

# Panasonic

# P2HD

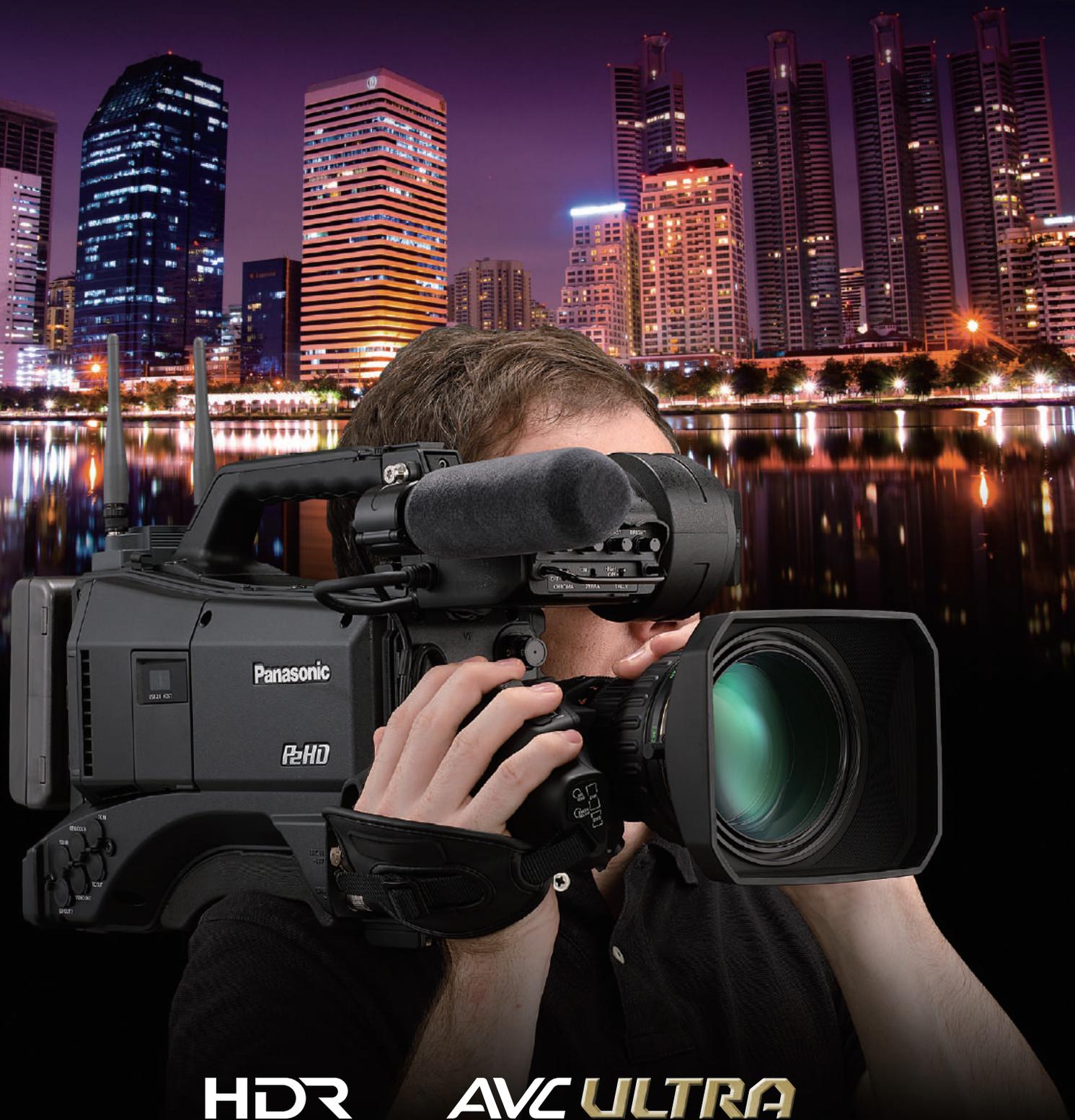
## AJ-PX5100GJ

Memory Card Camera Recorder

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

**FHD/60p/50p Support with High-Sensitivity, Low-Noise HDR Compatibility.**

**Best Standard Performance for High Picture Quality.**



# HDR

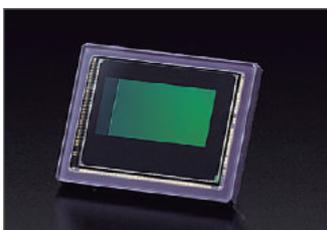
# AVC ULTRA

In addition to high sensitivity 2/3 type 3MOS image sensors and FHD/60p/50p AVC-ULTRA codec, the AJ-PX5100GJ newly supports HDR (HLG) recording and RTMP on-air streaming. This high-end ENG camera recorder fits the multiple usage of the broadcast workflow.



### High Sensitivity, Low Noise 2/3 type 3MOS Image Sensors

The 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

### HDR Compliant (HLG "Hybrid Log-Gamma")

In addition to being equipped with HLG\* images, the following functions assist HLG image acquisition.

- **SDR Monitoring Gamma:** Gamma curves for monitoring HLG images with the SDR viewfinder or other SDR monitor. These gamma curves possess characteristics for expressing the gradation in high-brightness area while maintaining the contrast of ordinary-brightness area.
- **HDR/SDR Simultaneous Output:** Dual SDI can output both HDR (HLG) and SDR (monitoring gamma) simultaneously.
- **One-Push HLG Selector for Viewfinder:** While the viewfinder display with monitoring gamma ordinary, the gradation of high-brightness area can be checked by selecting HLG temporarily.
- **High-Brightness Zebra Display:**

The zebra pattern can be displayed in white-out areas of the viewfinder image.

\* BT.709 color gamut (BT.2020 is not supported)

# HDR



SDR (monitoring gamma) View

HLG View on Viewfinder

### FHD Image Acquisition by High-Quality AVC-ULTRA Codecs

The AVC-ULTRA codecs feature high-quality, high-efficiency H.264 based video compression. The main recording can be selected from high-quality AVC-Intra200 for mastering applications, AVC-Intra100 with FHD/60p/50p support, AVC-Intra50, or AVC-LongG (50/25/12) for FHD10-bit 4:2:2 with affordable bit rate. While offering a low bit rate suitable for previewing, sub recording AVC-Proxy (proxy data) provides an FHD resolution mode that can be used as is for breaking news and similar applications. The conventional DVCPRO codec is also supported.

\* For details, see the table on page 6.

### AVC Intra AVC LongG AVC Proxy HD/SD Multi-Image Format

Images can be acquired by the 1080/60p/50p/60i/50i/30p/24p/25p, 720/60p/50p/30p/24p/25p HD format and SD (480/60i, 576/50i) format. Overseas use is also supported by 59.94Hz/50Hz selection.

\* 60i, 60p, 24p, and 30p are actually recorded at 59.94 Hz, 23.98 Hz, and 29.97 Hz respectively. 24p, 25p, and 30p are all available with native mode recording. For details, see the table on page 6 "Recording Codecs and Video Format".

### Reliable Recording Media: P2 Card/microP2 Card

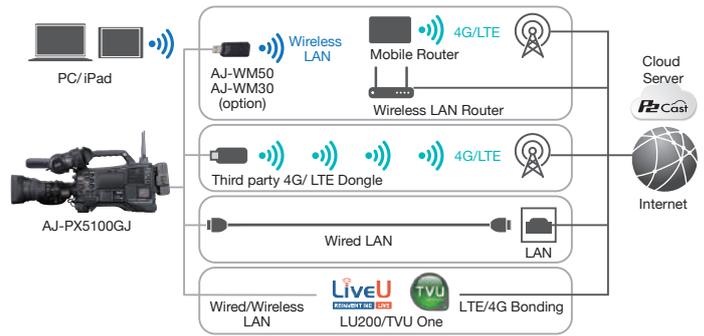
The P2 card, which was designed for broadcast use, features a rugged case and highly reliable connector. The microP2 card features high reliability and a large capacity together with a reduced size and cost. In an emergency, an SD memory card can also be used.



# Advanced Network Functions Support Streaming and P2 Cast

## Easy-to-Use Single Dongle, Flexible Network Connection

Proxy preview, camera remote, and playlist editing can all be done on a PC, Mac, or tablet connected to wireless LAN. When connected to the internet, files can be transferred and live streaming can be done. Nimble operation is possible using the Wireless Module (optional: AJ-WM50/AJ-WM30) or single dongle of the 4G/LTE dongle. Wired LAN connection and LiveU/TVU bonding services are also supported. The connection method is selected to match the usage environment.



## RTMP/RTSP Compatible Full-HD Streaming

Full-HD streaming is possible while images are being acquired. Both RTSP and RTMP streaming methods are compatible. And Facebook, YouTube, and other streaming services are supported. A unique QoS (Quality of Service) mode\*1 optimizes the bit rate according to the network conditions for stable streaming distribution. High performance is also achieved by linking to P2SS (streaming server).\*2

\* For details, see page 6, "Streaming Mode" and "Streaming Output," and the back page, "Notes Regarding Network Functions."

\* It may not be possible to deliver streaming from the unit when services such as Facebook or YouTube stopped or discontinued operation for some reason.

\*1: P2 Streaming Receiver software (Windows only, not supported by Mac; available free of charge) is required for receiving the QoS mode. Please visit Panasonic website <<http://pro-av.panasonic.net/en/download/>>.

\*2: A server with the Streaming Receiver Server Kit (Optional: AJ-SRK001G) installed.



An IoT Solution for News Gathering That Directly Connects On-Site News Acquisition with the Newsroom.

By connecting the AJ-PX5100GJ or other P2cam to the cloud-based P2 Cast integrated control system, a connectivity that approaches live relay can be achieved with automatic operation and camera control for interviews and other ENG. The system also helps to reduce costs.

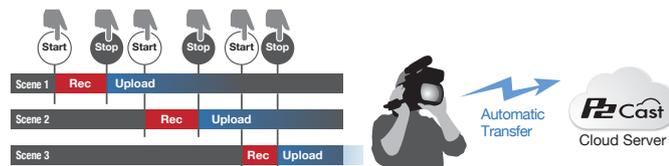
\* For details, see <https://pro-av.panasonic.net/en/p2cast/index.html>



P2 Cast Case Study (US COX MEDIA GROUP)

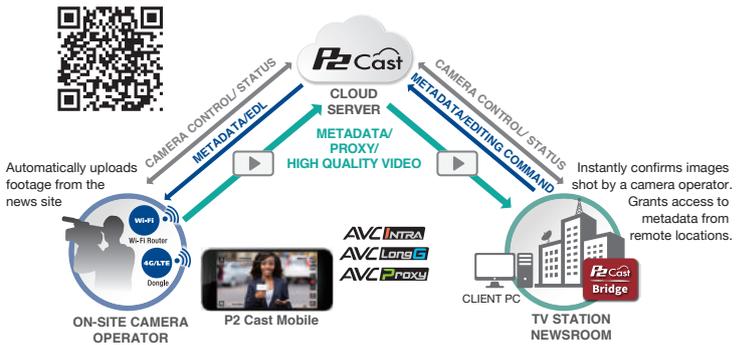
## Automatic Upload from a P2cam to a Cloud Server

Recorded clips are automatically uploaded in the background from a P2cam to a cloud server. The Rec During Upload function also enables recording and playback while transferring data. In the event that the network connection or power is cut off during the data transfer, the transfer operation resumes immediately after the network connection or power is restored. This allows the camera operator to concentrate on shooting without being bothered by uploading operations.



## Near-Live Upload

This is a unique P2cam and P2 Cast solution. In the Near Live mode, image data is split into 2-minute files, and those proxy video data files are automatically and sequentially uploaded to the P2 Cast Cloud. The files can be previewed on a WWW browser. After the shooting/recording is finished, the data is merged into one clip on the P2 Cast Cloud. Then it can be shared on the web.



## News Content Web Sharing, Integrated Camera Control

- Allows sharing of proxy clips on the P2 Cast Cloud by multiple staff members.
- Highlight Editing function reduces the time for previewing, editing and obtaining high-res news image sources.
- Monitors camera recorder status and GPS location information.
- Enables remote metadata editing and remote camera recorder setting.
- P2 Cast Bridge: Connects directly to the newsroom – Nonlinear Editor, News Automation, and Media Asset Management Systems.
- P2 Cast Mobile App: Connects smartphone cameras to P2 Cast/P2SS.

\* Clips for Interval Rec, Loop Rec, One-Clip Rec, and One-Shot Rec are not automatically transferred. The streaming function also does not operate.

\*See the following App Store for information on the P2 Cast Mobile operating environment.

- App Store is a registered service mark of Apple Inc.
- iPhone is a registered trademark of Apple Inc. in the U.S. and other countries.



## P2SS (P2 Streaming Server) Delivers Full-HD Streaming

- Provides stable streaming by original QoS technology.
- Features drag & drop and other intuitive GUI operations.
- Manages 1,000 cameras and monitors 20 cameras/page.
- Allows a maximum of 4 simultaneous streaming outputs.



Display Example

## AJ-SRK001

Streaming Receiver Server Kit (Software Key for Windows; Mac not supported)

\*P2SS is a software product (AJ-SRK001 Streaming Receiver Server Kit) that is installed onto the server. The customer must provide the server.

\*The red front panel is available only in some areas.



# Versatile Broadcast Functions for Shooting and Recording

## High-Quality Camera Functions for Various Situations

- **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.
- **CAC (Chromatic Aberration Compensation):** When using a CAC compatible lens, the small amount of circumjacent chromatic aberration that is not corrected by the lens is compensated by this process.
- **DRS (Dynamic Range Stretcher):** Suppresses blocked shadows and blown highlights to achieve a visually wide dynamic range.
- **Advanced Flash Band Compensation (FBC):** High-precision flash band detection and compensation.
- **Gamma:** Select from 8 modes (HD/SD/FILMLIKE 1/FILMLIKE 2/FILMLIKE 3/FILM-REC/VIDEO-REC/HLG\*) gamma curves.
- **High-Sensitivity DS Gain:** High sensitivity is achieved without increasing noise.\*2 Combined with gain, this enables a maximum +76 dB,\*3 for ultrahigh sensitive recording at minimum subject illumination of 0.004 lx.
- **Digital Zoom:** 2x/3x/4x digital zoom boost.

\*1: In DVCPRO HD recording, HDR information (flags) are not added.

\*2: Due to the use of image accumulation, the number of recorded frames per second decreases. This results in a frame-by-frame playback effect.

\*3: With super gain set at +42 dB and digital super gain (cumulative mode) at +34 dB.

## Monitor/Status Display, QHD High-Resolution Color LCD

Features a QHD (960x540 Pixel) high-resolution color LCD. The status (time code, level meter, media, etc.) view and monitor view (live view, thumbnail, preview) can be switched.



Monitor View

Status View

## Shooting Assist Functions and Easy Operability

- **Focus Assist:** "EXPAND" for center zoomed image and "Focus-in-Red" can be displayed on viewfinder.
- **Shockless AWB:** A smooth transition occurs when switching White Balance modes. This is effective, for example, when moving from outdoors to indoors. It is also equipped with an auto tracking white function.
- **WFM/Vectorscope:** Simplified waveform and vectorscope display.
- **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.
- **Lens Files:** Stores settings for interchangeable lenses.
- **Setup Files:** Camera setup data files can be saved. It makes color setting easier for multiple cameras.
- **Mode Check:** Displays a list of the camera settings on the viewfinder and LCD monitor.
- **Rec Check:** This lets you run a quick playback check of the clip-end.
- **User Buttons:** Functions can be freely allocated to the five User buttons.
- **Back tally, rear tally equipped.** ON/OFF switchable.

## P2 Card/microP2 Card 2x2 Slot

By providing double slots for each the P2 card and the microP2card, an extended recording time is possible and the following recording functions are achieved.\*

- **Dual-codec recording:** Records a low-rate AVC-Proxy file while recording main data in AVC-Intra/AVC-LongG.
- **Simul Rec:** Records simultaneously onto two microP2 cards or P2 cards.
- **Hot-Swap Rec:** Cards can be exchanged while recording, slots can be switched, continuous recording can be performed.

\* Cannot be recorded onto microP2 card and P2 card simultaneously.



Side Camera Operation/LCD Monitor/Card Slot/Recorder Operation

## Versatile Recording Functions

- **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 before you start recording.
- **Loop Rec:** By allocating the open space on two microP2 cards or two P2 cards, the camera continues to record while maintaining a recording of the most recent, pre-determined period.
- **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\*:** Up to 100 memos can be posted onto a clip as bookmarks.
- **Shot Marker\*:** Used to mark clips as OK, NG, etc.
- **Metadata:** Data with information such as the operator's name, shooting location, and text memos can be added.

\* Shot marker and text memo cannot be used in Loop Rec, Interval Rec, or One-Shot Rec.

## High-Quality 24-bit Four Channel Audio Recording

AVC-Intra and AVC-LongG modes support 24-bit/48 kHz four channel digital audio recording.\* Audio source for each channel can be selected for each channel, choosing from mic-in, line-in and wireless receiver.

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

## 3G SDI In/Out and Other Versatile Connectors

Features 3G SDI In/Out connectors supporting FHD/60p/50p for a wide variety of operations, including Line Rec, Backup Rec, and SD Down Convert Output. Also features XLR audio input (2 CH) with +48V Phantom power supply, HDMI OUT, TC IN/TC OUT, GENLOCK IN, USB 3.0 (HOST), and USB 2.0 (DEVICE).



## Versatile IP/iPad Remote Control Compatibility

- **Camera Studio System:** The optional camera extension system (AG-CA300G Camera Adapter and AG-BS300 Base Station) supports low-cost studio integration.
- **10-pin Remote Terminal:** Dedicated cord supplies power to the remote control and composite images to confirm the menu. Camera remote operation is enabled with the optional AG-EC4G Extension Remote Control Unit or AK-HRP200G Remote Operation Panel.
- **IP Remote (LAN Terminal):** A wired LAN connection allows the IP remote compatibility. Remote operation, including menu settings, is possible by using the optional AK-HRP200G Remote Operation Panel.
- **iPad Remote:** P2 ROP APP (downloadable for free from the App Store) for the following iPad\*1 wireless remote control operations: Picture Quality Setting, Rec Start/Stop, Clip Thumbnail Display and Proxy Preview, Metadata Display and Editing.

\* For all remote controllers, only functions that are supported by the AJ-PX5100GJ can be controlled.  
\*1: It supports iOS12.

• The Apple App Store and iPad are service marks or trademarks of Apple Inc. registered in the United States and other countries.



"P2 ROP App" Control from iPad

Picture simulated



Front Operation



Side Terminal 1



Side Terminal 2



Rear Terminal

**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:	SYSTEM MODE = 59.94 Hz 60i/60p/30p/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 SYSTEM MODE = 50 Hz 50i/50p/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. (60i/60p mode) 1/30.0 sec. to 1/3600 sec. (30p mode) 1/24.0 sec. to 1/2880 sec. (24p mode) 1/50.1 sec. to 1/6000 sec. (50i/50p mode) 1/25.0 sec. to 1/3000 sec. (25p mode)
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/AVC-Intra100/AVC-Intra50/ AVC-LongG50/AVC-LongG25/AVC-LongG12/ DVCPRO HD/DVCPRO50/DVCPRO/DV formats switchable
Recording Video Signal:	1080/59.94p, 1080/29.97pN, 1080/23.98pN, 1080/59.94i, 720/59.94p, 720/29.97pN, 720/23.98pN, 480/59.94i, 1080/50p, 1080/25pN, 1080/50i, 720/50p, 720/25pN, 576/50i
Recording/Playback Time*: (When using 64 GB × 1)	AVC-Intra200: Approx. 32 min. AVC-Intra100: Approx. 64 min. AVC-Intra50: Approx. 128 min. AVC-LongG50: Approx. 128 min. AVC-LongG25: Approx. 256 min. AVC-LongG12: Approx. 480 min. DVCPRO HD: Approx. 64 min. DVCPRO 50: Approx. 128 min. DVCPRO/DV: Approx. 256 min.

**Digital Video**

Sampling Frequency:	AVC-Intra200/AVC-Intra100/AVC-Intra50/ AVC-LongG50/AVC-LongG25/AVC-LongG12/DVCPRO HD: Y: 74.1758 MHz, Pb/Pr: 37.0879 MHz (59.94 Hz) Y: 74.2500 MHz, Pb/Pr: 37.1250 MHz (50 Hz) DVCPRO50: Y: 13.5 MHz, Pb/Pr: 6.75 MHz DVCPRO: Y: 13.5 MHz, Pb/Pr: 3.375 MHz
Quantizing:	AVC-Intra200/AVC-Intra100/AVC-Intra50/ AVC-LongG50/AVC-LongG25: 10 bit AVC-LongG12/DVCPRO HD/DVCPRO50/DVCPRO/DV: 8 bit
Video Compression Format:	AVC-Intra200/AVC-Intra100/AVC-Intra50: MPEG-4 AVC/H.264 Intra Profile AVC-LongG50/AVC-LongG25/AVC-LongG12: 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: 48 kHz/24 bit, 4 CH AVC-Intra100/AVC-Intra50: 48 kHz/16 bit, 4 CH and 48 kHz/24 bit, 4 CH switch AVC-LongG50/AVC-LongG25: 48 kHz/24 bit, 4 CH AVC-LongG12/DVCPRO HD/DVCPRO50/DVCPRO/DV: 48 kHz/16 bit, 4 CH
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*:	AVC-G6 2 CH MOV Approx. 13 min., STD 2 CH MP4 Approx. 78 min., HQ 4CH MP4 Approx. 72 min., SHQ 2CH MOV Approx. 25 min., HQ 2CH MOV Approx. 78 min., HQ 4CH MOV Approx. 72 min., LOW 2CH MOV Approx. 135 min.

**Video Input/Output**

SDI IN:	BNC × 1, HD (3 G/1.5 G), SD: 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 (3 G/1.5 G), SD: 0.8 V [p-p], 75 Ω
SDI OUT2:	BNC × 1, HD (3 G/1.5 G), SD: 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, 2 CH 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:	8.89 cm (3.5 inches) QHD color monitor, approx. 1,560,000 dots

**Included Accessories**

Shoulder strap, Mount cap

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

## Recording Codecs and Video Formats

Codec	1080							720					480	576
	60p	50p	60i	50i	30pN <sup>*1</sup>	24pN <sup>*2</sup> / 23.98PsF	25pN <sup>*3</sup>	60p	50p	30pN	24pN	25pN	60i	50i
AVC-Intra200	—	—	✓	✓	✓	✓	✓	✓	✓	—	—	—	—	—
AVC-Intra100	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—
AVC-Intra50	—	—	✓	✓	—	—	—	✓	✓	—	—	—	—	—
AVC-LongG50	—	—	✓	✓	✓	✓	✓	✓	✓	—	—	—	—	—
AVC-LongG25	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	—	—	—
AVC-LongG12	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	—	—	—
DVCPRO HD	—	—	✓	✓	—	—	—	✓	✓	—	—	—	—	—
DVCPRO 50	—	—	—	—	—	—	—	—	—	—	—	—	✓	✓
DVCPRO	—	—	—	—	—	—	—	—	—	—	—	—	✓	✓
DV	—	—	—	—	—	—	—	—	—	—	—	—	✓	✓

"✓" are supported, and "—" are not supported. \*1: 1080/29.97p over 59.94p output \*2: 1080/23.98p over 59.94p output \*3: 1080/25p over 50p output

## AVC-Proxy Recording Modes\*1 (sub)

Recording Mode*2	Video			Audio		
	Resolution	Codec	Bit Rate	Codec	CH	Bit Rate/1 CH
AVC-G6 2CH MOV	1080i mode: 1920 x 1080 720p mode: 1280 x 720	H.264 High Profile	6 Mbps*3	AAC-LC	2 CH	64 kbps
STD 2CH MP4	320 x 240 (QVGA)	MPEG-4 Simple Profile	1500 kbps	AAC-LC	2 CH	64 kbps
LOW 2CH MOV	1080i mode: 480 x 270 480-59.94i mode: 352 x 240 (SIF_NTSC) 576-50i mode: 352 x 288 (SIF_PAL) 1080 60/50p mode: 320 x 180	H.264 Baseline Profile	800 kbps	AAC-LC	2 CH	64 kbps
HQ 2CH MOV	640 x 360	H.264 High Profile	1500 kbps	AAC-LC	2 CH	64 kbps
HQ 4CH MOV	640 x 360	H.264 High Profile	1500 kbps	AAC-LC	4 CH	64 kbps
SHQ 2CH MOV	960 x 540	H.264 High Profile	3500 kbps	Linear PCM	2CH	768 kbps

\*1: Proxy data cannot be recorded when using the Loop Rec or Interval Rec function. \*2: Some recording modes are not supported depending on the main recording format. \*3: For 720/30pN, 720/24pN or 720/25pN, the bit rates become 3 Mbps.

## Streaming Mode Specifications

Recording Signal	Recording Codec	HD Streaming Mode AVC-G6, AVC-G (QoS)	SD Streaming Mode HQ, LOW, SHQ (QoS)
1080/59.94i 1080/50i 720/59.94p 720/50p	AVC-Intra200	—	—
	AVC-Intra100	✓	✓*
	AVC-Intra50	—	✓*
	AVC-LongG50	✓	✓*
	AVC-LongG25	✓	✓*

"✓" are supported, and "—" are not supported. \* [LOW] cannot be selected when 720 mode.

## Recording Format and Streaming Output

Mode	Resolution	Frame Rate	Bit Rate	Codec*1
AVC-G6	1920 x 1080*2	30 fps/25 fps*4	6 Mbps	H.264 High Profile
	1280 x 720*3	60 fps/50 fps		
HQ	640 x 360	30 fps/25 fps	1,500 kbps	H.264 Baseline Profile
LOW	480 x 270	30 fps/25 fps	800 kbps	
AVC-G (QoS)	1920 x 1080*2	30 fps/25 fps*4	Variable depending on the communication band, Maximum 9 Mbps	H.264 High Profile
	1280 x 720*3	60 fps/50 fps		
SHQ (QoS)	960 x 540	30 fps/25 fps	Variable depending on the communication band, Maximum 9 Mbps	H.264 High Profile

\*1: The audio codec is AAC LC 2ch in all streaming mode. \*2: When only the record signal is 1080/59.94i or 1080/50i. \*3: When only the record signal is 720/59.94p or 720/50p. \*4: Output becomes 1080/59.94i or 1080/50i.

## Optional Accessories

As of December 2018



**AJ-WM50**  
**AJ-WM30**  
Wireless Module\*1



**AG-CVF15G**  
87.6 mm (3.45 inches)  
Color HD EVF  
Open two ways for LCD monitor viewing



**AJ-HVF21KG**  
50.8 mm (2 inches)  
HD EVF\*1  
59.94 Hz/50 Hz switchable



**AJ-CVF50G**  
38.1 mm (1.5 inches)  
HD EVF



**AG-EC4G**  
Extension Control Unit



**AK-HRP200G**  
Remote Operation Panel (ROP)



**AU-XPD1**  
Memory Card Drive  
"expressP2 drive"\*2  
**AJ-P2AD1G**  
Memory Card Adapter



**AJ-P2E060FG**  
**AJ-P2E030FG**  
Memory Card  
"P2 card F series"



**AJ-P2M064BG**  
Memory Card  
"microP2 card B series"



**AG-CA300G**  
Camera Adapter  
**AG-BS300**  
Base Station

## Operation-Verified 3rd Party Devices

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

Power Cable for Camera Studio System  
(Between AG-BS300 and AG-CA300G)  
**[Canare]**  
**DC50V10-CE01PS-SC** (164 feet/50 meters)  
**DC100V10-CE01PS-SC** (328 feet/100 meters)

\*1: Not available in some areas.

\*2: Connection of the AU-XPD1 requires two USB cables. Power supply to be connected with an AC adaptor or USB 3.0 port of PC. Requires the optional AJ-P2AD1G Memory Card Adapter to use the microP2 card.

**\* 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 <<https://pro-av.panasonic.net/en/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 <[https://pro-av.panasonic.net/en/sales\\_o/p2/partners.html](https://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 <<https://pro-av.panasonic.net/en/download/>>. For operating requirements and details of other P2 editing software, visit the website of the relevant software manufacturer.

**\*\* Notes Regarding Network Functions**

•**For 4G/LTE connection:** 4G/LTE module is required from a 3rd party. Availability of this function may vary depends on areas. For details, please visit Panasonic website <[https://pro-av.panasonic.net/en/sales\\_o/p2/server/4glt.html](https://pro-av.panasonic.net/en/sales_o/p2/server/4glt.html)>.

•**For wireless LAN connection:** Wireless module (optional, AJ-WM30 or AJ-WM50) is required. For the OS, browser, device compatibility information, see "Service and Support" on the Panasonic website <<https://pro-av.panasonic.net/>>. Some functions are not supported by some devices.

•**For iPad remote control:** The P2 ROP App (downloadable free of charge from the Apple App Store) is required. For details, please visit Panasonic website <[https://pro-av.panasonic.net/en/sales\\_o/p2/ver\\_up/p2rop\\_app.html](https://pro-av.panasonic.net/en/sales_o/p2/ver_up/p2rop_app.html)>.

•**For streaming:** Transfers only to a designated server (one server). The proxy image cannot be recorded while streaming. The streaming function cannot be used together with dual codec recording and simultaneous recording, or with the Rec during Uploading function. For details on downloading and the operating environment of video streaming compatible application software, see "Support & Download" on the Panasonic website <<http://pro-av.panasonic.net/>>. For streaming, 4G/LTE USB modem and PC must be able to access directly each other by Public IP (Global IP). Please contact your provider to get Public IP (Global IP). To display the streaming video using P2 browser, player is required (VLC MEDIA PLAYER for Windows PC, QuickTime Player for Mac). P2 Streaming Receiver software (Windows only, not supported by Mac; available free of charge) is required for receiving the QoS mode. Please visit Panasonic website <<https://pro-av.panasonic.net/en/download/>>.

•**For LiveU and TVU bonding services:** Connection requires communication devices offered by both LiveU and TVU Networks. For details, please visit the following website. <[https://pro-av.panasonic.net/en/sales\\_o/p2/bonding\\_devices/index.html](https://pro-av.panasonic.net/en/sales_o/p2/bonding_devices/index.html)> (Connection Confirmed Bonding Devices)

**Precautions When Using SD Memory Cards**

•Only the DV, DVCPRO, DVCPRO50, and AVC-Intra50 recording formats can be used when using the Memory Card Adapter on P2 Series products. Memory cards of Class 10 or higher are recommended, but recording may not be possible with some cards. •DVCPRO HD and AVC-Intra100 cannot be used. •Memory card data capacity must be 4 GB to 128 GB. •Interval Rec, One-Shot Rec, Loop Rec, or One-Clip Rec cannot be used. •If the reading performance is insufficient during playback, frames might be skipped (Best-effort playback). •When copying clips that extend over two SDHC/SDXC memory cards onto another SDXC/SDHC memory card, the connecting relationship between the cards will not be saved. Under certain conditions, the connecting relationship between original and copied SDXC/SDHC memory cards is saved.

**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/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. A P2 Viewer not compatible with 24 bit audio will not reproduce the sound properly. To play back those clips, use the latest version of P2 Viewer/P2 Viewer Plus. For the latest information on 24 bit compatible P2 equipment and P2 Viewer/P2 Viewer Plus, see "Support & Download" on the Panasonic website <<https://pro-av.panasonic.net/>>.

"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. The terms HDMI and HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. in the United States and other countries. Apple, Quick Time, iPad, iOS 10 iPhone of Apple Inc., registered in the U.S. and other countries. VLC media player is trademark internationally registered by the VideoLAN non-profit organization. TVU is a trademark of TVU Networks Corporation. LIVEU is a trademark of LiveU Ltd.

\*Specifications are subject to change without notice.



Panasonic Corporation  
Connected Solutions Company

2-15 Matsuba-cho, Kadoma, Osaka 571-8503 Japan



For more information, please visit Panasonic web site  
<https://pro-av.panasonic.net/en/qr/>



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



Broadcast and Professional AV Website



Contact Information



Facebook



Mobile App