



**Model Number:**

PT12X-SDI-GY-G2 (gray)  
 PT12X-SDI-WH-G2 (white)  
<http://ptzoptics.com/sdi/>

## PTZOPTICS Broadcast & Conference Camera

The PTZOptics 12X-SDI is a 1080p camera with 12X optical zoom for capturing both wide angles and long shots. With support for 3G-SDI, HDMI, and IP streaming (H.264, H.265, & MJPEG), this camera is ideal for broadcasting high definition video signals for broadcast, recording, or video conferencing applications.

### KEY FEATURES

- 72.5 degree wide-angle lens.
- High performance in low light scenarios with Wide Dynamic Range.
- Full 1920x1080p HD Resolutions up to 60 frames per second.
- 2D and 3D noise reduction with our latest “low noise CMOS sensor”.
- RS232 & RS485 (Serial), and IP (LAN/WAN) control
- H.264, H.265, & MJPEG Streaming over RJ-45 LAN port
- HDMI, 3G-SDI, & IP streaming (all 3 simultaneously)
- PoE (Power over Ethernet) or 12VDC
- RTMP & RTSP IP streaming
- 5-year warranty
- Photobooth capable

### WHAT'S IN THE BOX

- 12X Zoom 3G-SDI Camera
- Power Adapter + Cord
- IR Remote Control
- RS-232C Cable
- Quick Start Guide
- (2) AAA Batteries

Camera & Lens	
Video Sensor	1/2.7" CMOS, 2.12 Mega Pixels
Frame Rates	1080p-60/50/30/25, 1080-60/50, 720p-60/50/30/25
Frame Rates (CVBS)	576i-30, 480i-30
Focal Length	12x, F3.5mm-42.3mm, F1.8-F2.8
Lens Zoom	12x
Field of View	72.5°
Min Lux	0.05 Lux (@F1.8, AGC ON)
Shutter Speed	1/30s - 1/10000s
SNR	≥55dB
Vertical Flip & Mirror	Supported
Horizontal Angle of View	6.9° (tele) to 72.5° (wide)
Vertical Angle of View	3.9° (tele) to 44.8°(wide)
Working Environment	Indoor

Pan & Tilt Movement	
Pan Movement	±170°
Tilt Rotation	Up: 90°, Down: 30°
Presets	10 via IR (255 via Serial or IP)

Rear Board	
Video Output	HDMI, 3G-SDI, IP Streaming, CVBS
Network Interface	RJ45
Audio Interface	Line In, 3.5mm (HDMI & IP Stream Only)
Communication	RS-232, RS-485, PELCO-D/P
Baud Rate	2400/4800/9600 bits
Power Supply	JEITA type Power Adapter (DC IN 12V)
3G-SDI Interface	BNC – 75 Ohm, Female
USB 2.0 Interface	Future Use

Electrical Index	
Power Supply	12W (Max)
Input Voltage	12V DC (10.8 - 13.0V DC) or PoE 802.3af

Physical Specifications	
Dimension (in.)	5.6W x 6.5H x 6.7D (7.88H max w/ Tilt)
Dimensions (mm)	142W x 164H x 169D (189H max w/ Tilt)
Box Dimensions	9" x 9" x 10"   229mm x 254mm x 229mm
Camera Weight	3.20 lbs. (1.45 kg)
Boxed Weight	5.4 lbs. (2.45 kg)



**Model Number:**

PT20X-SDI-GY-G2 (gray)  
 PT20X-SDI-WH-G2 (white)  
<http://ptzoptics.com/sdi/>

## PTZOPTICS Broadcast & Conference Camera

The PTZOptics 20X-SDI is a 1080p camera with 20X optical zoom for capturing HD images at long distances. With support for 3G-SDI, HDMI, and IP streaming (H.264, H.265, & MJPEG), this camera is ideal for broadcasting high definition video signals for broadcast, recording, or video conferencing applications.

### KEY FEATURES

- 60.7 degree wide-angle lens.
- High performance in low light scenarios with Wide Dynamic Range.
- Full 1920x1080p HD Resolutions up to 60 frames per second.
- 2D and 3D noise reduction with our latest “low noise CMOS sensor”.
- RS232 & RS485 (Serial), and IP (LAN/WAN) control
- H.264, H.265, & MJPEG streaming over RJ-45 LAN port
- HDMI, 3G-SDI, & IP streaming (all 3 simultaneously)
- PoE (Power over Ethernet) or 12VDC
- RTMP & RTSP IP streaming
- 5-year warranty
- Photobooth capable

### WHAT'S IN THE BOX

- 20X Zoom 3G-SDI Camera
- Power Adapter + Cord
- IR Remote Control
- RS-232C Cable
- Quick Start Guide
- (2) AAA Batteries

Camera & Lens	
Video Sensor	1/2.7" CMOS, 2.12 Mega Pixels
Frame Rates	1080p-60/50/30/25, 1080i-60/50, 720p-60/50/30/25
Frame Rates (CVBS)	576i-30, 480i-30
Focal Length	20x, F4.42mm-88.5mm, F1.8-F2.8
Lens Zoom	20x
Field of View	60.7°
Min Lux	0.05 Lux (@F1.8, AGC ON)
Shutter Speed	1/30s - 1/10000s
SNR	≥55dB
Vertical Flip & Mirror	Supported
Horizontal Angle of View	3.36° (tele) to 60.7° (wide)
Vertical Angle of View	1.89° (tele) to 34.1°(wide)
Working Environment	Indoor

Pan & Tilt Movement	
Pan Movement	±170°
Tilt Rotation	Up: 90°, Down: 30°
Presets	10 via IR (255 via Serial or IP)

Rear Board Connectors	
Video Output	HDMI, 3G-SDI, IP Streaming, CVBS
Network Interface	RJ45
Audio Interface	Line In, 3.5mm (HDMI & IP Stream Only)
Communication	RS-232, RS485, PELCO-D/P
Baud Rate	2400/4800/9600 bits
Power Supply	JEITA type Power Adapter (DC IN 12V)
3G-SDI Interface	BNC – 75 Ohm, Female
USB 2.0 Interface	Future Use

Electrical Index	
Power Supply	12W (Max)
Input Voltage	12V DC (10.8 - 13.0V DC) or PoE 802.3af

Physical Specifications	
Dimension (in.)	5.6W x 6.5H x 6.7D (7.8H max w/ Tilt)
Dimensions (mm)	142W x 164H x 169D (198H max w/ Tilt)
Box Dimensions	9" x 9" x 10"   229mm x 254mm x 229mm
Camera Weight	3.00 lbs. (1.36 kg)
Boxed Weight	5.4 lbs. (2.45 kg)



**Model Number:**

PT30X-SDI-GY-G2 (gray)  
 PT30X-SDI-WH-G2 (white)  
<http://ptzoptics.com/sdi/>

## PTZOPTICS Broadcast & Conference Camera

The PTZOptics 30X-SDI is a 1080p camera with 30X optical zoom for capturing HD images at long distances. With support for 3G-SDI, HDMI, and IP streaming (H.264, H.265, & MJPEG), this camera is ideal for broadcasting high definition video signals for broadcast, recording, or video conferencing applications.

### KEY FEATURES

- 60.7 degree wide-angle lens.
- High performance in low light scenarios with Wide Dynamic Range.
- Full 1920x1080p HD Resolutions up to 60 frames per second.
- 2D and 3D noise reduction with our latest “low noise CMOS sensor”.
- RS232 & RS485 (Serial), and IP control
- H.264, H.265, & MJPEG streaming over RJ-45 LAN port
- HDMI, 3G-SDI, & IP streaming (all 3 simultaneously)
- PoE (Power over Ethernet) or 12VDC
- RTMP & RTSP IP streaming
- 5-year warranty
- Photobooth capable

### WHAT'S IN THE BOX

- 30X Zoom 3G-SDI Camera
- Power Adapter + Cord
- IR Remote Control
- RS-232C Cable
- Quick Start Guide
- (2) AAA Batteries

Camera & Lens	
Video Sensor	1/2.7" CMOS, 2.07 Mega Pixels
Frame Rates	1080p-60*/50/30/25, 1080i-60*/50, 720p-60/50/30/25
Frame Rates (CVBS)	576i/30, 480i/30
Focal Length	F4.42mm-132.6mm, F1.8-F2.8
Lens Zoom	30x
Field of View	60.7°
Min Lux	0.05 Lux (@F1.8, AGC ON)
Shutter Speed	1/30s - 1/10000s
SNR	≥55dB
Vertical Flip & Mirror	Supported
Horizontal Angle of View	2.28° (tele) to 60.7° (wide)
Vertical Angle of View	1.28° (tele) to 34.1°(wide)
Working Environment	Indoor

Pan & Tilt Movement	
Pan Movement	±170°
Tilt Rotation	Up: 90°, Down: 30°
Presets	10 via IR (255 via Serial or IP)

**\*Please note:** The camera is unable to perform 1080@60 over IP Stream & SDI/HDMI simultaneously.

Rear Board Connectors	
Video Output	HDMI, 3G-SDI, IP Streaming, CVBS
Network Interface	RJ45
Audio Interface	Line In, 3.5mm (HDMI & IP Stream Only)
Communication	RS-232, RS485, PELCO-D/P
Baud Rate	2400/4800/9600 bits
Power Supply	JEITA type Power Adapter (DC IN 12V)
3G-SDI Interface	BNC – 75 Ohm, Female
USB 2.0 Interface	Future Use

Electrical Index	
Power Supply	12W (Max)
Input Voltage	12V DC (10.8 - 13.0V DC) or PoE 802.3af

Physical Specifications	
Dimension (in.)	5.6W x 6.5H x 6.7D (7.8H max w/ Tilt)
Dimensions (mm)	142W x 164H x 169D (198H max w/ Tilt)
Box Dimensions	9" x 9" x 10"   229mm x 254mm x 229mm
Camera Weight	3.05 lbs. (1.39 kg)
Boxed Weight	5.4 lbs. (2.45 kg)



**12. Multiple Function Buttons**

Function 1. Set camera IR address function:  
Press 3 keys consecutively to set the camera's IR address as follow:

- [\*] + [#] + [F1]: IR Address 1
- [\*] + [#] + [F2]: IR Address 2
- [\*] + [#] + [F3]: IR Address 3
- [\*] + [#] + [F4]: IR Address 4

Function 2. Image freezing function: Press [F4] to start the freeze function. The word "Freeze" displays on the upper left corner. After five seconds, the display disappears automatically (though the freeze feature continues). To cancel the freeze, press the [F4] key the word "Unfreeze" displays on the upper left corner. After five seconds, the display disappears automatically.

**15. Menu Button**

OSD Menu Settings: Press this button to enter or exit the OSD (on screen display) menu.

**16. Backlight Button**

Backlight (aka BLC) button: Press this button to enable backlight compensation. Press it again to disable backlight compensation.

NOTE: Effective only in auto exposure mode.  
NOTE: If there is a light behind the subject, the subject will appear dark (i.e. silhouetted). In this case, press the backlight button to turn BLC On. To cancel this function, press the backlight button to turn BLC Off.

**17. P/T RST Button**

Press the button to self-calibrate the pan and tilt positions and limits.

**Special Shortcut Functions**

- [\*] + [#] + [1]: Display OSD menu in English
- [\*] + [#] + [3]: Display OSD menu in Chinese
- [\*] + [#] + [4]: Show IP address
- [\*] + [#] + [6]: Quickly restore default settings
- [\*] + [#] + [8]: Show the camera FW version
- [\*] + [#] + [9]: Quickly set mounting mode (vertical flip / normal)
- [\*] + [#] + [MANUAL]: Resets IP information
- [#] + [\*] + [4]: Enable Dynamic IP addressing
- [#] + [\*] + [#] + [1]: Set IP to 192.168.100.81
- [#] + [\*] + [#] + [2]: Set IP to 192.168.100.82
- [#] + [\*] + [#] + [3]: Set IP to 192.168.100.83
- [#] + [\*] + [#] + [4]: Set IP to 192.168.100.84
- [#] + [\*] + [#] + [5]: Set IP to 192.168.100.85
- [#] + [\*] + [#] + [6]: Set IP to 192.168.100.86
- [#] + [\*] + [#] + [7]: Set IP to 192.168.100.87
- [#] + [\*] + [#] + [8]: Set IP to 192.168.100.88
- [#] + [\*] + [#] + [9]: Set IP to 192.168.100.89
- [#] + [\*] + [#] + [0]: Set IP to 192.168.100.80

**1. Standby Button**

Press this button to enter standby mode.

Press it again to enter normal mode.

NOTE: Power consumption in standby mode is approximately half of the normal mode.

**2. Position Buttons (0-9)**

To set preset or call presets and for Special Shortcut Functions.

**3. \* (asterisk) Button**

For use with multiple function buttons (see 12)

**4&13. Set/Clear Preset Buttons**

Set preset: Store a preset position [PRESET] + Numeric button (0-9): Setting a corresponding numeric key preset position.

Clear preset: Erase a preset position

[RESET] + Numeric button (0-9)

Note: [\*] + [#] + [RESET]: Erase all presets.

**5&14. Pan/Tilt & Home Control Buttons**

Press the arrow buttons to perform panning and tilting. Press the [HOME] button to face the camera back to its Home position.

**6. Return Button**

Press button to return to previous menu.

**7. Zoom Buttons (Slow & Fast)**

Zoom+: Zoom In (Slow and fast speeds)

Zoom-: Zoom Out (Slow and fast speeds)

**8. L/R Set Button**

Set the left & right direction of panning control. Hold [L/R Set] + Press [1]: Normal panning direction. Hold [L/R Set] + Press [2]: Left and right panning direction will be reversed.

**9. Focus Buttons**

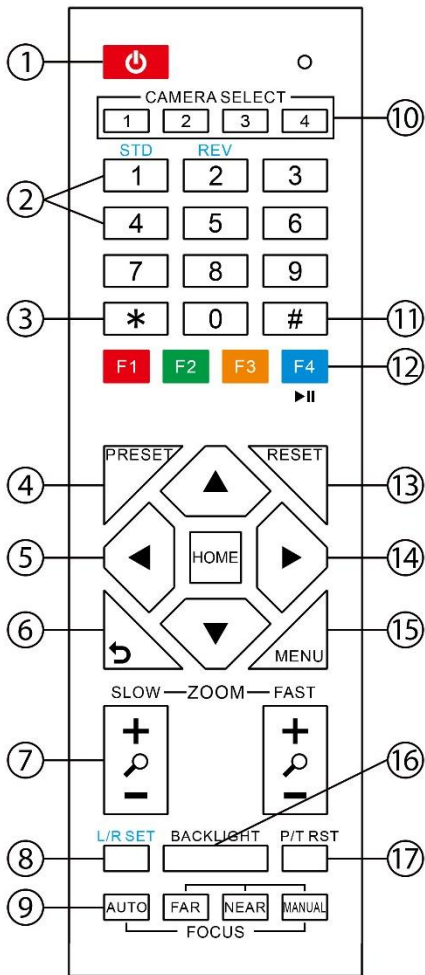
Used for focus adjustment. Press [AUTO] to adjust the focus on the center of the object automatically. To adjust the focus manually, press the [MANUAL] button, and then adjust focus with [Far] (focus on far object) and [Near] focus on near object).

**10. Camera Address Select Buttons**

Press the button corresponding to the camera which you want to operate with the IR remote controller.

**11. # Button**

For use with multiple function buttons (see 12)



## PC Recommendation (Low end)

The MultiCamera Kit is designed around a core PC. The PC specs below will run any software you wish to utilize for video mixing, streaming, editing, and recording.

Please note that the MultiCamera Kit does not include the below computer.

### KEY MINIMUM REQUIREMENTS

- Windows 8.1 or 10
- Intel Core i7 Processor 3Ghz+
- 8GB DDR4 RAM
- 256SSD (Solid State Drive)
- Two (2) available USB 3.0 ports for Magewell SDI to USB converters
- One (1) available USB 2.0 port for Shure Motiv
- Intel HD Graphics 4600 / 520 / 620
- 10/100/1000 Mbps Ethernet
- Thunderbolt 3/USB 3.1 via USB-C (required for upgrading to Producer+)



PC Recommendation Capabilities	
Camera Inputs	4 SDI cameras
Streaming	Up to 1080p 20Mbps
NDI	4 NDI sources up to HD 1080p
Recording	Up to 1080p 75Mbps MP4

PC Recommendation Specifications	
Motherboard	Asus Prime X570 Pro
Graphics Card	NVIDIA GeForce GTX 1660
Case	Corsair Case Series 100R Mid Tower
SDD	Samsung 850 EVO 500GB
PSU	500W ATX PSU
Capture Card	Magewell Capture Card
CPU	AMD Ryzen 5 3600X with Wraith Spire (6 cores / 12 threads 3.8 GHz)
RAM	16GB (2x8GB) DDR4
Operating System	Windows 10

## PC Recommendation (High end)

The MultiCamera Kit is designed around a core PC. The PC specs below will run any software you wish to utilize for video mixing, streaming, editing, and recording.

Please note that the MultiCamera kit does not include the below computer.

### KEY MINIMUM REQUIREMENTS

- Windows 10
- Intel Core i7 Processor 3Ghz+
- 16GB DDR4 RAM
- 256SSD (Solid State Drive)
- One (1) available USB 2.0 port for Shure Motiv
- NVIDIA GeForce 1050
- 10/100/1000 Mbps Ethernet
- Thunderbolt 3/USB 3.1 via USB-C for external enclosure



Recommended PC Capabilities	
Camera Inputs	8 SDI cameras 1080p
Streaming	Up to 1080p 20Mbps
NDI	4 NDI sources up to HD 1080p
Recording	Up to 1080p 75Mbps MP4

Recommended PC Specifications	
Motherboard	Gigabyte Z390 AORUS PRO Intel Z390 or Z370 motherboard
Graphics Card	NVIDIA GeForce GTX 1660 Ti
Case	ATX SilverStone Redline RL05 Case
SDD	Samsung 960 EVO NVMe M.2 1TB
PSU	600W ATX PSU
Capture Card	External Magewell Quad Capture Card
CPU	Intel Core i7 9700K 3.6GHz+ Cooler Master MasterLiquid 120 Liquid CPU Cooler
RAM	32GB (2x16GB) DDR4
Operating System	Windows 10

## Magewell Quad SDI PCIe

The Magewell Quad SDI PCIe input card allows for four (4) SDI connections to a PC. The input card can be paired with any SDI input, whether from a 12X, 20X, or 30X-SDI camera at Full HD 1080p 60.

### KEY FEATURES

**WHAT'S IN THE BOX**  
Magewell Quad-SDI PCIe

- Allows for SDI inputs into Thunderbolt3 input of NUC
- Four (4) Full resolution 1080p/60 inputs
- Up to 4:4:4 10 bit High-fidelity video processing pipeline
- Up/Down scaling as needed



Magewell Quad SDI PCIe Specifications	
Video Capture Formats	SD/HD/3Ga/3Gb/3Ga-DL/3Gb-DS
Color Sampling	RGB 4:4:4, YCbCr 4:4:4, YCbCr 4:2:2
Input Interfaces	4) BNC via SD/HD/3G-SDI
Supported Software	VLC, VirtualDub, OBS, xSplit, vMix, VidBlaster, Wirecast, Microsoft Media Encoder, Adobe Flash Media Encoder, Any other DirectShot/V4L2 encoding/streaming software
Supported Resolutions	Video resolutions up to 2048x1080
Supported Operating Systems	Windows - 7/8.1/10 Linux - Ubuntu 12.04/14.04/16.04/17.04/17.10 Mac - OS X 10.9.5/10.10/10.11.2 ~ 10.11.4 MacOS - 10.12, 10.13.2, 10.13.3
Host Interface	PCIe Gen2 x4

## HuddleCamHD

### Compatibility

- VISCA Protocol
- PELCO-D
- PELCO-P

### What's in the box?

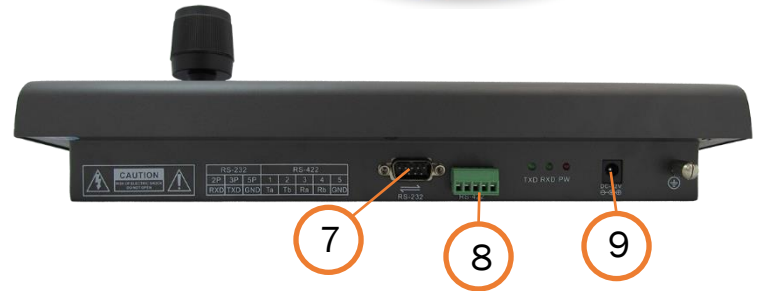
- Three-Axis Joystick
- RS232 cable
- DC12V Power Supply
- User Manual

### Features

- Durable Metal Housing
- RS232, RS485, & RS422
- On Screen Display Menu control
- Variable Pan, Tilt, Zoom, & Focus speed control
- Iris, Focus, & Preset control
- 6) Camera Quick Select keys
- 9) Quick Preset Set & Call keys

Model Number: HC-JOY-G3

Easy pan, tilt, & zoom control for any VISCA or PELCO protocol camera!  
Adjust pan, tilt, zoom, & focus speeds.  
Use 3-dimensional joystick with "twist" for zoom control



#### 1. LCD Display

Menu options are displayed here

#### 2. Lens Control

Focus+/-, Focus Lock/Unlock, Iris +/-, Auto Focus & Exposure

#### 3. Joystick

Three-axis joystick controller

#### 4. Camera Quick Select

Quickly swap between first 6 cameras

#### 5. Preset & OSD Control

Allows for preset, speed, & OSD control

#### 6. Numeric Keys

Numeric keys for presets, changing parameters, and more

#### 7. DB9 Connection

Allows for RS232 through DB9 connections

#### 8. Phoenix Connection

Allows for RS422 or RS485 wiring connections

#### 9. Power Connection

DC12V Power Connection

### Key Technical Specifications

Connections:	RS232, RS485, RS422
Baud Rate:	1200-19200 bps
Interfaces:	DB9: RS232; 5SCT: RS485/RS422
Max Cameras:	Control up to 255 Cameras
Max Presets:	Up to 255 Presets
Max Distance:	3,937' (1200m) using 24 gauge twisted pair

### Operation Specifications

Power:	6W (12VDC Voltage)
Working Temp:	14° ~ 122° F (-10° ~ +50° C)
Working Humidity:	10 ~ 90% (non-condensation)
Weight:	3.4 lbs   1.6 kg
Dimensions (in.):	12.6W x 4.3H x 7.1D
Dimensions (mm.):	320W x 109H x 180D





**Model Number:**  
MVI-DIG

## Shure Motiv MVI-DIG

The Shure Motiv MVI-DIG converts any standard XLR or 1/4" plug into a USB source to be used with a computer. This allows for audio from a mixing board to be embedded into the Intel Skull Canyon for use with a mixing software.

### KEY FEATURES

- Converts XLR or 1/4" plug to USB 2.0
- Toggle mute from microphone/mixing board
- Supplies 12-48v phantom power (12v-iOS/48v-USB)
- Five (5) DSP Preset Modes (Speech, Singing, Flat, Acoustic Instrument, Loud)
- Durable all metal housing

### WHAT'S IN THE BOX

Shure Motiv MVI-DIG  
Micro USB 2.0 cable  
USB-C to micro USB 2.0  
cable

Product Specification	
MFi Certified	Yes
DSP Modes (Presets)	Speech / Singing / Acoustic / Loud / Flat
Input	Combination XLR and 1/4" (6.35mm) TRS
Input Impedance	3-pin XLR: > 2 kΩ   1/4" TRS: > 1 MΩ
Bit Depth	16-bit/24-bit
Sampling Rate	44.1/48 kHz
Frequency Response	20 Hz to 20,000 Hz
Adjustable Gain Range	3-pin XLR: 0 dBV   1/4" TRS: +9 dBV
Maximum Input Level	3-pin XLR: 0 dBV   1/4" TRS: +9 dBV
Headphone Output	3.5mm (1/8")
Power Requirements	Powered through USB or Lightning connector
Phantom Power	USB: +48 VDC   iOS: +12 VDC
Input Mute	Yes
Housing	All-metal construction
Net Weight	310.0g (10.93 oz.)
Dimensions	42 x 84 x 72mm (H x W x D)
Cable	Includes 1) micro-b to USB cable and 1) micro-b to USB-C