# Panasonic
## CONNECT

**AG-UMR20**
Memory Card Portable Recorder
**AG-UCK20GJ**
Compact Camera Head
(Special Option for the AG-UMR20)

## A Compact Recorder with Versatile Operation for Broadcasting, Video Production, Live Streaming and more.



AG-UCK20GJ
Compact Camera Head

AG-UMR20
Memory Card Portable Recorder

# POVCAM

**AVCHD**™ Progressive    **HDMI**    **SDXC**™    **▷◁ DOLBY AUDIO**™

# "POVCAM" with a Compact, Lightweight,

## A Compact, Lightweight, Free-Style Shooting
Inheriting the features of the first-generation POVCAM plus the operating ease of a touch panel.

## Network Operation for IP Control and IP Streaming
LAN connection enables zooming and real-time video monitoring with a PC or tablet.

## Double SDXC Memory Card Slots
Extended recording capability with large-capacity SDXC Memory Cards and Relay Recording.

## High-Quality, Newly Designed 4K* (UHD) Camera Head
Featuring a high-resolution, progressive MOS sensor and 29.5mm (35 mm equivalent) wide-angle optical 20x zoom lens.

\* 4K acquisition is possible only when connected to the AG-UCK20GJ Compact Camera Head. 4K refers to UHD (3840 x 2160) resolution. The maximum resolution in 4K shooting mode via HDMI/SDI output is FHD (1920 x 1080) 59.94i/50i.

**AG-UCK20GJ**
Compact Camera Head

Optional Cable
(3 m (9.84 ft)/20 m (65.62 ft))

**AG-UMR20**
Memory Card Portable Recorder

HD SDI IN

MIC/LINE

External Source

SDXC/SDHC Memory Card

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Inheriting the compact, lightweight, free-style shooting features of the First-generation POVCAM plus the operating ease and versatility of a touch panel.

### Compact Camera Head for Flexible Installation
• **Free style:** Compact, lightweight design and remote operation allow the camera to be installed in places and angles where it previously couldn't, for free-style operation.
• **Optional cables (3 m (9.84 ft)/20 m (65.62 ft)):** Identical to the first-generation POVCAM cables for easy system replacement.
• **Built-in stereo microphone:** For recording sound with video.
• **Scan Reverse mode:** Image inversion for shooting with a ceiling-mounted Camera Head.
• **Scene files:** Auto and three manual setting files allow scene settings to be switched and saved.

### Compact, Lightweight, Battery-Drive Recorder
• Light weight, handy size. Improved recorder operation with a touch-panel display and large buttons.
• **KEY LOCK function:** Operation buttons can be temporarily disabled to prevent operating mistakes.
• **Battery drive:** Equipped with a battery socket on the rear panel. Large-capacity battery supported (11,800 mAh/8,850 mAh/ 5,900 mAh).
• **DC operation:** Equipped with input terminal for DC12V power supply. AC adaptor also included.
• Power Supply Activation mode on the main unit linked to centralized power supply ON/OFF.
• Threaded sockets provided in two locations, left and right, for arm or rack mounting.

### Touch-Panel LCD Monitor
• **High resolution:** 16:9 screen, 3.5-inch, approx. 1.15-megadot panel
• **Touch panel:** Compact size and multifunctional operating ease. Menu settings and User buttons can be operated by touch.
• **13 User buttons:** In addition to one hard key, 12 User buttons are displayed. Functions can be allocated to each. Four Scene File buttons also allow easy switching of the scene setting.
• **LCD reverse display:** The image displayed on the LCD monitor can be reversed vertically and horizontally. The camera head can be reversed vertically to match installation conditions.
\* When the image is reversed, the recorded image will remain in its original orientation.
• **WFM display:** Waveform (WFM) and Vector Scope (VECTOR) display supported.
• **LCD DTL:** The contours of the display image are emphasized to aid in focusing.
\* Even when the contours are emphasized, the recorded image will not be affected.

An example of user buttons

LCD reverse display

WFM display

# Free Style Shooting and IP Networking Capability

AG-UMR20

HDMI

HD SDI OUT

USB 2.0

LAN

REMOTE

Monitor

TV

PC

PC

Tablet

HUB

Streaming Decoder

FTP Server

Remote Control

## Network Operation for IP Control and IP Streaming
## Versatile System Functions, Including 3G-SDI/HDMI/IP Simultaneous Output

### LAN Terminal for IP Streaming and IP Control

The LAN terminal supports video and audio streaming distribution to networks, as well as file transfers and external control.
Access from PCs and tablets is achieved by web browser, with no special app required. In addition, the PTZ Control Center (free software) can be used for system operation integrated with Panasonic PTZ camera system. Open IP commands make it easy for users to design original systems.

• **IP control:** Remote control from a PC or tablet enables Rec Start/Stop, Clip Delete, and compact Camera Head control (Zoom, Focus, Iris, and Menu Settings).

• **IP streaming:** Video and Audio IP streaming supported. Signals can be received and monitored by PCs, tablets, and IP decoders.

• **File transfer:** Recorded clips can be downloaded by a network PC.

### A REMOTE Terminal that also controls Focus and Iris

Two REMOTE terminals provide fingertip control. In addition to the Rec Start/Stop and Zoom operations a terminal for focus and iris is also provided.

### Simultaneous Output of
### 3G-SDI Input/Output and HDMI Output

• **SDI input:** An SDI input with 3G-SDI support is equipped. This lets you connect to a camera-recorder or other video device and record multi-format images, including FHD (1920×1080) 59.94p/50p/23.98p progressive images. When connected to a standard camera-recorder, Rec Start/Stop control can be used for automatic back-up recording.*

*Linked automatic recording must be supported by the camera-recorder.

• **SDI output:** 3G-SDI compatible SDI output is equipped.
FHD (1920×1080) 59.94p/50p progressive images can be output.

• **HDMI output:** HDMI output of 4K (UHD)*[1]/FHD images is supported. Combined with SDI output and IP streaming, this enables simultaneous output*[2] to maximum of three systems.

*1: HDMI output of 4K (UHD) video is available only for playback of 4K (UHD) recorded clips.

*2: Simultaneous output is not supported for all video formats. Conditions exist for the input/output signals and recording format.

### Versatile Interfaces

• **Audio input:*** A stereo mini-jack is equipped.
LINE IN/MIC IN switchable.

* When connected to the compact camera head, the audio input cannot be used.

• **USB 2.0:** PC connection is possible in Mass Storage mode (miniB terminal).

• Built-in speaker and headphone jack.

## Dimension diagrams

55.6 mm (2-3/16 inches)

140 mm (5-1/2 inches)

53.5 mm (2-3/32 inches)

100 mm (3-15/16 inches)

Panasonic  AG-UMR20

MENU  T  AUDIO MON/ADV − +

REC/PAUSE  SHIFT  MODE  USER 1  W

101 mm (3-31/32 inches)

28.1 mm (1-3/32 inches)

107.5 mm (4-7/32 inches)

16.5 mm (21/32 inches)

M3 x 8 mm (5/16 inches) (four holes)

MIC/LINE IN  CAM REMOTE FOCUS IRIS ZOOM S/S  HD SDI IN OUT  HDMI OUT

Ø64 mm (2-17/32 inches)

40 mm (1-9/16 1inches)

20x OPTICAL ZOOM ø49mm  f=4.08~81.6mm 1:1.8~3.6

72 mm (2-27/32 inches)

52 mm (2-1/16 inches)

131 mm (5-5/32 inches)

Panasonic  4K PROFESSIONAL

Camera head option cable connector

55.6 mm(2-3/16 inches)

14 mm (9/16 inches)

1/4-20UNC (Screw depth 6mm (1/4 inches)

Ø5 (Hole depth 5mm (3/16 inches))

# Double SD Memory Card Slots (SDXC Memory Card) and Relay Recording
# A Memory Card Recorder with High Image Quality and Extended Recording

## AVCHD Acquisition with High-Quality PS/PH Modes

In addition to the HD (1280x720) 59.94p/50p recording and extended recording mode (1440x1080) 59.94i/50i of the first-generation POVCAM, a PS mode capable of FHD (1920×1080) 59.94p/50p/25p* recording is equipped. PH mode for professional video production is also capable of FHD (1920×1080) 59.94i/50i/23.98p* recording. When connected to the Compact Camera Head (optional AG-UCK20GJ), high-resolution 4K (UHD: 3840 x 2160) 29.97p/23.98p/25p* (MP4 format) recording are supported. (See the Recording Format)

*When using the AG-UCK20GJ, 59.94i/50i video signals are output for HD SDI output and HDMI output.

## Double SD Memory Card Slots (SDXC/SDHC Memory Card) NEW

Large-capacity SDXC/SDHC Memory Cards supported. Double SD Memory Card Slots and a Relay Recording function enable two memory cards to be consecutively used. Hot Swapping also makes it possible to exchange cards while recording. Combined with the high data compression efficiency of the AVCHD format, this enables a maximum of 22 hours* of recording in the high-quality PS mode and a maximum of 112 hours* of recording in the extended (HE) mode. SDXC and SDHC Memory Cards can be readily acquired in an emergency situation while shooting on location.

* Maximum recording time when using two 128-GB SDXC Memory Cards.

**Note:** Regardless of the memory card and recording mode, continuous recording that exceeds 10 hours is stopped and automatically restarted, causing the recording to stop for several seconds.

## Versatile Recording Functions for Professional Use

• Producing photos from video: Single-frame image files can be converted from recorded video images. These can be used for high-quality photos.
• Last clip delete: The clip that was recorded immediately before can be deleted with a single touch. This function can also be allocated to a User button.
• Time stamp: Date and time information can be superimposed onto images. Usable for extended research activities and nature observations.

• TC/UB recording: An SMPTE time code generator is built-in.
• Color bar signal output (with 1-kHz audio test tone*).
*When [SYSTEM FREQ] is set to [50 Hz], a 997-Hz test tone is output.
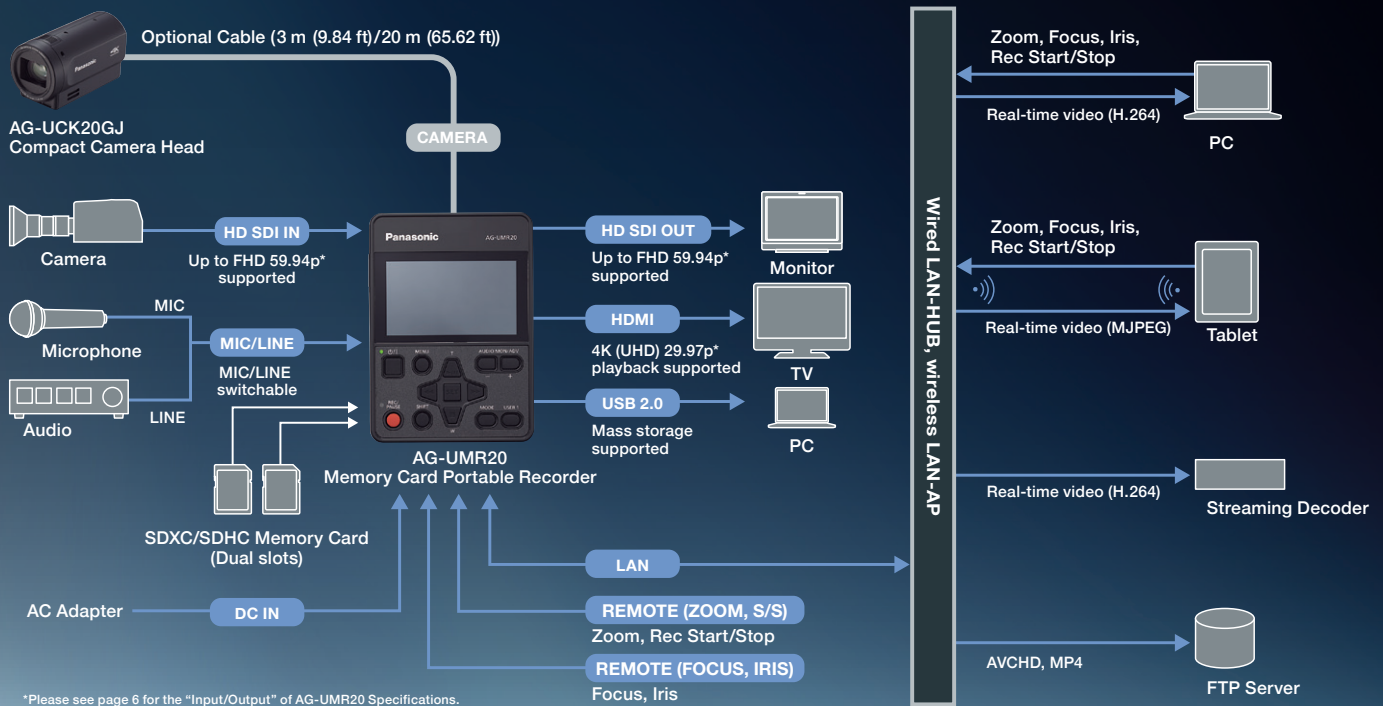
## Playback Functions Convenient for Presentations

• Repeat playback: Continuous, automatic Repeat playback possible for one clip or multiple clips from the thumbnail display. Helpful for demonstrations and presentations.
• Resume playback: When the Stop key is pressed during playback, the stop position is stored in memory. Simply press the Play key to start playing again from the stop position.
* Turning off the power resets the memory. This function is disabled in the factory default setting.
• Clip operation: Fast forward, rewind, clip forward, clip reverse, and frame by frame playback operation are supported.

### Recording Format

| Rec. Mode | | Image Size | Bit Rate | Frame Rate | | Audio | Recording Time*2 (approx.) |
|---|---|---|---|---|---|---|---|
| | | | | 59.94 Hz | 50.00 Hz | | |
| MP4*1 | 4K (UHD) | 3840×2160 | 50 Mbps (VBR) | 29.97p 23.98p | 25p | LPCM 1.5Mbps | 5 hours 20 minutes |
| AVCHD | PS | 1920×1080 | 25 Mbps (VBR) | 59.94p | 50p | Dolby Audio 384kbps | 11 hours |
| | PH | | 21 Mbps (VBR) | 59.94i 23.98p | 50i | | 12 hours 30 minutes |
| | HA | | 17 Mbps (VBR) | 59.94i | 50i | Dolby Audio 256kbps | 17 hours |
| | HE | 1440×1080 | 5 Mbps (VBR) | 59.94i | 50i | | 56 hours |
| | PH | 1280×720 | 21 Mbps (VBR) | 59.94p | 50p | Dolby Audio 384kbps | 12 hours 30 minutes |
| | PM | | 8 Mbps (VBR) | 59.94p | 50p | Dolby Audio 256kbps | 35 hours |

*1: When using the AG-UCK20GJ.   *2: When continuous recording exceeds 10 hours, the recording is stopped and automatically restarted approximately each 10 hours, causing the recording to stop for several seconds.

# System Diagram



**AG-UCK20GJ Compact Camera Head**

Optional Cable (3 m (9.84 ft)/20 m (65.62 ft))

CAMERA

Camera — **HD SDI IN** — Up to FHD 59.94p* supported

Microphone — **MIC** — **MIC/LINE** — MIC/LINE switchable

Audio — **LINE**

**AG-UMR20 Memory Card Portable Recorder** (Panasonic AG-UMR20)

SDXC/SDHC Memory Card (Dual slots)

AC Adapter — **DC IN**

**HD SDI OUT** — Up to FHD 59.94p* supported — Monitor

**HDMI** — 4K (UHD) 29.97p* playback supported — TV

**USB 2.0** — Mass storage supported — PC

**LAN**

**REMOTE (ZOOM, S/S)** — Zoom, Rec Start/Stop

**REMOTE (FOCUS, IRIS)** — Focus, Iris

*Please see page 6 for the "Input/Output" of AG-UMR20 Specifications.

**Wired LAN-HUB, wireless LAN-AP**

Zoom, Focus, Iris, Rec Start/Stop → Real-time video (H.264) — PC

Zoom, Focus, Iris, Rec Start/Stop → Real-time video (MJPEG) — Tablet

Real-time video (H.264) — Streaming Decoder

AVCHD, MP4 — FTP Server

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## 4K (UHD)-Compatible, 29.5 mm Wide-Angle Optical 20x Zoom Lens Compact Camera Head with Improved Image Quality and Functions

### High-Resolution, Progressive MOS Sensor
4K (UHD: 3840 x 2160) 29.97p/23.98p/25p,* FHD (1920×1080) 59.94p/50p/23.98p image acquisition are newly supported. HD image quality also dramatically improved.

* 4K refers to UHD (3840 x 2160) resolution. The maximum resolution in 4K shooting mode via HDMI/SDI output is FHD (1920 x 1080) 59.94i/50i.

### 29.5 mm Wide-Angle Optical 20x Zoom Lens
• **29.5 mm Wide-Angle:** Achieves wide-angle in spite of its compact size.
• **Optical 20x zoom:** Covers a range from 29.5 mm wide angle to 612 mm close ups (35mm equivalent) for various applications.
• **Intelligent Zoom (i.Zoom):** Allows shooting up to 30x in HD format (22x in 4K) with high resolution. Zooms in seamlessly from the optical tele-end.
• **Digital zoom:** This digital zoom (×1.4/×2/×4/×6/×8) allows zooming without any change in brightness. Combining optical zoom + intelligent zoom enables zooming up to a maximum of 240x.*

*When using optical 20x zoom + i.Zoom + digital zoom 8x in HD format. The image quality decreases as the digital zoom magnification increases.

### Stable Images with the Five-Axis Hybrid Image Stabilizer
• **Optical image stabilizer (HD/4K):** Equipped with a powerful optical image stabilizer (OIS) system. Images are strongly corrected even in situations where the camera is unstable, such as when mounted onto an arm.
• **Five-Axis Hybrid Image Stabilizer (HD):** In HD mode, electronic image stabilization is added to the optical image stabilizer (OIS) system to detect and correct motions on five axes, including rolling motion. This is effective when shooting while walking.

### Picture Adjustments like a High-End Cameras
• **16-Axis independent color correction:** This function provides an independent effect to each of the 16 phases and saturation levels of video images. This fine color matching and rendering meet the needs of video production applications.
• **Optical ND filter:** The optical ND filter can be manually switched (CLEAR, 1/4, 1/16, 1/64). Resolution degradation from closing down the iris is prevented even in bright lighting.
• **Shutter:** The Slow Shutter and Synchro Scan functions are supported.

• **Dynamic Range Stretch (DRS):** This function suppresses blocked shadows and blown highlights to produce excellent gradation for each shade when dark, bright and intermediate shades are all contained in the same scene.
• **Gain/iris:** The gain can be increased either with AUTO or 0 dB to 30 dB (in 1 dB units), plus super gain (33 dB/36 dB). Iris adjustment can also be adjusted independently from the gain.
• **White balance:** AWB A, B (two-value memory) / P3200K / P5600K / ATW / VAR (2000 K to 15000 K). A new Variable mode has also been added for a finer setting capability. This allows color reproduction to better match the shooting situation.
• **Image adjustments:** Detail, V-detail, Detail coring, Skin tone detail, Color temperature, Chroma level, Chroma phase, Matrix (Norm/Cine-like/Still-like), Master pedestal, Gamma (HD norm/Cine-like/Still-like), Black gamma, Knee, NR control

### Versatile Camera Functions
• **Auto Focus:** High-speed, high-performance auto focus technologies enable speedy focusing, excellent tracking, and superb stability for higher-quality 4K images.
• **Focus Assist:** Focusing is aided by a Peaking Display (emphasizing in-focus areas by the use of coloring).
• **Push Auto:** Pressing the button during Manual Focus mode temporarily activates Auto Focus.
• **Infrared (IR) Shooting mode:** Helpful for nighttime observation and surveillance.
• **Pre Rec:** Constantly records video and sounds from approximately 3 seconds before ordinary recording starts, to prevent missing decisive moments.
• **Rec Check:** Plays approximately the last 3 seconds that were recorded for confirmation.
• **Zebra:** Select any two levels from among 50% to 105% in 5% steps.
• **Filters supported:** Commercially available lens filters (49 mm diameter) supported.
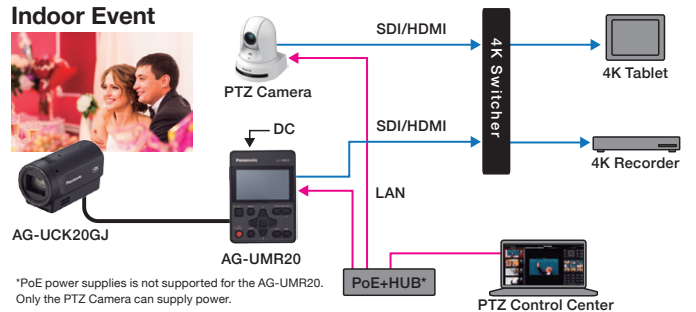
# Applications Using the Compact Camera Head

## For Close-up Face Shots in TV Program Production

By placing Camera Heads on the table during news or information show, close-up shots of the people seated around the table can be taken with highly natural expressions. Several cameras can be mounted even in a small studio, and a single operator can handle them with IP control. This also helps to reduce production costs.
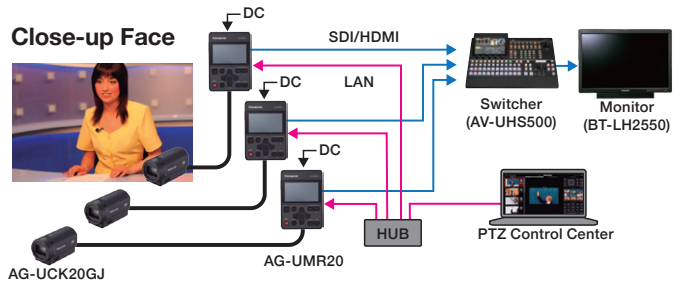
## For Indoor Events such as
## Weddings and Reality TV Shows

By suspending a Camera Head unobtrusively from the ceiling, on a stage, or on a mic stand, images can be recorded that wouldn't be possible by an ordinary camera operator.

## For Nature Observations,
## Documentaries, Sports and Webcasts

While shooting extended images in high-quality 4K (UHD) or Full-HD format, live webcasts can be produced by IP streaming.
The compact Camera Head can be flexibly mounted and combined with IP control for remote shooting, providing the high image quality that is required for video production. Infrared (IR) mode also allows nighttime shooting.
*In the night shooting is required IR light. IR light is recommended the product of the wavelength 800 nm to 950 nm (850 nm is the most suitable). In order to shoot to clear the subject, it also requires a large amount of irradiation of IR light in addition to the performance of the camera.
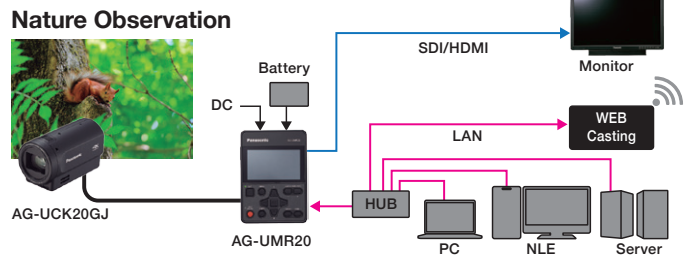
# System Examples with a Standalone Recorder
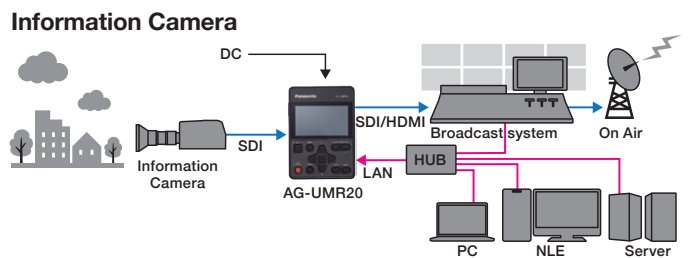
## For Backing Up a Camera-Recorder

The compact, lightweight design and battery drive enable to use in outdoor locations. SDI input allows Full-HD acquisition from a wide variety of sources, including camera-recorders. Back-up recording* is also possible with the Rec Start/Stop function of the camera-recorder connected the Portable Recorder with SDI. Since simultaneous IP/SDI/HDMI output is possible, the Portable Recorder can be used as a signal distributor to monitors, PCs, and tablets.
*Linked automatic recording must be supported by the camera-recorder.
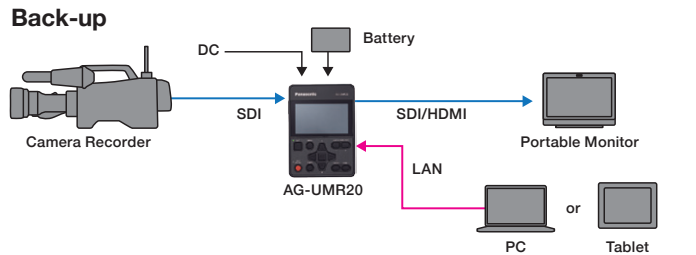
## For Recording and Networking
## from a Information Camera

For recording an existing HD information camera or weather camera.
In addition to the extended recording capability of large-capacity SDXC/SDHC Memory Cards and Double SD Memory Card Slots, the IP streaming function enables use as a network camera.

### Close-up Face



SDI/HDMI · LAN · DC · Switcher (AV-UHS500) · Monitor (BT-LH2550) · PTZ Control Center · HUB · AG-UCK20GJ · AG-UMR20

### Indoor Event



PTZ Camera · SDI/HDMI · 4K Switcher · 4K Tablet · 4K Recorder · DC · LAN · AG-UCK20GJ · AG-UMR20 · PoE+HUB* · PTZ Control Center

*PoE power supplies is not supported for the AG-UMR20. Only the PTZ Camera can supply power.

### Nature Observation



Battery · DC · SDI/HDMI · Monitor · LAN · WEB Casting · HUB · PC · NLE · Server · AG-UCK20GJ · AG-UMR20

### Back-up



DC · Battery · Camera Recorder · SDI · SDI/HDMI · Portable Monitor · LAN · AG-UMR20 · PC · or · Tablet

### Information Camera



DC · Information Camera · SDI · SDI/HDMI · Broadcast system · On Air · LAN · HUB · AG-UMR20 · PC · NLE · Server

# POVCAM-Compatible PC Software
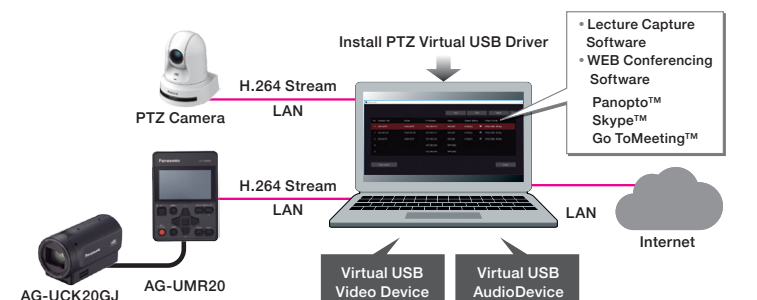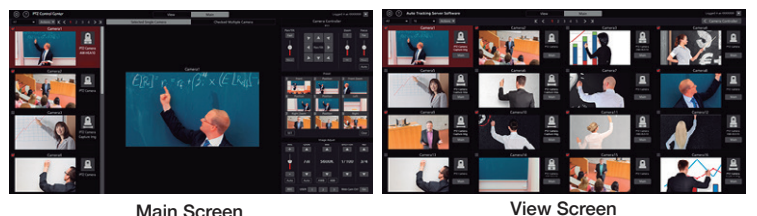
## PTZ Control Center (Free of Charge)

Several PTZ cameras or POVCAMs can be simultaneously controlled by a single PC.

- The images from several PTZ cameras or POVCAMs can be simultaneously checked, managed, and controlled.
- Control items consist of camera control (Focus, Iris, Zoom, Gain, White Balance, Shutter, and ND Filter) and Rec Start/Stop.
- Depending on user authority, functions can be limited and settings data can be moved between PCs.
- Wide-range panning and tilting are supported using panorama (still) images.
- Presets with thumbnail images can be registered, retrieved, and deleted (for up to 9 locations).

## PTZ Virtual USB Driver (Free of Charge)

This driver allows the POVCAM to be used as a USB camera for purposes such as network distribution and conferences.

- Networked PTZ cameras and POVCAMs can be used as USB cameras.
- Up to 5 PTZ cameras or POVCAMs can be registered and controlled.



Main Screen



View Screen



Install PTZ Virtual USB Driver · PTZ Camera · H.264 Stream · LAN · Lecture Capture Software · WEB Conferencing Software · Panopto™ · Skype™ · Go ToMeeting™ · H.264 Stream · LAN · LAN · Internet · Virtual USB Video Device · Virtual USB AudioDevice · AG-UCK20GJ · AG-UMR20

# AG-UMR20 Specifications

## General

| | |
|---|---|
| Power: | DC 7.28 V (with battery), DC 12 V (with AC adaptor) |
| Power consumption: | In standalone condition:<br>1.1 A (with battery), 0.7 A (with AC adaptor)<br>With the optional AG-UCK20GJ Camera Head:<br>2.2 A (with battery), 1.4 A (with AC adaptor) |
| Operating temperature: | 0 °C to 40 °C (32 °F to 104 °F) |
| Operating humidity: | 10 % to 80 % (no condensation) |
| Weight: | Approx. 590 g (1.3 lbs) |
| Dimensions:<br>(W x H x D) | 100 mm x 53.5 mm x 140 mm (excluding protrusion)<br>(3-15/16 inches x 2-3/32 inches x 5-1/2 inches) |

## Memory Card Recorder

| | |
|---|---|
| Recording media: | SDXC memory card (48 GB to 128 GB) ,<br>SDHC memory card (4 GB to 32 GB)<br>MP4: more than Class10, AVCHD: more than Class4 |
| Recording slot: | 2 Slots |
| System format: | 59.94 Hz / 50.00 Hz |
| Motion recording: | Recording system: MP4, AVCHD<br>Recording mode/Recording time:<br>Please see page 3 for the "Recording Format" table |
| Still picture recording: | Recording system: JPEG (DCF/Exif2.2) |

## Digital Video/Digital Audio

| | |
|---|---|
| Output video signal: | 8 bit 4:2:2 |
| Recording video signal: | 8 bit 4:2:0 |
| Video compression: | MP4: MPEG-4, AVCHD: AVC/H.264 High Profile |
| Recording audio signal: | 48 kHz/16 bit 2 CH |
| Audio compression: | MP4: LPCM, AVCHD: Dolby Audio |
| Headroom: | 12 dB |

## Video Input/Output

| | |
|---|---|
| SDI IN: | BNC x 1, 0.8 V [p-p], 75 Ω, 3 G/1.5 G HD SDI supported<br>Input format:1080/59.94p LEVEL-A/LEVEL-B, 1080/50p<br>LEVEL-A/LEVEL-B, 1080/29.97PsF/25PsF/23.98PsF,<br>1080/59.94i/50i, 720/59.94p/50p |
| SDI OUT: | BNC x 1, 0.8 V [p-p], 75 Ω, 3 G/1.5 G HD SDI supported<br>Output format: same as input format |
| HDMI OUT: | Type A connector x 1, VIERA Link not supported<br>Output format: 2160/29.97p/25p/23.98p, 1080/59.94p/50p/<br>29.97p/25p/23.98p/59.94i/50i, 720/59.94p/50p,<br>480/59.94p, 576/50p |

## Audio Input/Output

| | |
|---|---|
| MIC/LINE IN: | 3.5 mm diameter, stereo mini jack (MIC IN and LINE IN)<br>MIC: –60 dBV (sensitivity –40 dB equivalent,<br>0 dB=1 V/Pa 1 kHz), plug in power supported<br>LINE : –10 dBV |
| SDI OUT: | 2 CH (LPCM) , Gain: 0 dB/–6 dB/–12 dB (selectable menu) |
| HDMI OUT: | 2 CH (LPCM) |
| Headphone: | 3.5 mm diameter, stereo mini jack x 1 |
| Speaker: | 20 mm diameter, round x 1 |

## External Terminal

| | |
|---|---|
| CAMERA: | 20 pin dedicated interface |
| LAN: | IP control LAN connector (RJ-45)<br>Straight/cross cable auto-detect function |
| REMOTE: | 2.5 mm diameter stereo mini jack x 1 (ZOOM, S/S)<br>3.5 mm diameter mini jack x 1 (FOCUS, IRIS) |
| USB 2.0: | Type Mini-B connector, mass storage (read/write) |
| DC IN 12 V: | DC 12 V (11.4 V to 12.6 V) EIAJ Type4 |

## Monitor

| | |
|---|---|
| LCD monitor: | 3.5-type LCD monitor, approx. 1,150,000 dots |

## Network

| | |
|---|---|
| Video compression: | Motion JPEG, MP4:MPEG-4, AVCHD:AVC/H.264 High Profile |
| Audio compression: | AAC-LC (48kHz, 16 bit, 2 CH, 128 kbps) |
| Transfer mode:<br>(JPEG) | Resolution 640 x 360:<br>Frame rate (59.94 Hz) : 30 fps, 15 fps, 5 fps<br>Frame rate (50.00 Hz) : 25 fps, 12.5 fps, 5 fps<br>*By the conditions, the frame rate is lower than setting. |
| Transfer mode:<br>(H.264) | Resolution 3840 x 2160/640 x 360:<br>Frame rate (59.94 Hz) : 30 fps, 15 fps, 5 fps<br>Frame rate (50.00 Hz) : 25 fps, 12.5 fps, 5 fps<br>Resolution 1920 x 1080/1280 x 720:<br>Frame rate (59.94 Hz) : 60 fps, 30 fps, 15 fps, 5 fps<br>Frame rate (50.00 Hz) : 50 fps, 25 fps, 12.5 fps, 5 fps<br>*By the conditions, the frame rate is lower than setting. |
| Supported protocol: | TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP,<br>FTP, DHCP, DNS, NTP, IGMP, UPnP, ICMP, ARP,<br>RTSPoverTCP, RTSPoverHTTP, SSL (TLS) , MultiCast/UniCast |
| IP connector cable: | LAN cable* (more than category 5) max. 100 m<br>*STP (Shielded Twisted Pair) recommend |

## Supported OS

| | |
|---|---|
| Windows: | Microsoft® Windows 10 (32 bit/64 bit) Pro,<br>Microsoft® Windows 7 (32 bit/64 bit) Professional SP1[1],<br>Internet Explorer 11[2]<br>*1: Windows XP Compatible Mode cannot be used.<br>*2: Microsoft Edge cannot be used. |
| Mac: | MacOS 10.12, OS X v10.11, Safari10 |

## Supported Browser

| | |
|---|---|
| iOS device: | iPhone/iPad/iPod touch, iOS 10, standard browser |
| Android: | Android OS 4.4/6.0, standard browser |

## Supported Controller

| | |
|---|---|
| Controller: | AW-RP50, AW-RP120G, AK-HRP200G<br>*Depending on a model, upgrade is required. |

## AC Adapter

| | |
|---|---|
| Rated input voltage: | AC 100 V – 240 V, 50 Hz/60 Hz, 1.2 A |
| Input capacitance: | 79 VA (AC 100 V) , 99 VA (AC 240 V) |
| Rated output: | DC 12 V, 3.0 A |
| Operating temperature: | 0 °C to 40 °C (32 °F to 104 °F) |
| Operating humidity: | 10 % to 90 % (no condensation) |
| Weight: | Approx. 225 g (0.496 lbs) |
| Dimensions: | 115 mm (W) x 37 mm (H) x 57 mm (D) (excluding DC code)<br>(4-1/2 inches × 1-7/16 inches × 2-1/4 inches) |

# AG-UCK20GJ Specifications

## General

| | |
|---|---|
| Power: | DC 9 V (supplied from the AG-UMR20) |
| Power consumption: | 0.6 A |
| Operating temperature: | 0 °C to 40 °C (32 °F to 104 °F) |
| Operating humidity: | 10 % to 80 % (no condensation) |
| Weight: | Approx. 325 g (0.717 lbs) |
| Dimensions:<br>(W x H x D) | 64 mm x 72 mm x 131 mm (excluding protrusion)<br>(2-17/32 inches x 2-27/32 inches x 5-5/32 inches) |

## Camera

| | |
|---|---|
| Pickup device: | 1/2.3-type MOS MOS solid state image sensor<br>Total pixels: 4168 x 3062 (approx. 12.76 megapixels) |
| Lens: | Optical image stabilizer lens<br>Zoom: optical 20x motorized zoom<br>Fvalue: F1.8 to F3.6, Focal length: f= 4.08 mm to 81.6 mm<br>35 mm conversion: 29.5 mm to 612.0 mm<br>(Hybrid O.I.S mode "OFF")<br>Filter diameter : 49 mm, ND filter: CLEAR, 1/4, 1/16, 1/64 (built-in)<br>Shortest shooting distance: 1.5 m (4.9 ft) at zoom range,<br>3 cm (0.1 ft) at wide angle<br>IR cut filter : incorporates the ON/OFF control function |
| Zoom: | i. Zoom: x30 (HD), x22 (4K)<br>Digital zoom: x1.4, x2, x4, x6, x8 |
| Image stabilizer: | Optical image stabilizer (HD/4K)<br>5-Axis hybrid image stabilizer (HD) |
| Gain setting: | Automatic, manual 0 dB to 30 dB(1 dB step),<br>Super Gain 33 dB, 36 dB<br>*At auto mode, 3 dB to 30 dB (3 dB steps) can be selected<br>with AGC limit setting. |
| White balance: | ATW, ATW LOCK, AWB A, AWB B, P3200K, P5600K,<br>VAR (2000 K to 15000 K) |
| Shutter speed: | 59.94i/59.94p mode: 1/60 sec., 1/100 sec., 1/120 sec.,<br>1/180 sec., 1/250 sec., 1/350 sec., 1/500 sec., 1/750 sec.,<br>1/1000 sec., 1/1500 sec., 1/2000 sec., 1/3000 sec.,<br>1/4000 sec., 1/8000 sec.<br>29.97p mode: 1/30 sec., 1/50 sec., 1/60 sec., 1/100 sec.,<br>1/120 sec., 1/180 sec. to 1/8000 sec. (same as above)<br>23.98p mode: 1/24 sec., 1/48 sec., 1/50 sec., 1/60 sec.,<br>1/100 sec., 1/120 sec., 1/180 sec. to 1/8000 sec. (same as above)<br>50i/50p mode: 1/50 sec., 1/60 sec., 1/100 sec.,<br>1/125 sec., 1/180 sec. to 1/8000 sec. (same as above)<br>25.00p mode: 1/25 sec., 1/50 sec., 1/60 sec., 1/100 sec.,<br>1/125 sec., 1/180 sec. to 1/8000 sec. (same as above) |
| Slow shutter: | 59.94i/59.94p mode: 1/2 sec., 1/4 sec., 1/8 sec., 1/15 sec., 1/30 sec.<br>29.97p mode: 1/2 sec., 1/4 sec., 1/8 sec., 1/15 sec.<br>23.98p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec.<br>50i/50p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec., 1/25 sec.<br>25.00p mode: 1/2 sec., 1/3 sec., 1/6 sec., 1/12 sec. |
| Synchro scan: | 59.94i/59.94p mode: 1/60.0 sec. to 1/285.6 sec.<br>29.97p mode: 1/30.0 sec. to 1/206.5 sec.<br>23.98p mode: 1/24.0 sec. to 1/280.1 sec.<br>50i/50p mode: 1/50.0 sec. to 1/209.2 sec.<br>25p mode: 1/25.0 sec. to 1/224.3 sec. |
| Minimum illumination: | 0.2 lx (slow shutter: 1/2 sec., gain: +36 dB) |
| Horizontal resolution:<br>(Typ, Center) | 1,300 TV (HDMI output 2160/29.97p, when 25.00p playback)<br>1,000 TV (HDMI output 1080/59.94p, when 50.00p playback) |

## Input/Output

| | |
|---|---|
| AUDIO IN: | Built-in microphone (2 CH stereo) |
| Connecter: | 20 pin dedicated interface (to the AG-UMR20) |

# Options

**AG-C20003G**  3 m (9.84 ft)
**AG-C20020G**  20 m (65.62 ft)
Camera Head Option Cable

**AG-VBR118G** (11,800 mAh)
Battery Pack

**AG-VBR89G** (8,850 mAh)
Battery Pack

**AG-VBR59** (5,900 mAh)
Battery Pack

**AG-BRD50**
Battery Charger

36 mm (1-7/16 inches)
21 mm (27/32 inches)
15 mm (19/32 inches)
Cable Diameter: 6.60 mm (9/32 inches)
Ø9.5 mm (3/8 inches)
Ø10 mm (13/32 inches)
Ø13 mm (17/32 inches)

**Camera Head Option Cable Dimensions**
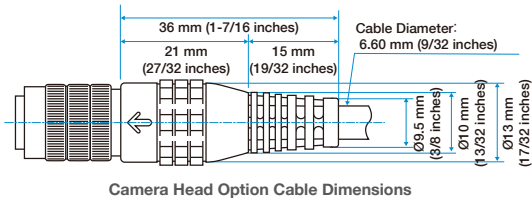
## Battery Pack Charge Capacity and Charge Time

| Product Number | Voltage/Capacity | | | Charge time* |
|---|---|---|---|---|
| AG-VBR118G | 7.28 V | 11800 mAh | 86 Wh | Approx. 280 min. |
| AG-VBR89G | 7.28 V | 8850 mAh | 65 Wh | Approx. 240 min. |
| AG-VBR59 | 7.28 V | 5900 mAh | 43 Wh | Approx. 200 min. |

*When using the AG-BRD50.

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