Panasonic

i-PRO SmartHD

Onvif

WV-ST165   **WV-ST162**

HD 720 High Definition (WV-ST165)   day/night

H.264 / JPEG

HD / 1,280 x 960 H.264 Pan-tilt Network Camera (WV-ST165)
SVGA / 800 x 600 H.264 Pan-tilt Network Camera (WV-ST162)

Key Features

- 720p HD images up to 30 fps (WV-ST165)
- 1.3 Megapixel high sensitivity MOS Sensor
- Super high resolution at SVGA/800 x 600 created by 1.3 Megapixel high sensitivity MOS Sensor (WV-ST162)
- Multiple H.264 (High profile) streams and JPEG streams ensure simultaneous real time monitoring and high resolution recording by "UniPhier®", Panasonic's proprietary System LSI platform.
- Full frame (Up to 30 fps) transmission at 1,280 x 960 image size (WV-ST165)
- Full frame (Up to 30 fps) transmission at SVGA (800 x 600) image size (WV-ST162)
- Wide Dynamic Range and ABS (Adaptive Black Stretch) technologies deliver wider dynamic range compared with conventional cameras.
- Face Wide Dynamic Range technology ensures clear face image.
- High sensitivity with Day & Night (Electrical) function: 0.6 lx (Color), 0.5 lx (B/W) at F2.2
- Digital Noise Reduction: 3D-DNR ensures noise reduction in various conditions.
- Progressive scan ensures clear images with less motion blur and no tearing even when the subject is moving.
- Electronic sensitivity enhancement: Auto (Up to 16x) / OFF
- Selectable light control modes: Indoor scene (50 Hz) / Indoor scene(60Hz) / ELC (maximum exposure time)
  Indoor scene (50 Hz/60Hz): Flicker caused by fluorescent lightning will be automatically compensated.
  ELC (maximum exposure time): The lightning control will be automatically performed by adjusting shutter speed in the range of ELC.
- 2x extra zoom at VGA resolution
- 8x digital zoom controlled by browser
- VMD (Video Motion Detection) with 4 programmable detection areas, 15 steps sensitivity level and 10 steps detection size
- Privacy Zone can mask up to 2 private areas, such as house windows and entrances/exits.
- Camera title display: Up to 20 alphanumeric characters on the browser
- Alarm sources including VMD and Panasonic alarm command can trigger actions such as FTP image transfer, E-mail notification, Indication on browser, and Panasonic alarm protocol output.

- JPEG Image compression ratio can be changed by alarm so that higher quality image can be provided.
- Prioritized stream control: One of the video streams can be prioritized when multiple recorders or client PCs are accessing the camera so that the recorder or the client PC can maintain the frame rate.
- SDHC/SD Memory card slot for manual recording (H.264 / JPEG), alarm recording (H.264 / JPEG) and backup upon network failure (JPEG)
- H.264 max. bit rate/client and Total bit rate control allows flexible network traffic management. Frame rate priority mode controls bit rate and compression ratio to provide the specified frame rate.
- Internet mode: H.264 images can be transmitted over HTTP protocol.
- Multi-language: English / Italian / French / German / Spanish / Russian / Chinese / Japanese
- IPv4/IPv6 protocol supported
- Supports SSL, DDNS (viewnetcam, RFC2136)
- Still images (JPEG) can be viewed on mobile phones via Internet.
- Onvif compliant model
- Pan-tilt and Preset Map Shot function realizes wide range monitoring.(Horizontal angle:180° Vertical angle 123°)
- Easy installation: Easy to adjust directions.
- Interactive communication with audio: By using the audio output connector receiving audio from the cameras on a PC and transmitting audio from the PC to the cameras is available.
- Best effort on Transmission priority: In accordance with the network bandwidth, H.264 images will be transmitted with the bit rate varying between the maximum and minimum bit rates that are set for "Max bit rate (per client)".

Standard Accessories

- Installation Guide .... 1 pc.
- CD-ROM*1.....................................1 pc.
- Code label*2...................................1 pc.
- Flexible Stand ....1 pc.
- SD Card Cover ....1 pc.
- Power cable plug ....1 pc.

*1 The CD-ROM contains the operating instructions and different kinds of tool software programs.
*2 This label may be required for network management.
   The network administrator shall retain the code label.

Specifications

TV System		NTSC	PAL
Camera	Image Sensor	1/4 type MOS Sensor	
	Effective Pixels	Approx. 1.3 megapixels	
	Scanning Mode	Progressive	
	Scanning Area	3.52 mm (H) x 2.64 mm (V) (7/50" (H) × 1/10" (V))	
	Minimum Illumination	Color: 0.6 lx (F2.2, Auto slow shutter: Off (1/30s), Gain:On(High))	
		Color: 0.038 lx (F2.2, Auto slow shutter: Max. 16/30s, Gain:On(High)) [1]	
		BW: 0.5 lx (F2.2, Auto slow shutter: Off (1/30s), Gain:On(High))	
		BW: 0.031 lx (F2.2, Auto slow shutter: Off (16/30s), Gain:On(High)) [1]	
	White Balance	AWC (2,000 ~ 10,000 K), ATW1 (2,700 ~ 6,000 K), ATW2 (2,000 ~ 6,000 K)	
	Light Control Mode	Indoor scene (50 Hz / 60 Hz) / ELC	
	Shutter Speed	ELC (1/30 s), ELC (3/100 s), ELC (3/120 s), ELC (2/100 s), ELC (2/120 s), ELC (1/100 s), ELC (1/120 s), ELC (1/250 s), ELC (1/500 s), ELC (1/1,000 s), ELC (1/2,000 s), ELC (1/4,000 s), ELC (1/10,000 s)	
	Wide Dynamic Range	ON / OFF	
	Face Wide Dynamic range	ON / OFF	
	Adaptive Black Stretch	ON / OFF	
	AGC	ON (HIGH) / ON (MID) / ON (LOW) / OFF	
	Electronic Sensitivity UP	OFF (1/30 s), Max. 2/30 s, Max. 4/30 s, Max. 6/30 s, Max. 10/30 s, Max. 16/30 s	
	Day & Night(electrical)	OFF / AUTO	
	Dynamic Range	24 dB typ. (WDR: ON, Light Control: ELC)	
	Digital Noise Reduction	HIGH / LOW	
	Video Motion Detection	ON / OFF, 4 areas available	
	Privacy Zone	ON / OFF (up to 2 zones available)	
	Camera Title (OSD)	Up to 20 characters (alphanumeric characters, marks) , On/Off	
Lens	Focal Length	1.95 mm	
	Zoom Ratio	Extra zoom: 2x (at VGA resolution)	
	Angular Field of View	Horizontal: 85 °, Vertical: 68 °	
	Maximum Aperture Ratio	1 : 2.2	
	Focusing Range	0.5 m ~ ∞	
Pan and Tilt	Panning Range	-47.5°- +47.5°	
	Panning Speed	Manual: Approx. 5 °/s - 80 °/s, Preset: Up to approx. 80 °/s	
	Tilting Range	-45° to +10°	
	Tilting Speed	Manual: Approx. 5 °/s - 80 °/s, Preset: Up to approx. 80 °/s	
	Number of Preset Positions	64	
	PTZ Position Display	ON / OFF	
	Self Return	10 s/ 20 s/ 30 s/ 1 min/ 2 min/ 3 min/ 5 min/ 10 min/ 20 min/ 30 min/ 60 min	
	Map Shot	Preset map-shot	
Browser GUI	Camera Control	Brightness, AUX ON / OFF	
	Display Mode	Spot, Quad: Image from 16 cameras can be displayed in 4 different Quad screens or 16 split screen (JPEG only). 20 characters camera title available.	
	Zoom	extra zoom(1x - 2x) and the electronic zoom (higher zoom factors, up to 16x).	
	Camera Title	Up to 20 alphanumeric characters	
	Clock Display	Time: 12H/24H, Date: 5 formats on the browser, Summer time (Manual)	
	Alarm Control	Reset	
	One Shot Capture	A still picture will be displayed on a newly opened window.	
	Audio	Mic (Line) Input: ON / OFF Volume adjustment: Low / Middle / High, Audio Output: ON / OFF Volume adjustment: Low / Middle / High	
	SD Memory Data Download	Still or motion Images recorded in the SDHC/SD memory card can be downloaded.	
	GUI/Setup Menu Language	English, Japanese, Italian, French, German, Spanish, Chinese, Russian	
	System Log	Up to 100 (Internal), Up to 4,000 (SDHC/SD memory when the recording format is set to JPEG.) error logs	
	Supported OS [2] [3]	Microsoft® Windows® 8, Microsoft® Windows® 7, Microsoft® Windows Vista®, Microsoft® Windows® XP SP3	
	Supported Browser	Windows® Internet Explorer® 10.0 (32 bit), Windows® Internet Explorer® 9.0 (32 bit), Windows® Internet Explorer® 8.0 (32 bit), Windows® Internet Explorer® 7.0 (32 bit), Microsoft® Internet Explorer® 6.0 SP3	
Network	Network IF	10Base-T / 100Base-TX, RJ-45 connector (female)	
	Image Resolution [4] — Aspect ratio: [4 : 3]	WV-ST165: H.264: 1,280 x 960 / VGA (640 x 480) / QVGA (320 x 240), up to 30 fps JPEG: 1,280 x 960 / VGA (640 x 480) / QVGA (320 x 240), up to 30 fps WV-ST162: H.264: 800 x 600 / VGA (640 x 480) / QVGA (320 x 240), up to 30 fps JPEG: 800 x 600 / VGA (640 x 480) / QVGA (320 x 240), up to 30 fps	
	Aspect ratio: [16 : 9]	WV-ST165: H.264: 1,280 x 720 / 640 x 360 / 320 x 180, up to 30 fps JPEG: 1,280 x 720 / 640 x 360 / 320 x 180, up to 30 fps WV-ST162: H.264: 640 x 360 / 320 x 180, up to 30 fps JPEG: 640 x 360 / 320 x 180, up to 30 fps	
	H.264 — Transmission Mode	Constant bitrate / Framerate priority / Best effort / Advanced VBR	
	Frame Rate	1 / 3 / 5 / 7.5 / 10 / 12 / 15 / 20 / 30 fps	
	Bit Rate/Client	64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 1,536 / 2,048 / 3,072 / 4,096 / 8,192 kbps	
	Image Quality	LOW / NORMAL / FINE	
	Refresh Interval	1 fps ~ 30 fps	
	Transmission Type	UNICAST / MULTICAST	
	JPEG — Image Quality	10 steps	
	Refresh Interval	0.1 fps ~ 30 fps	
	Transmission Type	PULL / PUSH	
	Audio Compression	G.726 (ADPCM) 32 kbps / 16 kbps, G.711 64 kbps	
	Audio Mode	OFF / Mic (Line) input / Audio output / Interactive (Half duplex) / Interactive (Full duplex)	
	Authentication for Audio	Level 1 only / Level 2 higher / All users	
	Total Bit Rate	64 / 128 / 256 / 384 / 512 / 768 / 1,024 / 2,048 / 4,096 / 8,192 kbps / Unlimited	
	Supported Protocol	IPv6: TCP/IP, UDP/IP, HTTP, HTTPS, RTP, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, MLD, ICMP, ARP IPv4: TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP,FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP	
	FTP Client	Alarm image transmission, FTP periodic transmission	
	No. of Simultaneous Users	Up to 14 users (Depends on network conditions)	
	SDHC/SD Memory Card (Option)	Manufactured by Panasonic SDHC memory card: 4 GB, 8 GB, 16 GB, 32 GB SD memory card: 256 MB, 512 MB, 1 GB, 2 GB except miniSD card and microSD card)	
	Cellular Phone Compatibility	JPEG image, panning/tilting/zoom control, AUX control (by access level)	
	Mobile Terminal Compatibility	iPad, iPhone, iPod touch (iOS 4.2.1 or later)	

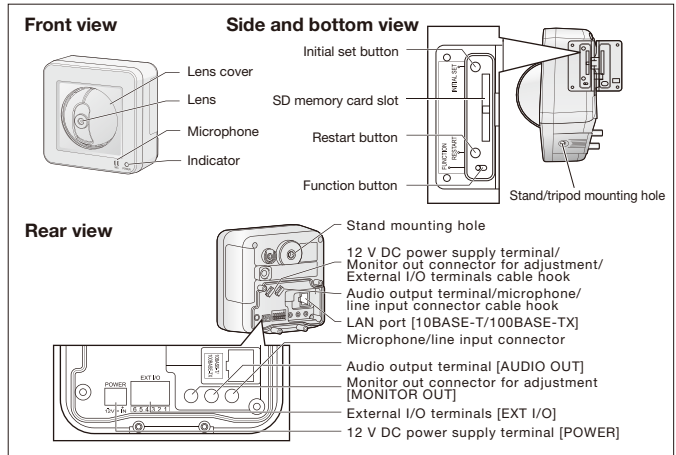| TV System		NTSC	PAL
Alarm	Alarm Source	VMD, Command alarm	
	Alarm Actions	SDHC/SD memory recording, E-mail notification, Indication on browser, FTP image transfer, Panasonic protocol output	
	Alarm Log	With SDHC/SD memory card: 5,000 logs, without SDHC/SD memory card: 1,000 logs	
	Schedule	VMD	
Input/ Output	Monitor Output (for adjustment)	VBS: 1.0 V [p-p]/75 Ω, NTSC composite, ø3.5 mm mini jack	VBS: 1.0 V [p-p]/75 Ω, PAL composite, ø3.5 mm mini jack
	Microphone/Line Input	ø3.5 mm monaural mini jack, Input impedance: Approx. 2.2 kΩ	
	For microphone input	Applicable microphone: Plug-in power type, Supply voltage: 3.3 V ±0.5 V	
	For line input	Input level: Approx. –10 dBV	
	Audio Compression	ø3.5 mm stereo mini jack (monaural output),Output impedance: Approx. 560 Ω, Line level	
	External I/O Terminals	ALARM IN 1, ALARM IN 2/ ALARM OUT, ALARM IN 3/ AUX OUT, GND, 12 V DC	
General	Safety/EMC Standard	UL (UL60950-1), FCC (Part15 ClassA), C-UL (CAN/CSA C22.2 No.60950-1), DOC (ICES003 ClassA)	CE, IEC60950-1 (EN55022 ClassB, EN55024)
	Power Source and Power Consumption	PoE (IEEE802.3af compliant), 12V DC PoE: 130 mA (Class 2 device), 12 V DC: 430 mA	
	Ambient Operating Temperature	0 °C ~ +40 °C (32 °F ~ 104 °F)	
	Ambient Operating Humidity	Less than 90 % (no condensation)	
	Dimensions	100 mm (W) x 100 mm (H) x 74 mm(D) (3-47/50" x 3-47/50" (H) x 2-23/25") (excluding projection)	
	Mass (approx.)	Main body 345 g (0.76 lbs.)	
	Finish	Main body: PC/ABS resin, sail white Dome section: Clear polycarbonate resin	

*1 Converted value
*2 Refer to "Notes on Windows Vista® / Windows® 7 / Windows® 8" on the provided CD-ROM for further information about system requirements for a PC and precautions when using Microsoft® Windows® 8 or Microsoft® Windows® 7 or Microsoft® Windows Vista®.
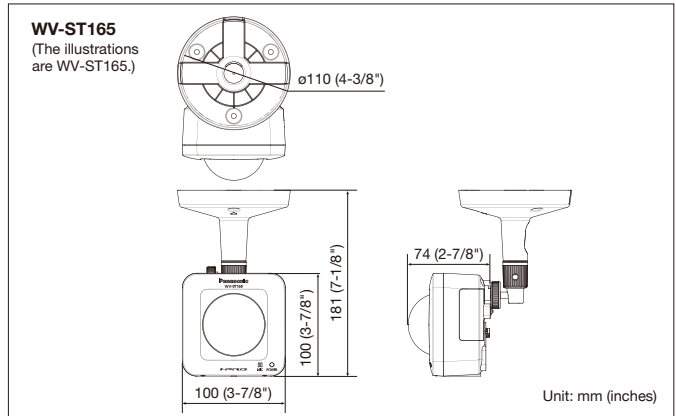*3 When using IPv6 for communication, use Microsoft® Windows® 8 or Microsoft® Windows® 7 or Microsoft® Windows Vista®.
*4 Transmission for 2 streams can be individually set in the same compression method.

Part Names and Functions

Front view

Lens cover
Lens
Microphone
Indicator

Side and bottom view

Initial set button
SD memory card slot
Restart button
Function button
Stand/tripod mounting hole

Rear view

Stand mounting hole
12 V DC power supply terminal/ Monitor out connector for adjustment/ External I/O terminals cable hook
Audio output terminal/microphone/ line input connector cable hook
LAN port [10BASE-T/100BASE-TX]
Microphone/line input connector
Audio output terminal [AUDIO OUT]
Monitor out connector for adjustment [MONITOR OUT]
External I/O terminals [EXT I/O]
12 V DC power supply terminal [POWER]

Appearance

WV-ST165
(The illustrations are WV-ST165.)

ø110 (4-3/8")
181 (7-1/8")
100 (3-7/8")
100 (3-7/8")
74 (2-7/8")

Unit: mm (inches)

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Important
– Safety Precaution: Carefully read the operating instructions and installation manual before using this product.
– Panasonic cannot be responsible for the performance of the network and/or other manufacturers' products used on the network.

• Masses and dimensions are approximate.
• Specifications are subject to change without notice.
• These products may be subject to export control regulations.