# Panasonic

## AG-UMR20
Memory Card Portable Recorder
Scheduled for release in May, 2017

## AG-UCK20GJ
Compact Camera Head
(Special Option for the AG-UMR20)
Scheduled for release in May, 2017

## 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    SD XC ™    DOLBY AUDIO ™

# "New 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 Memory Card

---

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. **NEW**
• **Scene files:** Auto and three manual setting files allow scene settings to be switched and saved. **NEW**

### 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/ 5,800 mAh). **NEW**
• **DC operation:** Equipped with input terminal for DC12V power supply. AC adaptor also included. **NEW**
• **Power Supply Activation mode** on the main unit linked to centralized power supply ON/OFF. **NEW**
• Threaded sockets provided in two locations, left and right, for arm or rack mounting.

### Touch-Panel LCD Monitor **NEW**
• **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

1

AG-UMR20

HDMI

HD SDI OUT

USB 2.0

LAN

REMOTE

Monitor

TV

PC

IP Controller

PC

HUB

Streaming Decoder

FTP Server

Tablet

Remote Control

* Pictures simulated.

## 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 `NEW`

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. Control is also possible by a Panasonic remote camera system IP controller for integrated system operation. Open IP commands also make it easy for users to design original systems.

• IP control: Remote control from a PC, tablet or IP controller 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 `NEW`

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 `NEW`

• 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. `NEW`

*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. `NEW`
* When connected the compact camera head, the audio input can not be used.

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

• Built-in speaker and headphone jack.

55.6 mm (2-3/16 inches)

100 mm (3-15/16 inches)

140 mm (5-1/2 inches)

53.5 mm (2-3/32 inches)

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)

Ø64 mm (2-17/32 inches)

72 mm (2-27/32 inches)

40 mm (1-9/16 1inches)

52 mm (2-1/16 inches)

131 mm (5-5/32 inches)

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 `NEW`

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.

QuickTime

## Double SD Memory Card Slots (SDXC 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.

*1: When using two 128-GB SDXC Memory Cards. Extended clips are automatically split every 10 hours, 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. `NEW`
• 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.
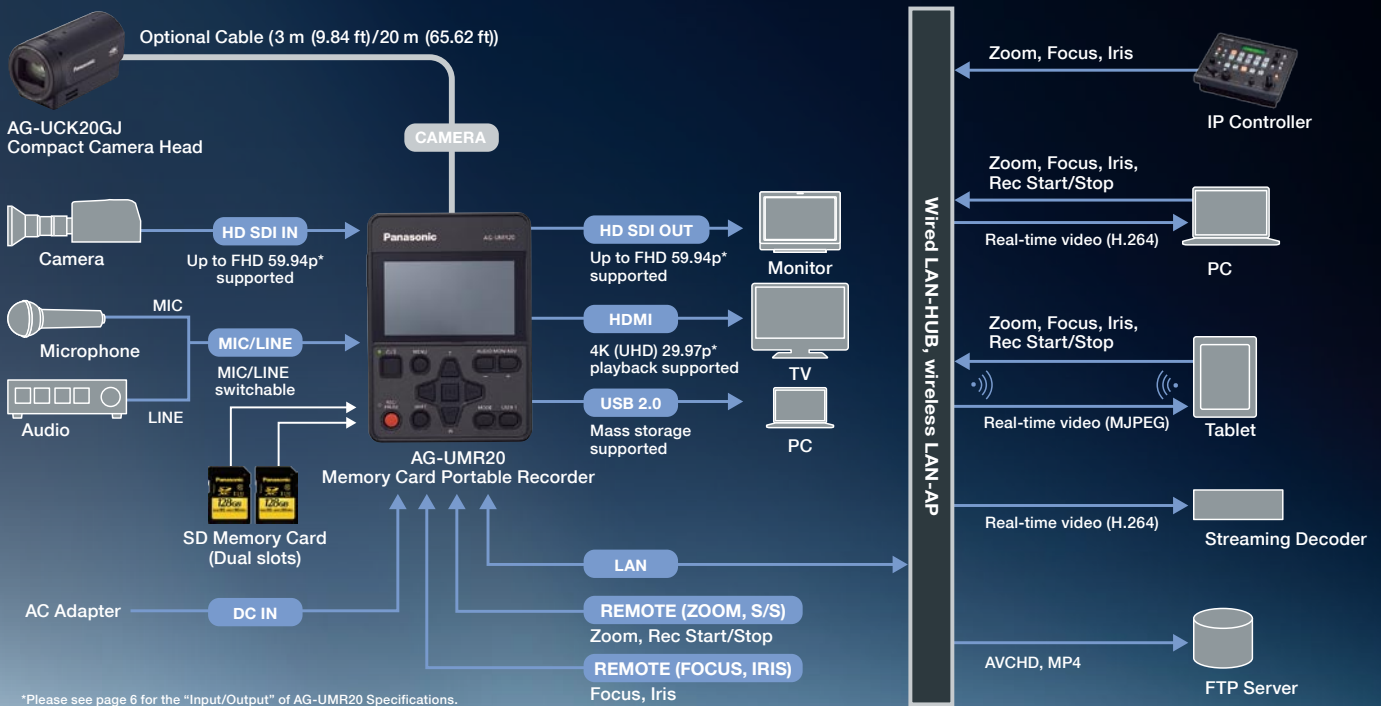
## Playback Functions Convenient for Presentations

• 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 (approx.) |
|---|---|---|---|---|---|---|---|
| | | | | 59.94 Hz | 50.00 Hz | | |
| MP4* | 4K (UHD) | 3840×2160 | 50 Mbps (VBR) | 29.97p 23.98p | 25p | LPCM 1.5Mbps | 5 hour 20 minutes |
| AVCHD | PS | 1920×1080 | 25 Mbps (VBR) | 59.94p | 50p | Doiby Audio 384kbps | 11 hours |
| | PH | | 21 Mbps (VBR) | 59.94i 23.98p | 50i | | 12 hour 30 minutes |
| | HA | | 17 Mbps (VBR) | 59.94i | 50i | Doiby Audio 256kbps | 17 hours |
| | HE | 1440×1080 | 5 Mbps (VBR) | 59.94i | 50i | | 56 hours |
| | PH | 1280×720 | 21 Mbps (VBR) | 59.94p | 50p | Doiby Audio 384kbps | 12 hour 30 minutes |
| | PM | | 8 Mbps (VBR) | 59.94p | 50p | Doiby Audio 256kbps | 35 hours |

*When using the AG-UCK20GJ.

# System Diagram



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

**AG-UCK20GJ** Compact Camera Head

**CAMERA**

Camera — **HD SDI IN** — Up to FHD 59.94p* supported — Panasonic **AG-UMR20** — **HD SDI OUT** Up to FHD 59.94p* supported → Monitor

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

Audio — LINE

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

**USB 2.0** Mass storage supported → PC

**AG-UMR20** Memory Card Portable Recorder

SD Memory Card (Dual slots)

AC Adapter — **DC IN**

**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 → IP Controller

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

# 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 NEW
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 NEW
• **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 NEW
• **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. NEW
• **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. NEW
• **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. NEW
• **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. NEW
• **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). NEW
• **Push Auto:** Pressing the button during Manual Focus mode temporarily activates Auto Focus.
• **Infrared (IR) Shooting mode:** Helpful for nighttime observation and surveillance. NEW
• **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.

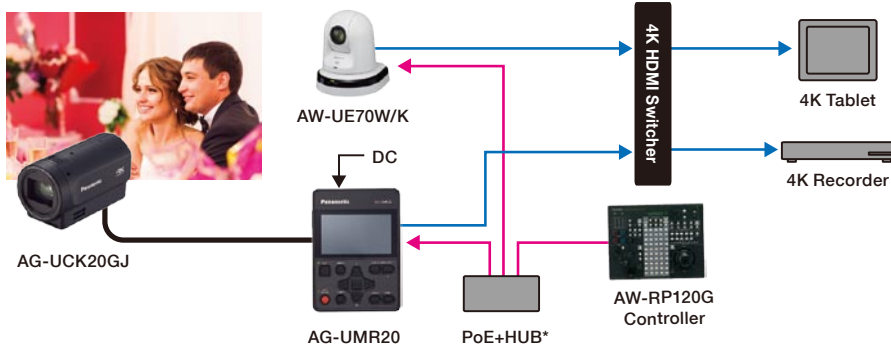# POVCAM Applications Using the Compact Camera Head

**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.



DC

AG-UCK20GJ

AG-UMR20

HUB

AV-HS410 Switcher

BT-LH2550 Monitor

AW-RP120G Controller
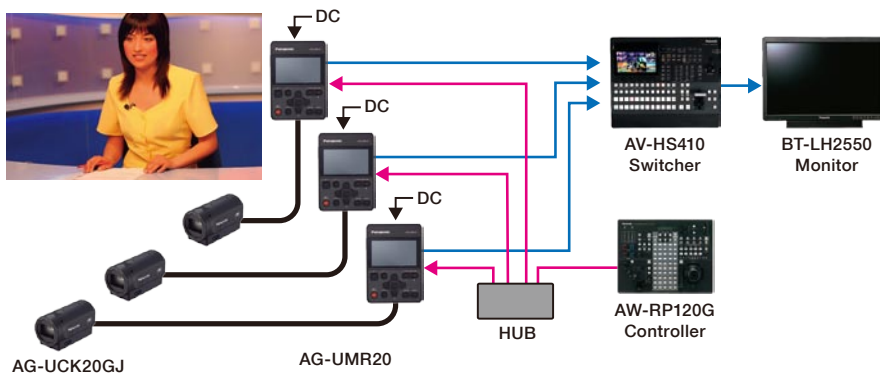
**For Indoor Events Such as Weddings and Reality TV Shows**

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.



AG-UCK20GJ

AW-UE70W/K

DC

AG-UMR20

PoE+HUB*

4K HDMI Switcher

4K Tablet

4K Recorder

AW-RP120G Controller

*PoE power supplies is not supported for the AG-UMR20. Only the AW-UE70W/K can supply power.

**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.
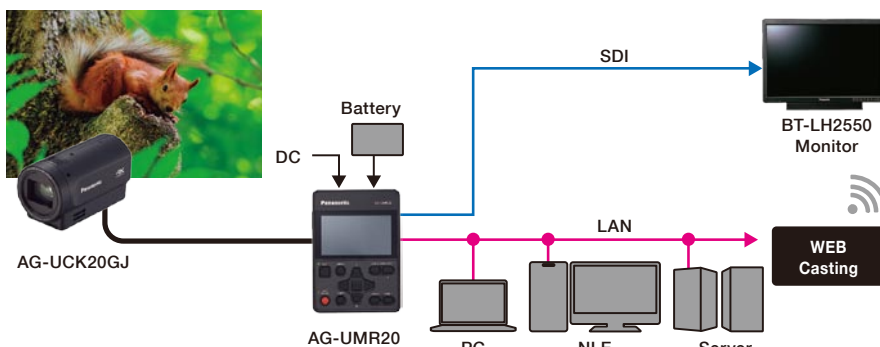
*In the night shooting is required IR light. IR light is recommended the product of the wavelength 800 nm to 950 nm (850 nm is the most suitable). In order to shoot to clear the subject, it also requires a large amount of irradiation of IR light in addition to the performance of the camera.



AG-UCK20GJ

Battery

DC

AG-UMR20

SDI

BT-LH2550 Monitor

LAN

WEB Casting

PC

NLE

Server

# 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.



Camera Recorder

DC

Battery

SDI

AG-UMR20

SDI/HDMI

Portable Monitor

IP (LAN)

PC

or

Tablet
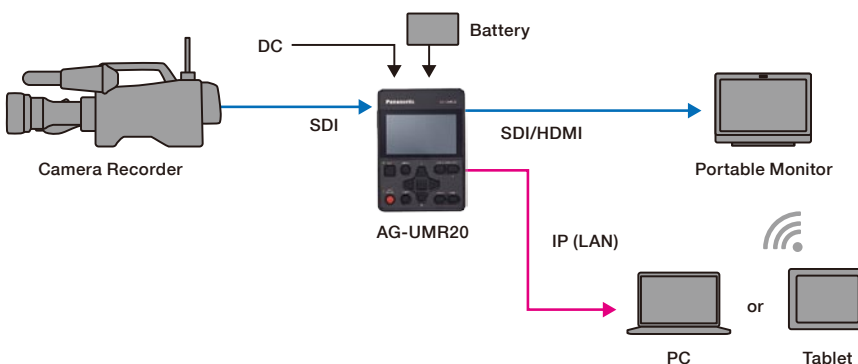
**For Recording and Networking from a Information Camera**

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.



DC

Information Camera

SDI

AG-UMR20

SDI

LAN

Broadcast system

On Air

PC

NLE

Server
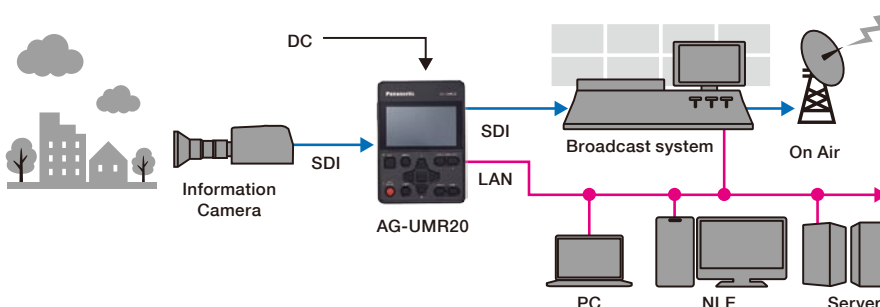
# AG-UMR20 Specifications

## 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 104 mm (excluding protrusion)<br>(3-15/16 inches x 2-3/32 inches x 5-1/2 inches) |

## Memory Card Recorder

| | |
|---|---|
| Recording media: | SDHC memory card (4 GB to 32 GB) ,<br>SDXC memory card (48 GB to 128 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) , switchable gain: 0 dB/−6 dB/−12 dB |
| 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: | 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 |
| 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* (moer than category 5) max. 100 m<br>*STP (Shielded Twisted Pair) recommend |

## Supported OS

| | |
|---|---|
| Windows: | Microsoft® Windows 10 (32 bit/64 bit) , Internet Explorer 11<br>Microsoft® Windows 7 (32 bit/64 bit) SP1, Internet Explorer 11 |
| Mac: | MacOS v10.12 Safari10, OS X v10.11 Safari10 |

## Supported Browser

| | |
|---|---|
| iOS device: | iPhone/iPad/iPod touch, iOS 10, standard browser |
| Android: | Android OS 4.4, 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: approx. 12.76 megapixels) |
| Lens: | 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

SD/SDHC/SDXC Memory Card

**AG-VBR118G** (11,800 mAh)
**AG-VBR89G**   (8,850 mAh)
**AG-VBR59**    (5,900 mAh)
Battery Pack

**AG-BRD50**
Battery Charger

**VW-VBD58** (5,800 mAh)
Battery Pack
**AG-B23**
Battery Charger
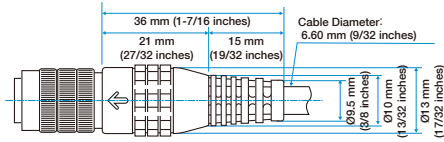
**Camera Head Option Cable Dimensions**

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)

### 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. |
| VW-VBD58 | 7.2 V | 5800 mAh | 42 Wh | Approx. 320 min. |

*When using the AG-BRD50.

---

Please refer to the latest Non-linear Compatibilty Information, Download and Service Information, etc. at the following Panasonic website:

**http://pro-av.panasonic.net/**

---

# Panasonic®

**[Countries and Regions]**

| | |
|---|---|
| Argentina | +54 11 4122 7200 |
| Australia | +61 (0) 2 9491 7400 |
| Brazil | +55 11 3889 4035 |
| Canada | +1 905 624 5010 |
| China | +86 10 6515 8828 |
| Hong Kong | +852 2313 0888 |
| Czech Republic | +421 (0) 903 447 757 |
| Denmark | +45 43 20 08 57 |
| Egypt | +20 2 23938151 |
| Finland, Latvia, Lithuania, Estonia | +358 (9) 521 52 53 |
| France | +33 (0) 1 47 91 64 00 |
| Germany, Austria, Switzerland | +49 (0) 6103 313887 |
| Greece | +30 210 96 92 300 |
| Hungary | +36 (1) 382 60 60 |
| India | +91 1860 425 1860 |
| Indonesia | +65 6277 7284 |
| Iran (Vida) | +98 21 2271463 |
| (Panasonic Office) | +98 2188791102 |
| Italy | +39 02 6788 367 |
| Jordan | +962 6 5859801 |
| Kazakhstan | +7 727 298 0891 |
| Korea | +82 2 2106 6641 |
| Kuwait | +96 522431385 |
| Lebanon | +96 11665557 |
| Malaysia | +60 3 7809 7888 |
| Mexico | +52 55 5488 1000 |
| Mongolia | +976 70115577 |
| Netherlands, Belgium | +31 73 640 2729 |
| New Zealand | +64 9 272 0100 |
| Norway | +47 67 91 78 00 |
| Pakistan | +92 21 111 567 111 |
| Palestine | +972 2 2988750 |
| Panama | +507 229 2955 |
| Philippines | +65 6277 7284 |
| Poland | +48 (22) 338 1100 |
| Portugal | +351 21 425 77 04 |
| Romania, Albania, Bulgaria, Macedonia | +40 (0) 729 164 387 |
| Russia & CIS | +7 495 9804206 |
| Saudi Arabia | +966 (1) 4790499 |
| Singapore | +65 6277 7284 |
| Slovak Republic, Croatia, Serbia, Bosnia, Montenegro, Slovenia | +421 (0) 903 447 757 |
| South Africa | +27 11 3131622 |
| Spain | +34 (93) 425 93 00 |
| Sweden | +46 (8) 680 26 41 |
| Taiwan | +886 2 2227 6214 |
| Thailand | +662 731 8888 |
| Turkey | +90 216 578 3700 |
| U.A.E. (for All Middle East) | +971 4 8862142 |
| Ukraine | +380 44 4903437 |
| U.K. | +44(0)1344 70 69 13 |
| U.S.A. | +1 877 803 8492 |
| Vietnam | +65 6277 7284 |

ISO 14001
JACO
JAPAN AUDIT AND CERTIFICATION ORGANIZATION FOR ENVIRONMENT AND QUALITY
EC98J2010

UKAS MANAGEMENT SYSTEMS
051

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