Panasonic
BUSINESS

P2HD

AJ-PX380G
Memory Card Camera Recorder

AJ-PX380GF
Bundled with the AG-CVF15G Color LCD Viewfinder and FUJINON 17x Zoom Lens

*The UniSlot wireless receiver, microphone and battery pack shown in the photo are optional accessories.

HD COLOR VIEWFINDER

Ultra Lightweight, Ultra High Speed and Ultra High Quality

Built-in Camera Adaptor function. Simple linking with studio workflows.

AVC ULTRA   AVC INTRA   AVC LongG   AVC Proxy   P2   micro P2   SD XC   HDMI
HIGH-DEFINITION MULTIMEDIA INTERFACE

AVC-ULTRA* and Network Operation** Supported.
Camera Adaptor Function Built-In.
Shoulder-Type Camera Recorder Provides Easy,
Cost Efficient Broadcast Quality and Functions.

The shoulder-type AJ-PX380G Camera Recorder raises broadcast picture quality and compact, lightweight mobility while adding functions that enhance network-based workflows and enabling simple, excellent cost performance operation. Its 1/3-type 2.2-megapixel 3MOS sensors achieve high sensitivity, high S/N, and a wide dynamic range. AVC-ULTRA* codecs let you select the most suitable bit rate for your purpose, from high-quality 1080/60p (50p) 4:2:2 10 bit recording to low-rate streaming and FTP transmission, for broadcast-level image acquisition. Network functions support wired LAN, wireless LAN, and 4G/LTE connectivity. A built-in Camera Adaptor function allows simple base station connection with two BNC cables for SDI input. All of this allows the AJ-PX380G to provide simple and cost efficient solution to a wide range of applications, from news gathering to relay, live streaming and studio camera operation.

* AVC-ULTRA is the name of Panasonic's professional video codec family. The AJ-PX380G does not support all of the formats included in the AVC-ULTRA family.
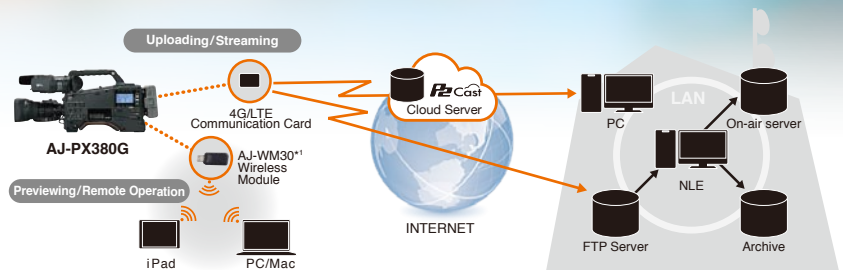** For details, refer to "Notes Regarding Network Functions" on the back page.
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Network Functions** to Expedite News Gathering and Image Acquisition Workflows
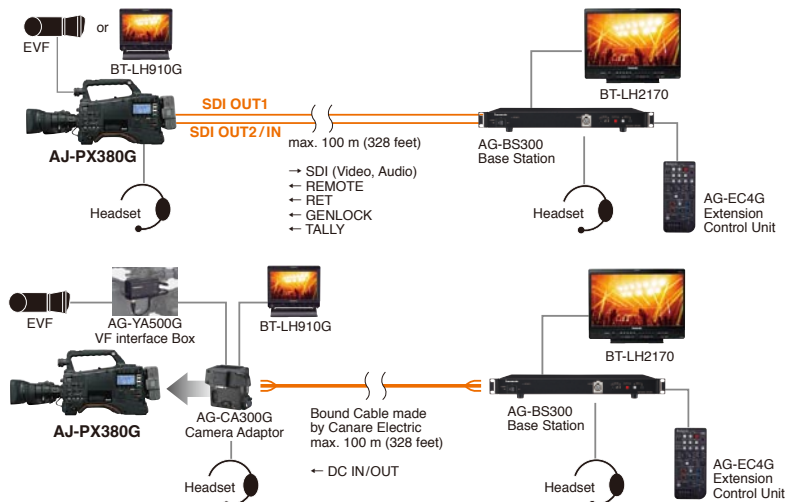
- Clips are automatically uploaded to an FTP server while recording (Rec during Uploading).
- Stable Full-HD images are on-air streamed by a special mode (QoS mode).
- Recorded clips can be previewed and metadata can be checked and edited on a smartphone, tablet, or PC/Mac.
- P2 ROP APP for iPad enables an advanced wireless camera remote function.
- The P2 Cast cloud service[*1] is provided by Panasonic for broadcast and production use.

Uploading/Streaming

AJ-PX380G

4G/LTE Communication Card

AJ-WM30[*1] Wireless Module

Previewing/Remote Operation

iPad   PC/Mac

INTERNET

P2 Cast Cloud Server

PC   On-air server

LAN

NLE

FTP Server   Archive

** For details, please go to Panasonic web page (http://pro-av.panasonic.net/)

*1: Not available in some areas.

Direct Linking for Simpler Studio Camera Workflows

- The built-in CA (Camera Adaptor) function eliminates the need for a Camera Adaptor and VF Interface Box. The return signal can be monitored without VF Interface Box.
- Two BNC cables enable SDI (video/audio) input of REMOTE, INTERCOM, RETURN, GENLOCK, and TALLY communication.
- Maximum extension of 100 m (328 feet). (via 5C-FW BNC cable)

- Also supports conventional systems using the AG-CA300G Camera Adaptor. DC Power can be supplied from the transmission cable.

EVF   or   BT-LH910G

BT-LH2170

SDI OUT1
SDI OUT2 / IN

AJ-PX380G   max. 100 m (328 feet)

AG-BS300 Base Station

Headset

→ SDI (Video, Audio)
← REMOTE
← RET
← GENLOCK
← TALLY

Headset

AG-EC4G Extension Control Unit

EVF   AG-YA500G VF interface Box   BT-LH910G

BT-LH2170

AJ-PX380G   AG-CA300G Camera Adaptor

Bound Cable made by Canare Electric max. 100 m (328 feet)

AG-BS300 Base Station

← DC IN/OUT

Headset

Headset

AG-EC4G Extension Control Unit

Ultra Lightweight

In addition to its compact, lightweight mobility, the camera section offers 3MOS sensors and versatile features to meet broadcast demands for high picture quality and advanced functions

Compact, Lightweight, 1/3 Shoulder-Type

The camera-recorder weighs approximately 2.7 kg (6.0 lb), and only about 4.75 kg (10.47 lb) with the lens and EVF (AJ-PX380GF included) mounted. This combines with the compact body size for excellent mobility in news gathering and other active uses.

1/3-Type Bayonet Mount Interchangeable Lenses

Broadcast and professional 1/3-type zoom lenses available from various manufacturers in a wide range of variations and performance can be used.

High Sensitivity, Low Noise, 1/3-Type 3MOS Sensors

2.2-megapixel 1/3-type 3MOS (RGB) image sensors offer full-pixel HD (1920 x 1080) resolution, F11 (59.94 Hz) or F12 (50 Hz) sensitivity and low noise. They also achieve rich gradation and vibrant color reproduction.
The 1/3-type image sensors achieve the same maximum 600% level of dynamic range as other high-end shoulder-type models.
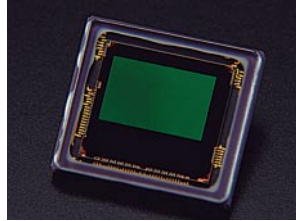
2.2 megapixel 1/3 type
3MOS Image Sensors

600% Dynamic Range

Rich data is captured all the way from highlights to shadows, to render truly realistic images. Features such as color grading also expand post-production flexibility.
• **FILM-REC Gamma:** This function was made possible by the new 600% dynamic range. It achieves a cinematic latitude that exceeds the CINE-LIKE D mode in our previous 1/3-type camera recorder. Gamma curves can be selected from 7 modes (HD/SD/FILMLIKE 1/FILMLIKE 2/FILMLIKE 3/FILM-REC/VIDEO-REC).
• **DRS (Dynamic Range Stretch):** Suppresses blocked shadows and blown highlights to achieve a visually wide dynamic range.

AJ-PX380G
FILM-REC GAMMA

Conventional Model

Comparison of Dynamic Ranges
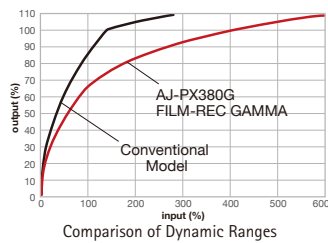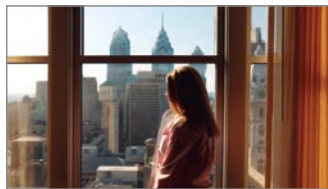
Dynamic Range 300%

Dynamic Range 600%

Built-in Electronic Level Gauge

The electronic level lets you easily confirm camera tilting on the LCD monitor screen. It helps to keep the camera level during handheld shooting, low-angle shooting and high-angle shooting.

Electronic Level Gauge

High-Quality Image Processing and Versatile Image Settings

• **CAC (Chromatic Aberration Compensation):** When using a CAC compatible lens, the small amount of circumjacent chromatic aberration (circumjacent blur) that is not corrected by the lens is compensated by this process.
• **Advanced Flash Band Compensation (FBC):** This function detects and precisely compensates the flash bands (bands of light and dark) that often occur in cameras equipped with a MOS sensor.
• **Setting Items:** H detail, V detail, detail coring, skin tone detail, chroma level, chroma phase, color correction, master pedestal, knee (auto/manual/off), matrix (norm1/norm2/fluo/cine-like), high color, white clip.

Advanced Focus Assist Functions

A variety of focus assist functions support quick and accurate focusing in manual focus mode.
• **Focus-in-Color:** Emphasizes the image areas in focus by marking the edges in red, green or blue.
• **Expand:** Enlarges the center portion for increased visibility.
• **Focus Bar:** The meter graphically displays the focus level.

Focus-in-Color

Expand

Professional Shooting Functions

• **Scan Reverse:** Displays/records images in vertically or horizontally inverted orientation.
• **Digital Zoom:** 2x/4x digital zoom.
• **Electronic Shutter with Slow Shutter Capability:** The shutter speed can be set in seven steps between 1/60 and 1/2000 second (60i/60p mode). It is also equipped with Slow and Synchro Scan (variable) mode. The shutter opening angle (deg value) can be set with synchro scan mode.
• **Shockless Auto White Balance:** A smooth transition occurs when switching White Balance modes. This is effective, for example, when moving from outdoors to indoors.
• **AWB:** Auto White Balance is equipped with ATW (auto tracking). The AWB selector can be switched between three positions: binary (A/B) memory and preset (3200/5600/VAR).
• **Three-position Gain Selector:** The three-position gain selector can be assigned with gain levels selected from a range of −3 dB* to +18 dB to its L, M and H positions.
* −3dB is used for HIGH SENS. mode only.
• **+36 dB Super Gain:** +24 dB/+30 dB/+36 dB Super Gain function enable extra-high sensitivity.
• **Optical ND Filters:** Four-positions (CLEAR, 1/4 ND, 1/16 ND, 1/64 ND).

Color HD Viewfinder/Monitor

The color viewfinder (AG-CVF15G included with the AG-PX380GF) is a 3.45-type, 16:9 color LCD with approximately 920,000 pixels, for LCD monitor use. The eyepiece can be opened and closed in two directions, enabling viewing from the rear and from the side.

User Interface "SmartUI"

The user interface consists of an LCD display and multiple switches. Multiple functions can be set easily with minimal operation.

Versatile Shooting Assist Functions

• **User Buttons:** Frequently used functions can be assigned to three User Buttons.
• **Scene Files/User Files:** Scene files let you select either of six preset files from the menu on SmartUI according to the shooting situation and up to eight settings can be stored onto an SD memory card.
• **WFM/Vectorscope:** Simplified waveform and vectorscope display.
• **Zebra:** Select any two levels from 0% to 109% in 1% steps.
• **Mode check:** Displays a list of the camera settings.
• **Y–GET:** Measures brightness at center and displays numerical data.
• **Marker Display:** Displays a center marker, safety zone marker and frame marker.
• Front mic input volume knob (ON/OFF and CH can be allocated).

Ultra Quality

AVC-ULTRA broadcast codec provides high-quality, 4:2:2 10-bit recording. microP2 card slot included.

AVC-ULTRA Supported as Standard

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 to meet the particular needs of broadcasting and video production. (See the table on the next page.)

AVC Intra An intra-frame compression method that is highly suited to image production, AVC-Intra100/50 codec (10-bit quantization, 4:2:2 sampling).

AVC Long G This inter-frame compression method 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. Three bit rates are available: AVC-LongG50/25/12 Mbps. AVC-LongG25 provides 4:2:2 10 bit 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.* Also includes metadata for efficient offline editing. See the table (AVC-Proxy Recording Modes and Recording Signals) on the next page.

QuickTime

* 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.

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Full Frame Progressive Recording

1080/60p* (50p) full frame progressive recording is supported in the AJ-PX380G. In addition to being able to record with the AVC-Intra100 or AVC-LongG25/LongG12 codec, the AJ-PX380G is capable of camera through output from the SDI OUT 1 terminals.

* 60p is actually recorded at 59.94 Hz.

HD/SD Multi Format/Multi Codec

In addition to 1080/60i, the AJ-PX380G supports 24p, 30p, 60p, and 720p multi HD format and SD recording. 59.94 Hz/50 Hz switchable is convenient for use in productions headed for global use. DVCPRO HD/DVCPRO50/DVCPRO/DV recording is also supported.

* 60i, 60p, 24p and 30p are actually 59.94i, 59.94p, 23.98p and 29.97p.

High-Quality 24 Bit Four Channel Audio Recording

AVC-Intra and AVC-LongG*1 modes support 24 bit/48 kHz/4 CH digital audio recording.*2 (16 bit for AVC-LongG12, DVCPRO HD, DVCPRO 50, DVCPRO and DV). The audio source can be selected for each channel, choosing from mic-in, line-in and wireless receiver.

*1: The AVC-LongG12 mode does not support 24 bit digital audio recording.

*2: 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.

Standard-Equipped microP2/P2 Card Slots

The AJ-PX380G comes with two slots for microP2 cards, the broadcast-use memory card downsized to match the size of a conventional SD Memory Card and one P2 card slot.*1

• **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, resulting in a considerable reduction in cost.

• **Content Protection System (CPS):** A 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.

*1: microP2 and P2 cards cannot be simultaneously recorded on.

*2: 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.

Multifunctional Recording Including Simultaneous Recording

• **Simultaneous Rec:** Records simultaneously onto two microP2 cards for exceptional safety.

• **Dual-codec recording:** Records a low-rate AVC-Proxy file while recording main data in AVC-Intra/AVC-LongG.*1

• **Hot-Swap Rec:** Thanks to the two card slots, you can hot-swap microP2 cards for continuous non-stop recording. Cards can be swapped and slots can be switched while recording.

• **One-Clip Rec Mode:**2 Records up to 99 consecutive cuts as a single clip.

• **Loop Rec:** Maintains a recording of a certain time period through repeated loop recording by sequentially switching between two microP2 cards.

• **Pre Rec:**2 This stores approximately 3 seconds of HD or 7 seconds of SD video and audio data in memory while in standby mode and lets you recover and use the data from the point before you started recording.

• **Interval Rec:** Records intermittently based on a set interval time.

• **One-Shot Rec:** A frame-shot recording function for producing animations.

• **Text Memo:**3 Up to 100 memos can be posted onto a clip as bookmarks.

• **Shot Marker:**3 Used to mark clips as OK, NG, etc.

• **Rec Check:** This lets you run a quick playback check of the clip-end you have just recorded.
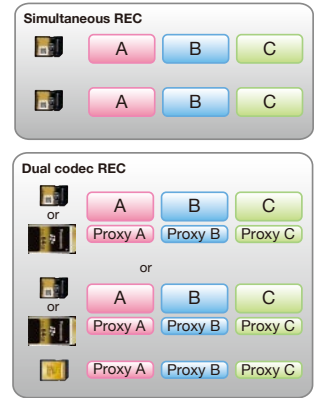
• **Metadata:** Data with information such as operator's name, reporter's name, shooting location, and text memos can be added via an SD Memory Card.

*1: microP2 and P2 cards cannot be simultaneously recorded on.

*2: Not available in 24p, 25p and 30p recording modes.

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

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Simultaneous REC

	A	B	C
	A	B	C

Dual codec REC

| or | A | B | C |
| | Proxy A | Proxy B | Proxy C |

or

| or | A | B | C |
| | Proxy A | Proxy B | Proxy C |

| | Proxy A | Proxy B | Proxy C |

Recording Codecs and Video Formats

Codec	1080							720					480	576
	60p	50p	60i	50i	30pN*1	24pN*2/23.98PsF	25pN*3	60p	50p	30pN	24pN	25pN	60i	50i
AVC-Intra100	√	√	√	√	√	√	√	√	√	√	√	√	−	−
AVC-Intra50	−	−	√	√	−	−	−	√	√	−	−	−	−	−
AVC-LongG50	−	−	√	√	√	√	√	√	√	−	−	−	−	−
AVC-LongG25	√	√	√	√	√	√	√	√	√	−	−	−	−	−
AVC-LongG12	√	√	√	√	√	√	√	√	√	−	−	−	−	−
DVCPRO HD	−	−	√	√	−	−	−	√	√	−	−	−	−	−
DVCPRO 50	−	−	−	−	−	−	−	−	−	−	−	−	√	√
DVCPRO	−	−	−	−	−	−	−	−	−	−	−	−	√	√
DV	−	−	−	−	−	−	−	−	−	−	−	−	√	√

*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 and Recording Signals

Recording Mode*4	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*5		AAC-LC	2 CH	64 kbps
SHQ 2CH MOV	960 x 540	H.264 High Profile	3500 kbps		Linear PCM	2 CH	768 kbps
HQ 2CH MOV	1080i mode: 640 x 360	H.264 High 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)	H.264 Baseline Profile	800 kbps		AAC-LC	2 CH	64 kbps

*4: Some recording modes are not supported depending on the main recording format. *5: For 720/30pN, 720/24pN or 720/25pN, the bit rates become 3 Mbps.

Ultra High Speed

Network functions enable automatic file transfers and on-air streaming. Camera extension systems require no external Camera Adaptor.

Wired/Wireless LAN, 4G/LTE Network Functions**

The standard LAN (Ethernet) port allows network connection via a wired LAN. When the optional AJ-WM30*[1] Wireless Module is installed, the AJ-PX380G gains wireless LAN (IEEE 802.11g/n) connectivity, enabling access to the following functions from a network-connected PC/Mac, tablet device or smartphone. 4G/LTE connection is also possible.

• **Proxy Preview:** Plays back proxy files (AVC-Proxy), downloads file/clip information, displays and allows editing of metadata, and enables addition/deletion of shot marks and text memos.*[2]

• **Camera Remote:** Easy remote operation is possible from various devices by using a web app. The P2 ROP App (available free of charge from the Apple App Store) for iPad enables multifunctional remote operation equivalent to ECU. (See page 8 for details.)

• **Playlist Editing:** Playlists can be created using proxy video with a PC/Mac or tablet. The workflow can be streamlined to be faster by rough editing on location, and then transferring the content files.

• **File Transfer:** When connected via wired/wireless LAN or 4G/LTE, the FTP client function lets you transfer clips from the camera recorder to a network.

** For details, refer to "Notes Regarding Network Functions" on the back page.
*1: Not available in some areas.
*2: Some functions are not supported by some devices.
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Full-HD Streaming Supported**

Full-HD (1920 × 1080) proxy video can be streamed via a network connection (wired LAN, wireless LAN, 4G/LTE network) while recording mainstream video onto a memory card. The video can be received and played on a PC or Mac. "QoS"*[1] stands for Quality of Service. Using this function, the bit rate is optimized to match the network condition and continue streaming distribution even when the communication bandwidth is reduced. This provides solutions for a variety of situations, such as news acquisition. While recording mainstream video, video for newsflashes can be streamed live*[2] to a broadcast station from the field.

** For details, refer to "Notes Regarding Network Functions" on the back page.
*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: The video and audio signals arrive with a delay. The latency varies depending on the network environment and the hardware/software environment of the PC, server, etc.

Streaming Mode Specifications

Mode	Resolution	Frame Rate	Bit Rate	Codec*[1]
AVC-G6	1920 x 1080*[2]	30 fps/25 fps	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	
LOW	480 x 270	30 fps/25 fps	800 kbps	H.264 Baseline Profile
AVC-G (QoS)	1920 x 1080*[2]	30 fps/25 fps	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 6 Mbps	H.264 High Profile

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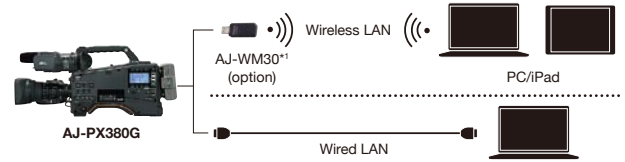*2: When only the record signal is 1080/59.94i or 1080/50i.
*3: When only the record signal is 720/59.94p or 720/50p.

Recording Format and Streaming Output

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-Intra100	✓	✓*
	AVC-Intra50	—	✓*
	AVC-LongG50	✓	✓*
	AVC-LongG25	✓	✓*

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

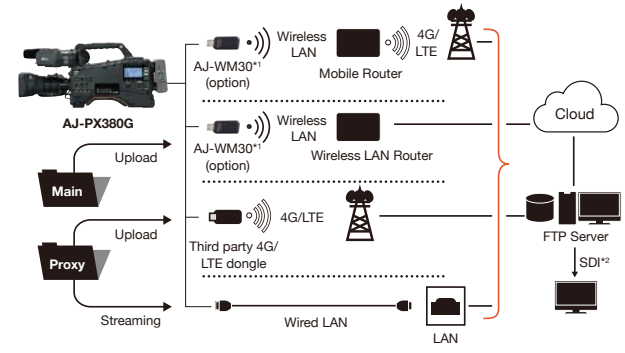## Camera Remote/Playlist Editing (Wireless LAN, Wired LAN)

AJ-WM30*[1] (option)
Wireless LAN
PC/iPad
AJ-PX380G
Wired LAN
PC
*1: Not available in some areas.

< Available functions when direct mode >

Proxy Data Playback
REC Start/Stop
Metadata/Text Memo Input
Thumbnail Display
Playlist Editing

File Upload/Streaming (Wireless LAN, 4G/LTE, Wired LAN)

AJ-PX380G
AJ-WM30*[1] (option)
Wireless LAN
Mobile Router
4G/LTE
Main
Upload
AJ-WM30*[1] (option)
Wireless LAN
Wireless LAN Router
Cloud
Proxy
Upload
Third party 4G/LTE dongle
4G/LTE
FTP Server
SDI*[2]
Streaming
Wired LAN
LAN
*1: Not available in some areas.   *2: Requires the SDI Output Board

Transferring Recorded Clips Automatically: Rec During Uploading Function

The Rec during Uploading function,* which automatically and sequentially transfers recorded clips to an FTP server or cloud service, has also been newly added. Uploading is done in the background, and recording/playback continues during the transfer. In addition to allowing the camera operator to concentrate on shooting without any concerns about uploading, this also boosts the levels of safety and immediacy. The transfer status can be checked on the LCD monitor or viewfinder. If the network is disconnected during transfer, or the power of the camera is turned off, transfer resumes when the connection or power is recovered. Manual transfer of up to 100 registered clips is also possible.

* During simultaneous recording, only recorded clips in slot 1 are automatically transferred. Clips of interval recording, loop recording, one-clip recording or one-shot recording are not transferred automatically. The streaming function is disabled while using the Rec during Uploading function.
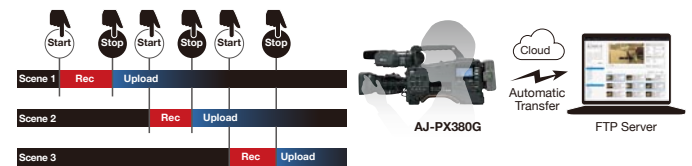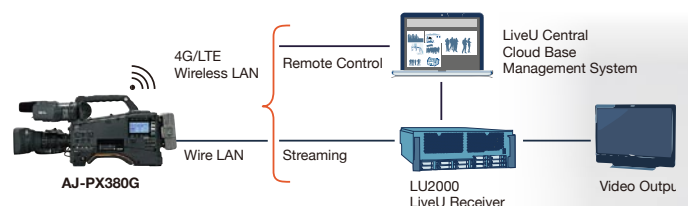

Direct Connection to The LiveU Video Uplink Solution**

The AJ-PX380G supports direct connection to the LiveU Central management platform using public networks, such as 4G/LTE, wireless LAN or wired LAN. There is no need for special uplink equipment. This enables both live previews on the reception side, and on-air streaming.

** For details, refer to "Notes Regarding Network Functions" on the back page.
* A contract with LiveU is required separately. For details, contact LiveU: http://www.liveu.tv
Contact: info_us@liveu.tv (US & Americas), info@liveu.tv (International)

4G/LTE Wireless LAN
Remote Control
LiveU Central Cloud Base Management System
AJ-PX380G
Wire LAN
Streaming
LU2000 LiveU Receiver
Video Output

Built-in Camera Adaptor for Camera Studio Systems

A Camera Adaptor function is built into the AJ-PX380G, eliminating the need for a conventional Camera Adaptor and VF Interface Box when connecting to a Base Station (AG-BS300). Two BNC cables (with maximum extension of 100 m (328 feet)) enable SDI input for camera remote operation by a Controller (AG-EC4G/AJ-RC10G) via the Base Station. RETURN images and INTERCOM are also supported. This provides simple, low-cost studio camera operation.

* Power cannot be supplied from the Base Station to the camera recorder.

Camera Remote System Compatibility*

• **10-pin Remote Terminal:** Camera remote operation is enabled with the optional AG-EC4G Extension Remote Control Unit or AJ-RC10G Remote Control Unit.
• **Wired LAN remote:** A wired LAN connection allows the camera to be remotely controlled by using the optional AK-HRP200G Remote Operation Panel.

* Only functions that are supported by the AJ-PX380G can be controlled.

3G-SDI Output and HD SDI Input*[1]

• **SDI OUT 1:** A 3-Gbps speed 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.
• **SDI OUT 2:** Can be set to HD-SDI or down-converted SD-SDI.
• **SDI IN:** For an external source and return signal input.
• **HDMI OUT:** This terminal allows digital A/V output to a wide range of HD devices.
• **TC IN/OUT:** A built-in SMPTE time code generator/reader. IN/OUT selectable by menu settings.
• **GENLOCK IN:** For synchronized recording with a multi-camera system.
• **USB 2.0:** Equipped with both HOST (for connection to an HDD) and DEVICE (for connection to a PC/Mac) terminals.
• **UniSlot®*[2] compatible wireless receiver slot (two channels).
• **XLR audio input:** Two channel mic/line inputs supporting 48-V phantom power supply.
• Audio output terminals (pin jacks), two channels.
• Multiple battery brand supported, including Anton Bauer.

*1: 3G output for SDI OUT1 only. SDI OUT2/SDI IN (1.5 G IN/OUT), GENLOCK IN/VIDEO OUT and TC IN/OUT terminals are for both input and output. (Menu Selected)
*2: UniSlot® is a trademark of Ikegami Tsusinki Co., Ltd.

The P2 ROP App for Wireless Control using iPad**

The P2 ROP App (downloadable free of charge from the Apple App Store) for iPad is available. It allows an iPad to control functions and setting of the AJ-PX380G remotely via wireless connection. The P2 ROP App can control Focus, Zoom and a variety of settings similar to those of the AG-EC4G Extension Control Unit controls, including picture quality settings and Rec Start/Stop. An easy-to-see value display and easy-to-operate up/down touch keys provide settings and adjustments. A proxy browser is also built into the app so that operator can adjust the setting while checking recorded clips with thumbnails and previewing. Metadata can also be displayed and edited on an iPad to support post production work.

"P2 ROP App" Control from iPad

** For details, refer to "Notes Regarding Network Functions" on the back page.
* iOS7.1 and iOS8.1 are supported.
• The Apple App Store and iPad are service marks or trademarks of Apple Inc. registered in the United States and other countries.

Option and P2 HD Equipment

AG-CVF15G
Color HD View Finder
Open two ways for LCD
monitor viewing

AG-CVF10G
Color HD View Finder
Open one way for LCD
monitor viewing

AJ-MC700P
Microphone Kit

AG-MC200G
XLR Microphone

SHAN-TM700
Tripod Adaptor

AJ-WM30
Wireless Module
*Not available in some areas

AK-HRP200G
Remote Operation Panel

Camera Studio System

AG-CA300G
Camera Adapter

AG-BS300
Base Station

AG-YA500G
VF Interface Box

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

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

AG-EC4G
Extension Control Unit

AJ-P2E064FG
AJ-P2E032FG
Memory Card
(P2 card F series)

(Scheduled for release in
winter, 2015)
AJ-P2E060FG NEW
AJ-P2E030FG NEW
Memory Card
(P2 card F series)

AU-XPD1
Memory Card Drive
One slot expressP2/
P2 card drive, compatible
with microP2 card (using
Memory Card Adaptor)

USB 3.0/2.0

AJ-PCD2G
Memory Card Drive
One slot P2 card drive,
compatible with microP2
card (using Memory Card
Adaptor)

USB 2.0

AJ-P2M032AG
AJ-P2M064AG
Memory Card
"microP2 card"

AJ-MPD1G
Memory Card Drive
Two slots microP2 card
drive.

USB 3.0/2.0

SD/SDHC/SDXC
Memory Card

P2 Viewer Plus
Viewing Software*1
Compatible with both Windows/Mac OS.

AJ-SK001G
(for P2 Viewer plus)
Ingesting Function
Software Key*2
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.

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

SHAN-RC700
Rain Cover
*Not available in some areas

Avid NLE Plug–In Software*2

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

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

AJ-PS003G
Software Key
for AVC-LongG P2 file
export.

AJ-PS004G
Software Key
for AVC-LongG file
import to edit.

Other Manufacturers' Products

Anton/Bauer
Dionic Battery

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

*1: For P2 Viewer Plus download and operating requirement information, see "P2 Viewer Plus" on the Panasonic web site (http://pro-av.panasonic.net/en/sales_o/p2/p2viewerplus/).
*2: For information on purchasing software keys, see "Service and Support" on the Panasonic web site (http://pro-av.panasonic.net/).

Specifications

General

Power:	DC 12 V (11.0 V to 17.0 V)
Power Consumption:	19 W (body only, 1080/60i, AVC-Intra 100 standard recording status, LCD ON) 58W (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. 2.7 kg (6.0 lb) (body only, excluding the battery and accessories)
Dimensions:	144 mm (W) × 267 mm (H) × 348 mm (D) (5–21/32 inches × 10-1/2 inches × 13-11/16 inches) Body only, excluding protrusion

Camera Unit

Pickup Device:	1/3 type 2.2 million pixels, MOS × 3
Lens Mount:	1/3 type bayonet
ND Filter:	1: CLEAR, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND
Gain Setting:	NORMAL mode: 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 15 dB, 18 dB HIGH SENS mode: −3 dB, 0 dB, 3 dB, 6 dB, 9 dB, 12 dB, 15 dB, 18 dB
Super Gain (S.GAIN):	Selectable from 24 dB, 30 dB, 36 dB
Shutter Speed:	60i/60p mode: 1/60 (OFF) sec., 1/100 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec., 1/2000 sec. 30p mode: 1/30 (OFF) sec., 1/50 sec., 1/60 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec. 24p mode: 1/24 (OFF) sec., 1/50 sec., 1/60 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec. 50i/50p mode: 1/50 (OFF) sec., 1/60 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec., 1/2000 sec. 25p mode: 1/25 (OFF) sec., 1/50 sec., 1/60 sec., 1/120 sec., 1/250 sec., 1/500 sec., 1/1000 sec.
Synchro Scan Shutter:	60i/60p mode: 1/60.0 sec. to 1/249.8 sec. 30p mode: 1/30.0 sec. to 1/249.8 sec. 24p mode: 1/24.0 sec. to 1/249.8 sec. 50i/50p mode: 1/50.0 sec. to 1/250.0 sec. 25p mode: 1/25.0 sec. to 1/250.0 sec.
Slow Shutter Speed:	60i/60p mode: 1/15 sec., 1/30 sec. 30p mode: 1/15 sec. 24p mode: 1/12 sec. 50i/50p mode: 1/12.5, 1/12.5 sec. 25p mode: 1/12.5 sec.
Shutter Open Angle:	3.0 deg to 360.0 deg (in 0.5 deg steps, angle display)
Sensitivity:	NORMAL mode: F8 (2000 lx, 3200 K, 89.9% reflection, 1080/59.94i) F9 (2000 lx, 3200 K, 89.9% reflection, 1080/50i) HIGH SENS mode: F11 (2000 lx, 3200 K, 89.9% reflection, 1080/59.94i) F12 (2000 lx, 3200 K, 89.9% reflection, 1080/50i)
Horizontal Resolution:	1000 TV or higher (center)

Memory Card Recorder

Recording Media:	P2 card x1, microP2 card x2
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-Intra100/AVC-Intra50/AVC-LongG50/AVC-LongG25/ AVC-LongG12/DVCPRO HD/DVCPRO50/DVCPRO/DV formats switchable
Recording Video Signal:	1080/59.94p, 1080/59.94i, 1080/29.97pN, 1080/23.98pN, 720/59.94p, 720/29.97pN, 720/23.98pN, 480/59.94i, 480/29.97p, 1080/50p, 1080/50i, 1080/25pN, 720/50p, 720/25pN, 576/50i, 576/25p
Recording/Playback Time*:	AVC-Intra 100/DVCPRO HD 30 GB x 1: Approx. 30 min., 32 GB x 1: Approx. 32 min. 60 GB x 1: Approx. 60 min., 64 GB x 1: Approx. 64 min. AVC-Intra 50/AVC-LongG 50/DVCPRO50 30 GB x 1: Approx. 60 min., 32 GB x 1: Approx. 64 min. 60 GB x 1: Approx. 120 min., 64 GB x 1: Approx. 128 min. AVC-LongG 25/DVCPRO/DV 30 GB x 1: Approx. 120 min., 32 GB x 1: Approx. 128 min. 60 GB x 1: Approx. 240 min., 64 GB x 1: Approx. 256 min. AVC-LongG 12 30 GB x 1: Approx. 225 min., 32 GB x 1: Approx. 240 min. 60 GB x 1: Approx. 450 min., 64 GB x 1: Approx. 480 min.

These are reference values for continuous recording using the Panasonic products. The recording time may differ depending on the scene or the number of clips.

Digital Video

Sampling Frequency:	AVC-Intra100/AVC-LongG25/AVC-LongG12: Y: 148.3516 MHz, P_B/P_R: 74.1758 MHz (1080/59.94p) Y: 148.5000 MHz, P_B/P_R: 74.2500 MHz (1080/50p) AVC-Intra100/AVC-LongG50/AVC-LongG25/AVC-LongG12/DVCPRO HD: Y: 74.1758 MHz, P_B/P_R: 37.0879 MHz (59.94 Hz) Y: 74.2500 MHz, P_B/P_R: 37.1250 MHz (50 Hz) DVCPRO50: Y: 13.5 MHz, P_B/P_R: 6.75 MHz DVCPRO: Y: 13.5 MHz, P_B/P_R: 3.375 MHz
Quantizing:	AVC-Intra100/AVC-Intra50/AVC-LongG50/AVC-LongG25: 10 bit AVC-LongG12/DVCPRO HD/DVCPRO50/DVCPRO/DV: 8 bit
Video Compression Format:	AVC-Intra100/AVC-Intra50: MPEG-4 AVC/H.264 Intra Profile AVC-LongG50/AVC-LongG25/AVC-LongG12: MPEG-4 AVC/H.264 DVCPRO HD/DVCPRO50/DVCPRO: DV-Based Compression DV: DV Compression

Digital Audio

Recording Audio Signal:	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 with menu)

Proxy

Video Compression Format:	H.264/AVC Baseline Profile, H.264/AVC High Profile
Audio Compression Format:	AAC-LC, Linear PCM
Approx. Recording Time*: (1 GB)	AVC-G6 2CH MOV: Approx. 13 min. SHQ 2CH MOV: Approx. 25 min. HQ 2CH MOV: Approx. 78 min. LOW 2CH MOV: Approx. 135 min.

These are reference values for continuous recording using the Panasonic products. The recording time may differ depending on the scene or the number of clips.

Video Input/Output

SDI OUT1:	BNC×1 HD SDi (3G/1.5G), SD SDI: 0.8 V [p-p], 75 Ω
SDI OUT2/IN:	BNC ×1, SDI OUT2, SDI IN (menu selection) (Can be switched to HD SDI/SD SDI on SmartUI.) HD SDi (1.5G), SD SDI: 0.8 V [p-p], 75 Ω
GL IN/VIDEO OUT:	BNC ×1, GENLOCK IN, VIDEO OUT (menu selection) GENLOCK IN: 1.0 V [p-p], 75 Ω VIDEO OUT: 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 CH1/3, AUDIO IN CH2/4:	XLR (3 pin) × 2, LINE/MIC (switch selection) LINE: 0 dBu MIC: −50 dBu/−60 dBu (menu selection), +48 V ON/OFF (switch selection)
MIC IN:	XLR (3 pin) × 1, +48 V supported (selectable menu) −40 dBu/−50 dBu/−60 dBu (selectable menu)
Wireless IN:	25 pin, D-SUB, −40 dBu, 2 CH supported
Audio OUT:	Pin jack x 2 (CH1, CH2), Output level: 600 Ω, 316 mV
Phones OUT:	3.5 mm diameter stereo mini jack ×1
Speaker:	20 mm diameter, round x 1

Other Input/Output

TC IN/OUT:	BNC×1, IN/OUT (menu selection) IN: 0.5 V [p-p] to 8 V [p-p], 10 kΩ OUT: 2.0 ±0.5 V [p-p], Low impedance
LAN:	100BASE-TX/10BASE-T
USB2.0 (device):	Type B connector, 4 pin
USB2.0 (host):	Type A connector, 4 pin
USB2.0 (sub host):	Type A connector, 4 pin (exclusively for wireless module AJ-WM30)
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
EVF:	20 pin

Included Accessories

Shoulder strap, Mount cap

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

Please refer to the latest Non-linear Compatibilty 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/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 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/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 <http://pro-av.panasonic.net/en/sales_o/p2/server/4glte.html>.
•For wireless LAN connection: Wireless module (optional, AJ-WM30) is required. For the OS, browser, device compatibility information, see "Service and Support" on the Panasonic website <http://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 <http://pro-av.panasonic.net/>.
•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, please refer to the Panasonic website <http://pro-av.panasonic.net/en/sales_o/p2/aj-px380g>. 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 <http://pro-av.panasonic.net/en/download/>.

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.

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.

*"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.

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[Countries and Regions]

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ISO 9001
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UKAS MANAGEMENT SYSTEMS
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Factories of AVC Networks Company have received ISO14001:2004-the Environmental Management System certification. (Except for 3rd party's peripherals.)

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