

KRAMER



USER MANUAL

MODEL:

**K-CamHD
PTZ Camera**



Contents

Introduction	1
Getting Started	1
Overview	2
Typical Applications	3
Defining K-CamHD PTZ Camera	4
Mounting K-CamHD	5
Mounting K-CamHD	5
Connecting K-CamHD	7
Connecting to K-CamHD via RS-232	8
Operating and Controlling K-CamHD	9
Controlling Via IR Remote Control Transmitter	10
Operating Via the OSD Menu	12
Upgrading Firmware	17
Technical Specifications	18
Default Communication Parameters	20

Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment.
- Review the contents of this user manual.



Go to www.kramerav.com/downloads/K-CamHD to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

Achieving Best Performance

- Use only good quality connection cables (we recommend Kramer high-performance, high-resolution cables) to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables).
- Do not secure the cables in tight bundles or roll the slack into tight coils.
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality.
- Position your Kramer **K-CamHD** away from moisture, excessive sunlight and dust.

Safety Instructions



Caution:

- This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.
- For products with relay terminals and GPIO ports, please refer to the permitted rating for an external connection, located next to the terminal or in the User Manual.
- There are no operator serviceable parts inside the unit.



Warning:

- Use only the power cord that is supplied with the unit.
- To ensure continuous risk protection, replace fuses only according to the rating specified on the product label which is located on the bottom of the unit.

Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at www.kramerav.com/il/quality/environment.

Overview

Congratulations on purchasing your Kramer **K-CamHD PTZ Camera** (Pan Tilt Zoom camera). **K-CamHD** provides great image quality, even in low-light conditions, and easy access to medium and large size conferencing. **K-CamHD** combines 1080p image quality, 12x optical zoom, intelligent color optimization technology, ultra-low CMOS image sensors as well as 2D and 3D DNR technology.

Go to www.kramerav.com/downloads/K-CamHD to download the latest user manual and check if firmware upgrades are available.

K-CamHD provides exceptional quality, advanced and user-friendly operation, and flexible control.

- Smooth PTZ operation – featuring a horizontal field of view (HFOV) of 72.5°, easy pan ($\pm 170^\circ$) and tilt ($\pm 30^\circ$) ensuring complete coverage.
- High quality zoom – 12x optical zoom and 16x digital zoom providing a crystal-clear image and highly accurate close-ups.
- Simple plug and play – connecting via USB 3.0.
- Built-in noise reduction – delivers clear image quality, even in low light situations with 2D and 3D DNR and WDR technology.
- High-end camera lens – provides 1080p professional visuals.
- Flexible camera – works with a host of meeting devices based on RS-232 protocol communication.

Typical Applications

K-CamHD is ideal for the following typical applications:

- Hybrid video conferencing in meeting rooms.

Controlling your K-CamHD

Control your K-CamHD via:

- RS-232 serial commands (VISCA protocol) transmitted by a touch screen system, PC, or other serial controller.
- Remotely, from the infrared remote control transmitter.
- OSD menu.

Defining K-CamHD PTZ Camera

This section defines K-CamHD.

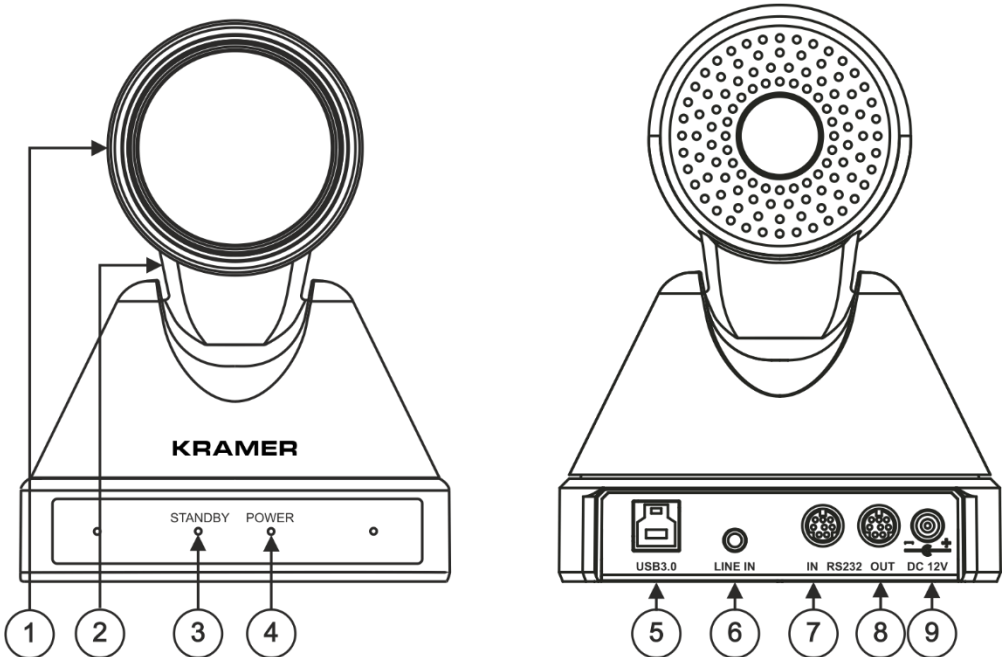


Figure 1: K-CamHD PTZ Camera

#	Feature	Function
①	Camera	High quality Camera.
②	Tilting Mechanism	Can be set to any of 255 preset positions.
③	STANDBY LED	Lights green when the camera is in standby mode.
④	POWER LED	Lights green when the power is on.
⑤	USB 3 Type B Port	Connect to a PC.
⑥	LINE IN	Connect to a microphone.
⑦	RS-232 8-pin DIN Connector	IN Connect to a device with an RS-232 port (for example, a system controller).
⑧		OUT Connect to a device with an RS-232 port (for example, a camera).
⑨	12V DC Power Connector	Connect to the 12V power adapter.

Mounting K-CamHD

This section provides instructions for mounting **K-CamHD**. Before installing, verify that the environment is within the recommended range:



- Operation temperature – 0° to 40°C (32° to 104°F).
- Storage temperature – -20° to +60°C (-4° to +140°F).
- Humidity – 10% to 90%, RHL non-condensing.



Caution:

- Mount **K-CamHD** before connecting any cables or power.



Warning:

- Ensure that the environment (e.g., maximum ambient temperature & air flow) is compatible for the device.
- Avoid uneven mechanical loading.
- Keep away from children – product includes small accessories and components.
- Appropriate consideration of equipment nameplate ratings should be used for avoiding overloading of the circuits.
- Reliable earthing of rack-mounted equipment should be maintained.
- Maximum mounting height for the device is 2 meters.

Mounting K-CamHD

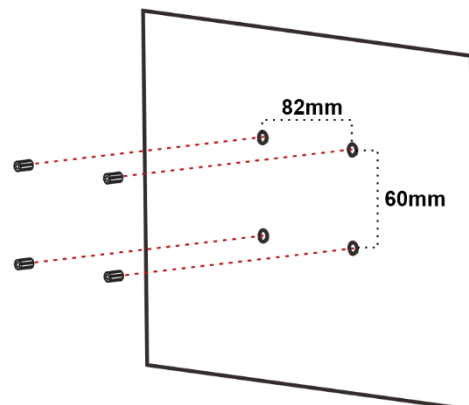
You can mount your camera to a wall, ceiling, or place it on a surface. A built-in gravity sensor automatically corrects the image orientation enabling mounting **K-CamHD** straight or upside-down.



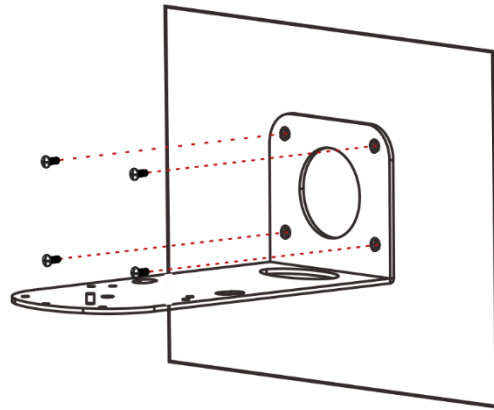
Note that you can also attach the device upside down, from under the bracket.

To mount K-CamHD on a wall:

1. find the correct location on the wall.
2. in the desired location, drill 4 holes 82mm and 60mm apart (using a 6mm drill-bit) to fit the 4 holes of the wall-mounting bracket.
3. Insert the four expansion plugs into the holes.

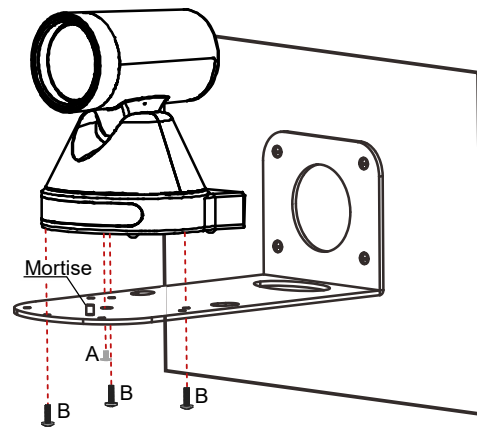


4. Attach the wall bracket to the wall, using the four wall-bracket screws.
You can place the bracket upside-down to mount the camera the other way around.



5. Attach the device to the wall bracket by fitting the mortise (on the bracket) into the tenon (on the camera).
6. Fix the camera by screwing (A) Nickel screw to the center and (B) then tighten with 3 black screws.

K-CamHD is mounted on the wall.



Connecting K-CamHD



Always switch off the power to each device before connecting it to your **K-CamHD**. After connecting your **K-CamHD**, connect its power and then switch on the power to each device.

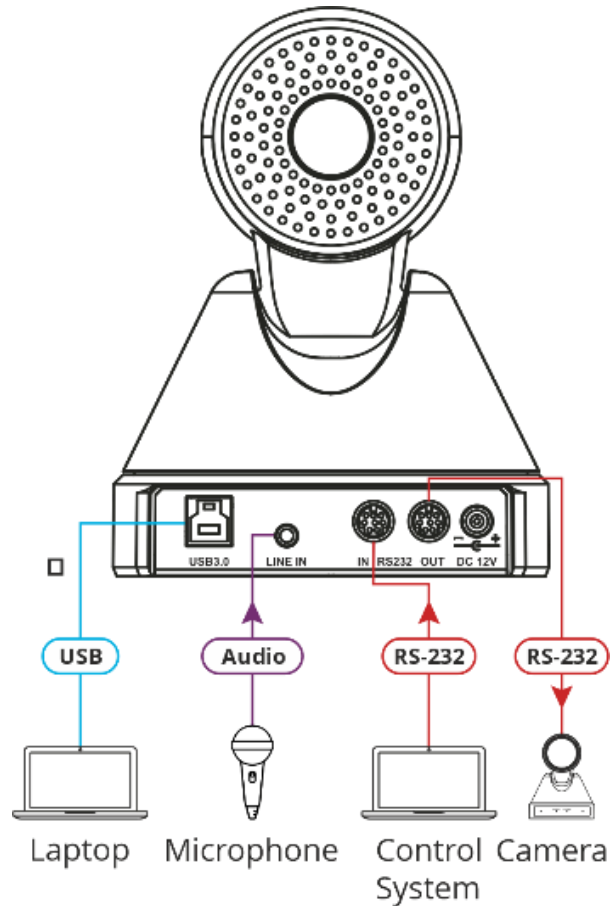


Figure 2: Connecting to the K-CamHD Rear Panel

To connect K-CamHD as illustrated in the example in [Figure 2](#):

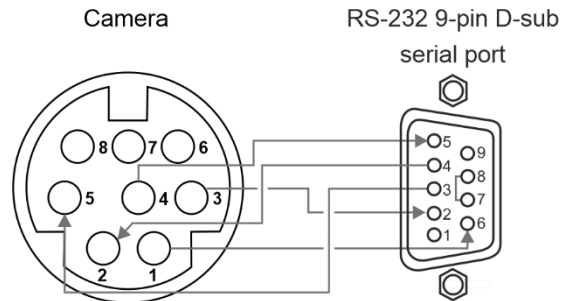
1. Connect the USB 3.0 port (5) to a laptop.
2. Connect a microphone to the LINE IN 3.5 Mini Jack (6).
3. Connect the RS232 OUT 8-pin DIN Connector (8) to an additional Camera.
4. Connect a control system to the RS232 IN 8-pin DIN Connector (7).
5. Connect the power adapter to **K-CamHD** and to the mains electricity (not shown in [Figure 2](#)).

Connecting to K-CamHD via RS-232

You can connect to K-CamHD via an RS-232 connection (7) / (8) using, for example, a PC or an additional camera.

Connect the K-CamHD RS-232 8-pin Min DIN connector to an RS-232 9-pin D-sub serial port, as follows:

Camera Pin	RS-232 9-Pin D-Sub Serial Pin
1 (DTR)	6 (DSR)
2 (DSR)	4 (DTR)
3 (TXD)	2 (RXD)
4 (GND)	5 (GND)
	7 (RTS) shorted to 8 (CTS)



Operating and Controlling K-CamHD

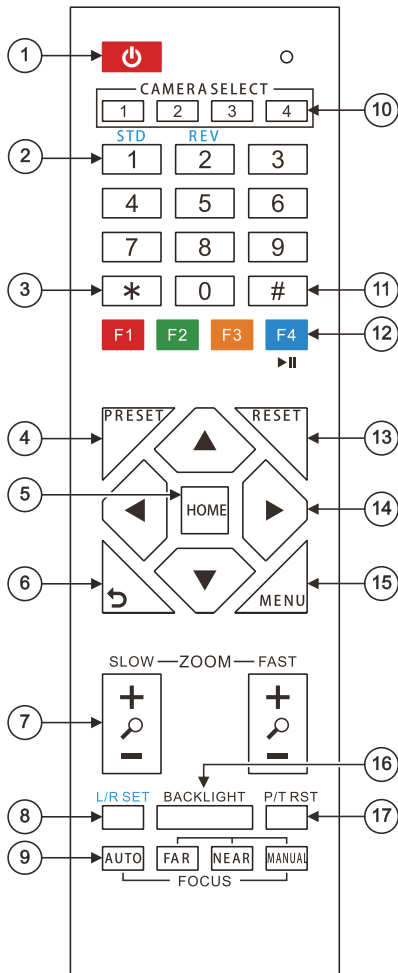
After connecting the K-CamHD (see [Connecting K-CamHD](#) on page [7](#)), and connecting the power. The device initializes, and the POWER LED lights green. The camera is ready for operation.

Control K-CamHD via:

- [Controlling Via IR Remote Control Transmitter](#) on page [10](#).
- [Operating Via the OSD Menu](#) on page [12](#).

Controlling Via IR Remote Control Transmitter

Use the IR remote control to control K-CamHD and the OSD to configure it. Use shortcut keys for quick settings (see [Shortcut Keys](#) on page 11)



#	Key	Function	
1	Power	Press once to enter standby mode. Press again to enter normal operation mode.	
2	Number (0 to 9)	Configure or edit a preset.	
3	* Key	Use together with other keys for various functions.	
4	PRESET	Press PRESET + a numerical key (0 to 9) to save the current configuration to that preset number.	
5	HOME	Press to return K-CamHD to its default position. When in the OSD, press to enter a submenu or confirm menu.	
6	Return	Return to previous item on the menu.	
7	ZOOM	SLOW	Press for slow zoom in (+) or out (-).
		FAST	Press for quick zoom in (+) or out (-).
8	L/R Set	STD (1)	Press L/R + STD (1) keys to set Pan-Tilt to same direction as L/R setting.
		REV (2)	Press L/R + REV (2) keys to set Pan-Tilt to the direction opposite to the L/R setting.
9	FOCUS	AUTO	Press to automatically set the focus to the center of the image.
		MANUAL	Press to enter manual focus mode. Then press FAR or NEAR.
		FAR	When in MANUAL mode, press to focus on a far object
		NEAR	When in MANUAL mode, press to focus on a near object.
10	CAMERA SELECT	Select the camera to configure and control (1 to 4), see Assigning up to 4 K-CamHD Units to the IR Remote Controller on page 11).	
11	# Key	Use together with other keys for various functions.	
12	IR RC	Press * + # + (F1 to F4) to assign a camera address to the remote. For example, point the remote to a camera, press *+#+F1. The remote assigns CAMERA SELECT 1 key to this camera. To use the remote to control camera 1 press the CAMERA SELECT 1 key (see Assigning up to 4 K-CamHD Units to the IR Remote Controller on page 11). Press F4 to freeze the image (see Freezing an Image on page 11).	
13	RESET	Press RESET+ a key number (0 to 9) to delete a preset configuration. Press *+#+RESET to delete all preset configurations.	
14	PTZ Control	Control camera panning and tilting using arrow keys (left, right, up, and down).	
15	MENU	Enter/exit OSD menu (see Operating Via the OSD Menu on page 12).	
16	BACKLIGHT	Press to turn backlight compensation on or off. Available when exposure mode is set to Auto (via the OSD menu).	
17	P/T RST	Press to self-check preset Pan/Tilt on camera.	

Assigning up to 4 K-CamHD Units to the IR Remote Controller

You can use one IR remote controller to control several cameras. To do so, you need to assign each device to the remote controller via IR learning.

To assign a device to the IR remote controller:

1. Turn the camera on.
2. Point the IR controller towards the front panel of the camera and press the following keys:
 - To assign Camera 1 – Press *, # and **F1** simultaneously to set IR address to "CAMERA SELECT 1".
 - To assign Camera 2 – Press *, # and **F2** simultaneously to set IR address to "CAMERA SELECT 2".
 - To assign Camera 3 – Press *, # and **F3** simultaneously to set IR address to "CAMERA SELECT 3".
 - To assign Camera 4 – Press *, # and **F4** simultaneously to set IR address to "CAMERA SELECT 4".



When assigning a camera to the remote, make sure you point directly to that camera and check that the other cameras in the area are powered down.

Cameras are assigned to IR remote controller.

Freezing an Image

You can freeze/unfreeze an image manually:

- To freeze an image, press **F4** on the remote controller. The image freezes and the display shows "Freeze" on the top left side for 5 seconds.
- To Unfreeze the image, press **F4** (once again) on the remote controller. The image unfreezes and the display shows "Unfreeze" on the top left side for 5 seconds.

Shortcut Keys

Use the following shortcut keys to set the following:

- ***+#+1**: OSD default (English).
- ***+#+3**: OSD default (Chinese).
- ***+#+6**: Quickly recover the default.
- ***+#+8**: View the camera version.
- ***+#+9**: Quickly set up inversion.
- ***+#+MANUAL**: Restore default IP address.

Operating Via the OSD Menu

K-CamHD enables controlling and defining the device parameters via the OSD, using the IR remote control MENU buttons (see [Controlling Via IR Remote Control Transmitter](#) on page [10](#)).

To enter and use the OSD menu buttons:

1. Press MENU.
2. Press:
 - **Arrow buttons** to move through the OSD menu, which is displayed on the video output.
 - **HOME** to enter a submenu and accept changes and to change the menu settings.

Use the OSD menu to perform the following operations:

- [Configuring Camera Exposure](#) on page [13](#).
- [Configuring Color Settings](#) on page [13](#).
- [Setting Image Parameters](#) on page [14](#).
- [Setting P/T/Z Parameters](#) on page [14](#).
- [Setting Digital Noise Reduction Level](#) on page [15](#).
- [Defining Setup Parameters](#) on page [15](#).
- **Error! Reference source not found.** on page **Error! Bookmark not defined..**
- [Restoring to Default Settings](#) on page [16](#).

Configuring Camera Exposure

K-CamHD enables configuring exposure parameters:

To adjust the image parameters:

1. On the IR remote press **MENU**. The menu appears.
2. Use the arrows to select **Exposure**.
3. Click **HOME** to enter Exposure menu. Adjust the following:

Menu Item	Function	
Mode	Set the exposure mode: Auto, Manual, SAE, AAE or Bright. Each exposure mode includes the relevant sub-menu settings.	
	Auto	Automatic exposure settings.
	Manual	Control exposure settings manually.
	SAE	Shutter Automatic Exposure.
	AAE	Aperture Automatic Exposure.
	Bright	Adjusts the brightness level manually
Sub-Menu	Function	Enabled in:
ExpCompMode	Select On to allow changes to the automatically-set exposure. Select Off to keep auto settings.	Auto mode
ExpComp	Adjust the exposure compensation from -7 to 7.	Auto mode and ExpCompMode=On
Backlight	Select On to allow backlight compensation. Select Off to keep auto settings.	Auto mode
Bright	Control brightness level from 0 to 17.	Bright mode
Gain Limit	Set maximum gain limit from 0 to 15.	Auto, SAE, AAE and Bright modes
Anti-Flicker	Set anti flicker to Off, 50Hz or 60Hz.	Auto, AAE and Bright modes
Meter	Select the exposure meter to Average, Center, Smart or Top.	All modes
Iris	Set the aperture value to F1.8, F2.0, F2.4, F2.8, F3.4, F4.0, F4.8, F5.6, F6.8, F8.0, F9.6, F11.0 or Close.	Manual and AAE modes
Shutter	1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000 or 1/10000.	Manual and SAE modes
Gain	Set gain from 0 to 7.	Manual mode
DRC	Set Dynamic Range Compression strength from 0 to 8.	All modes

Exposure is configured.

Configuring Color Settings

K-CamHD enables configuring color parameters.

To adjust the color parameters:

1. On the IR remote press **MENU**. The menu appears.
2. Use the arrows to select **Color**.

3. Click **HOME** to enter Color menu. Adjust the following:

Menu Item	Function
WB Mode	Set white balance mode to Auto, Indoor, Outdoor, One Push, Manual.
RG Tuning	Fine tune red gain from -10 to 10 (enabled in Auto mode).
BG Tuning	Fine tune blue gain from -10 to 10 (enabled in Auto mode).
Saturation	Set the color saturation from 60% to 200%.
Hue	Set the color hue from -10 to 10.
RG	Set red gain from 0 to 255 (enabled in Manual mode).
BG	Set blue gain from 0 to 255 (enabled in Manual mode).

Color parameters are adjusted.

Setting Image Parameters

K-CamHD enables configuring image parameters.

To adjust the image parameters:

1. On the IR remote press **MENU**. The menu appears.
2. Use the arrows to select **Image**.
3. Click **HOME** to enter Image menu. Adjust the following:

Menu Item	Function
Luminance	Adjust luminance from 0 to 14.
Contrast	Adjust contrast from 0 to 14.
Sharpness	Adjust sharpness from 0 to 14.
Flip-H	Define horizontal flip to On or Off.
Flip-V	Define vertical flip On or Off.
B&W Mode	Set black and white mode to On or Off.
Style	Set the image style to Norm, Bright or PC.

Image parameters are adjusted.

Setting P/T/Z Parameters

K-CamHD enables configuring pan tilt and zoom parameters.

To adjust the P/T/Z parameters:

1. On the IR remote press **MENU**. The menu appears.
2. Use the arrows to select **P/T/Z**.

3. Click **HOME** to enter P/T/Z menu. Adjust the following:

Menu Item	Function
SpeedByZoom	Set to On, to control pan and tilt speed as a function of zoom.
AF-Zone	Set auto focus to front, center top or bottom area.
AF Sense	Set auto focus sensitivity to low, normal or high.
L/R Set	Set pan direction to STD (Standard) or REV (Reverse).
Display Info	Set to On, to display information or set to Off.
Image Freeze	Set to On, to freeze the image before recalling a preset. Once the camera points to the recalled preset position, the camera returns to normal operation.
Digital Zoom	Set digital zoom to 2x, 4x, 8x or 16x.
Call Preset Speed	Adjust the pan and tilt movement speed from 1 (lowest) to 24 (highest).
Pre Zoom Speed	Adjust the preset zoom speed from 0 to 7.

Pan tilt and zoom parameters are adjusted.

Setting Digital Noise Reduction Level

Set 3D noise reduction for a clearer picture when light conditions are low.

To set noise reduction level:

1. On the IR remote press **MENU**. The menu appears.
2. Use the arrows to select **NR3D-Level**.
3. Click **HOME** to enter NR3D-Level menu.
4. Set the noise reduction level from 1 to 9, or set to Off.

Noise reduction level is set.

Defining Setup Parameters

Define general setup parameters.

To define setup parameters:

1. On the IR remote press **MENU**. The menu appears.
2. Use the arrows to select **SETUP**.
3. Click **HOME** to enter SETUP menu. Define the following:


Menu Item	Function
Language	Define the user language: English, Chinese or Russian.
Auto Patrol	Set to On or Off.
SDI-3G Mode	Set to LEVEL-A or LEVEL-B mapping.
Auto Flip	Set to On, for automatic flip of the view.
USB Audio	Set to On or Off.
OSD Flip	Set flipping the OSD to On or Off.

Setup parameters are defined.

w parameters.

To define communication parameters:

1. On the IR remote press **MENU**. The menu appears.
2. Use the arrows to select **COMMUNICATION SETUP**.
3. Click **HOME** to enter SETUP menu. Define the following:

Menu Item	Function
Protocol	Select the control protocol to VISCA, PELCO-D or PELCO-P.
V_Address	Set the number of a camera in a daisy-chain setting (1 to 7). Set the first camera to 1 the second in the chain to 2, and so on (enabled in Auto mode, when VISCA protocol is selected).  To daisy-chain cameras you need to use the VISCA protocol, Net Mode to Serial and set the baud rate to 9600 (default).
V_AddrFix	Set to On or Off.
Net Mode	Set to serial port Network control to Serial or Paral.
Baudrate	Select 2400, 4800, 9600 or 38400.

Setup parameters are defined.

Restoring to Default Settings

To restore default settings:

1. On the IR remote press **MENU**. The menu appears.
2. Use the arrows to select **RESTORE DEFAULT**.
3. Click **HOME** to enter RESTORE DEFAULT menu.
4. Select Restore and then select **Yes**.

Default settings are restored.

Upgrading Firmware

Contact Tech support if you need to upgrade the firmware (support@kramerav.com).

Technical Specifications

Ports	USB-C 3.0	On a USB-C type B connector
	RS-232 IN	On a VISCA connector
	RS-232 OUT	On a VISCA connector
Camera	Pixel	207M
	Video System	1080P, 720P, 540P, 480P, 360P, 240P etc.
	Sensor	1/2.7inch, CMOS
	Scanning Mode	Progressive
	Lens	12x, f3.5mm~42.3mm, F1.8 ~ F2.8.
	Digital Zoom	16x
	Minimal Illumination	0.5 Lux @ (F1.8, AGC ON)
	Shutter	1/30s~1/10000s°
	White Balance	Auto, Indoor, Outdoor, One Push, Manual, VAR(2500K~8000K).
	Backlight Compensation	Support
	Digital Noise Reduction	2D&3D Digital Noise Reduction.
	Video S/N	≥55dB
	Horizontal Angle of View	72.5°~ 6.9°
	Vertical Angle of View	44.8°~ 3.9°
	Horizontal Rotation Range	±170
	Vertical Rotation Range	-30°~ +30
	Pan Speed Range	1.7°~ 100°/s
	Tilt Speed Range	0.7°~ 28°/s
	H & V Flip	Support
	Image Freeze	Support
Number of Presets	255	
Preset Accuracy	0.1°	
Video Format	YUY2 (BULK)	Up to 1080P@30fps
	YUY2 (ISOC)	Up to 1080P@30fps
	H.264 AVC	Up to 1080P@30fps
	MJPEG	Up to 1080P@30fps
USB Features	Operating System	Windows 7, Windows 8, Windows 10, Mac OS X, Linux, Android
	Color System / Compression	YUV 4:2:2 / H.264 / MJPEG
Controls	IR Remote Control Transmitter	OSD
	PC	RS-232 protocol VISCA commands
Power	Source	12V DC, 2A max.
	Consumption	12V DC, 800mA max.
Environmental Conditions	Operating Temperature	0° to +40°C (32° to 104°F)
	Storage Temperature	-20° to +60°C (-4° to 140°F)
	Humidity	10% to 90%, RHL non-condensing
	Altitude	Below 5000 meters
Regulatory Compliance	Safety	CE, FCC
	Environmental	RoHs, Reach
Enclosure	Type	Aluminum and plastic

General	Net Dimensions (W, D, H)	14.5cm x 9.8cm x 15cm (5.8" x 3.8" x 5.9")
	Shipping Dimensions (W, D, H)	23cm x 23cm x 25cm (9" x 9" x 9.8")
	Net Weight	0.94kg (2.1lbs) approx.
	Shipping Weight	2.61kg (5.7lbs) approx.
Accessories	Included	Power adapter and cord, 1 USB-C cable, remote controller, wall bracket, screws set, lens cover

Specifications are subject to change without notice at www.kramerav.com

Default Communication Parameters

RS-232	
Baud Rate:	9600
Data Bits:	8
Stop Bits:	1
Parity:	None
Command Format:	ASCII
Full Factory Reset	
OSD	Go to: Menu-> RESTORE DEFAULT -> confirm
Reset button	Press the RESET button for 5 seconds to reset the machine

The warranty obligations of Kramer Electronics Inc. ("Kramer Electronics") for this product are limited to the terms set forth below:

What is Covered

This limited warranty covers defects in materials and workmanship in this product.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

How Long this Coverage Lasts

The standard limited warranty for Kramer products is seven (7) years from the date of original purchase, with the following exceptions:

1. All Kramer VIA hardware products are covered by a standard three (3) year warranty for the VIA hardware and a standard three (3) year warranty for firmware and software updates; all Kramer VIA accessories, adapters, tags, and dongles are covered by a standard one (1) year warranty.
2. Kramer fiber optic cables, adapter-size fiber optic extenders, pluggable optical modules, active cables, cable retractors, ring mounted adapters, portable power chargers, Kramer speakers, and Kramer touch panels are covered by a standard one (1) year warranty. Kramer 7-inch touch panels purchased on or after April 1st, 2020 are covered by a standard two (2) year warranty.
3. All Kramer Calibre products, all Kramer Minicom digital signage products, all HighSecLabs products, all streaming, and all wireless products are covered by a standard three (3) year warranty.
4. All Sierra Video MultiViewers are covered by a standard five (5) year warranty.
5. Sierra switchers & control panels are covered by a standard seven (7) year warranty (excluding power supplies and fans that are covered for three (3) years).
6. K-Touch software is covered by a standard one (1) year warranty for software updates.
7. All Kramer passive cables are covered by a lifetime warranty.

Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

What Kramer Electronics Will Do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product. If a direct or similar replacement product is supplied, the original product's end warranty date remains unchanged and is transferred to the replacement product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

What Kramer Electronics Will Not Do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

How to Obtain a Remedy Under This Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, visit our web site at www.kramerav.com or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required (RMA number). You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

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Rev: 1



SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing

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We welcome your questions, comments, and feedback.

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