Extensive information for video professionals

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No purchase necessary  
Information services for members

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[http://panasonic.biz/sav/pass\\_e](http://panasonic.biz/sav/pass_e)



## 5 year extended warranty program



### Extended for free upon registration

- \* Availability of this extended service program and service content may depend on country/region and model.
- \* A maximum 5 year or pre-specified hours of operation from the date of purchase, whichever comes first.
- \* Not all repair work is covered by this extended warranty program.

Informative product-related content also available with equipment registration.

Please refer to the latest Non-linear Compatibility Information, P2 Support, Download and Service Information, etc., at the following Panasonic web site.



<http://pro-av.panasonic.net/>

## Notes Regarding the Handling of P2 Files Using a PC

### Mounting and Transferring Files

The PC must be installed with the included P2 driver in order to recognize, copy and transfer P2 files. This driver is also necessary when using the PC card slot and when handling P2 files stored on a hard-disk device, such as P2 store. For other operating requirements, refer to the P2 installation manual. The P2 driver and the P2 installation manual can be downloaded free from a Panasonic website. Visit <http://pro-av.panasonic.net/> and click "P2 Support and Download."

### Preview and Nonlinear Editing

To preview (play) P2 files on a PC, it is necessary to install P2 Viewer Plus software (downloadable for free, for Windows and Mac), both from Panasonic, or P2-compatible editing software available from other companies (for details, visit [http://pro-av.panasonic.net/en/sales\\_o/p2/partners.html](http://pro-av.panasonic.net/en/sales_o/p2/partners.html)). Note that each software places specific requirements on the operating environment, and the operating environment must meet additional requirements to play and edit HD content on Windows PCs and Macs. For P2 Viewer Plus download and operating requirement information, visit <http://pro-av.panasonic.net/>. For operating requirements and details of other P2 editing software, visit the website of the relevant software manufacturer.

### Precautions When Using SD Memory Cards

On the Memory Card Camera Recorder, use SD memory cards that conform to the SD standard, SDHC standard, or the SDXC standard. When performing proxy recording (extra-cost option), use SDHC memory cards, SDXC memory cards, or Panasonic SD memory cards with the class description of class2 or higher. The MMC (Multi Media Card) cannot be used. Be sure to format cards on the Memory Card Camera Recorder before use. In this Memory Card Camera Recorder, memory card of the capacity of SD (8 MB to 2 GB), SDHC (4 GB to 32 GB), and SDXC (32 GB to 128 GB) can be used.

"P2HD", "AVC-Intra", "AVC-LongG", "AVC-Proxy", "DVCPRO HD", "DVCPRO 50" and "DVCPRO" logos are registered trademarks of Panasonic Corporation. SDHC logo and SDXC logo are trademarks of SD-3C, LLC. Quick Time is a trademark of Apple, Inc., registered in the U.S. and other countries.



### [Countries and Regions]

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China	+86 10 6515 8828
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JQA-0443



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