

4K ViewPro

Video Processor



User Manual

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General

Overview

- About This Manual
- Version History
- Symbols and Pictures

1.1 About This Manual

This user manual describes how to operate the 4K ViewPro video processor, as well as how to use the matched Web control page. It contains a complete description of the hardware and control terminal. This manual is designed to be a useful reference for your daily use of our product.



Always check for the latest version of all documents at www.pixelhue.com.

1.2 Version History

Version	Date	Changes
V1.1.0	02/17/2023	Updated the LED bar descriptions.
		Added the safety descriptions.
		Added the requirement for the used USB drive.
		Updated some descriptions.
V1.0.0	08/16/2020	First release

1.3 Symbols and Pictures

Symbol Overview

4	Danger	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.
		Indicates a hazard with a medium or low level of risk, which if not avoided, could result in minor or moderate injury.
Caution		Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
	Note	Provides additional information to emphasize or supplement important points of the main text.

Picture Overview

Images and pictures given in this manual are used for illustration purposes only. The actual product may vary due to product enhancement. The content of the images can be slightly different from reality, such as device types, installed modules, form and position of software windows on the screen.

2 Safety

Overview

- General Considerations
- Device Carrying
- Device Mounting
- Cable Requirements
- Electrical Safety
- Unpacking and Inspection
- Device Labels
- Notes and Cautions

2.1 General Considerations

To ensure that you can use this product correctly and safely, please be sure to observe the following precautions:

- Before performing any operation, make sure that you have read all the operating
 instructions provided by the device, especially the instructions that may
 endanger the personal safety and device safety, such as dangers, warnings and
 cautions, to minimize the probability of accidents.
- All the operations must conform to local safety codes. When the safety and precautionary measures described in this manual conflict with local safety codes, please follow the local codes.
- The personnel responsible for installing and maintaining the device must be professionals who have been trained and have mastered the correct operation methods and all safety precautions. Only trained and qualified personnel can perform device installation and maintenance.
- This device must be used in an environment that meets the design specifications; otherwise, it may cause device failure. The resulting device function abnormalities or component damage, personal safety accidents, property losses and other situations are not included within the scope of the device warranty.

2.1.1 General Safety

- When operating the device, you must strictly abide by the local laws and regulations. The safety precautions described in this manual are only a supplement to the local safety laws and regulations.
- The "Danger", "Warning" and "Caution" items described in this manual are only supplementary instructions for all safety precautions.
- To ensure personal and device safety, please strictly follow all the safety precautions on the device labels and described in this manual when installing the device.

2.1.2 Environmental Requirements

- Ensure adequate air flow in the equipment room.
- Take necessary measures to prevent dust, water and static electricity.
- Avoid long-term direct sunlight.
- Keep the device away from heat and ignition sources.
- Do not place the device in an explosive atmosphere.
- Do not place the device in a corrosive environment.
- Do not place the device in a strong electromagnetic environment.

The following table outlines the physical environment where the device can be safely stored and operated.

Environmental Requirements	Operating Environment	Storage Environment
Temperature	0°C to 45°C	−20°C to +70°C
Humidity	0% RH to 80% RH, non-condensing	0% RH to 95% RH, non-condensing
Air Cleanliness	ISO 14644-1 ISO 9	N/A

2.1.3 Device Safety

- Before operating, fix the device on the floor or other stable objects, such as a wall or mounting bracket.
- During transportation and use of the device and its packaging, the device must be fixed stably to avoid falling.
- Do not step on, hit and violently operate the device and its packaging to prevent damage to the device or packaging box.
- Do not block the ventilation openings during operation.
- Tighten the board or card screws with a tool.
- After the installation, remove the empty packing materials from the device area.
- Save the packing box and materials for possible storage and transportation in the future.
- Always wear anti-static wrist bands and insulating gloves when touching the static-sensitive components.
- Avoid dropping any object into the chassis.
- Keep the device away from conductors that are easy to induce lightning to avoid lightning strikes to the device.
- Do not make the circuit faces of the boards or cards contact each other.
- Do not touch the circuit, components, connectors or wiring slots of the boards or cards with bare hands.
- Do not repair the device without authorization. Only trained professionals can maintain the device. You can contact Pixelhue at any time if needed.
- Always use the spare parts recommended by Pixelhue.
- Regularly clean the dust on the heat dissipation holes to prevent the dust from blocking the holes and thus affect the heat dissipation of the device.

2.1.4 Personal Safety

- Place the device in a stable location to prevent personal injury caused by falling.
- Avoid bare wires and maintain or replace them in time when they are damaged.
- Do not operate the device and connect cables outdoors under thunderstorms.
- Do not wear watches, rings, or other metal jewelry when installing spare parts or maintaining the device.

2.2 Device Carrying

- Do not relocate a powered device, and do not take any objects that may cause danger to the relocation.
- Always pay attention to the wheels at the bottom of the flight case during transportation to avoid them being jammed by stones or deformed due to external forces.
- Always hold the handles of the flight case firmly when pushing a flight case with wheels. Do not stack other devices on the flight case.
- The relocated device should be repacked in the original factory packaging.
- When handling or placing the boards or cards, bare board components or modules, always package them individually.
- When carrying the device with your bare hands, always wear protective gloves to avoid injury.
- When carrying the device, handle it gently and always hold the handles of the device or drag the bottom edge of the device. Do not hold the handles of a device component.
- When the device weight exceeds the carrying limit of a single person, carry it with multiple people or use a carrying tool.
- When using a forklift or handcart for transportation, place the device stably to ensure the device will not tip over.

The following table lists the maximum weights that adults can carry at a time specified by some organizations for your reference.

Organization	Weight
CEN (European Committee for Standardization)	25 kg/55.13 lb
ISO (International Organization for Standardization)	25 kg/55.13 lb
NIOSH (National Institute for Occupational Safety and Health)	23 kg/50.72 lb
HSE (Health and Safety Executive)	25 kg/55.13 lb
General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China	Male: 15 kg/33.08 lb Female: 10 kg/22.05 lb

2.3 Device Mounting

When the device is installed on a desktop or into a rack, the desktop or rack must bear at least 4 times the device weight.

2.3.1 Mounting on a Desktop

- Ensure the stability and grounding of the desktop or working table.
- Ensure that the device is placed horizontally and do not turn it over or hang it on the wall.
- Do not place other objects on the device.

- Do not put water cups, beverages and other containers with liquid close to or on the device to avoid liquid leakage and thus cause safety hazards.
- If any object or liquid accidentally enters the device, stop using the device and disconnect the power cord and all cables connected to the device immediately, and then contact the after-sales personnel.
- When handling a flight case with wheels, please lock and fix the wheels to prevent the device from sliding.
- When stacking, ensure all the devices are stacked stably to avoid device damage and personal injury caused by falling.

2.3.2 Mounting into a Rack

- The rack must be fixed properly to avoid tilting and falling, and thus cause personal injury and device damage.
- When a device is mounted into a rack, all mounting holes must be fixed with screws.
- Ensure the rack is well ventilated. It is recommended to reserve at least 1U space between the stacking devices, and the heat dissipation vents must not be obstructed and keep at least 10 cm distance from other objects.

2.3.3 Grounding

- Connect the grounding wire first when installing a device, and disconnect the grounding wire at last when removing the device.
- The connecting surface of the grounding wire and the device must have good conductivity. Spray painting is strictly prohibited, and there must be sufficient fastening force between the connecting parts.
- Do not operate the device when the grounding conductor is not installed.
- There must be no joints in the middle of the grounding wire, and it is strictly prohibited to install a switch or fuse on the grounding wire.
- For devices using a three-pin socket, ensure that the ground terminal in the three-pin socket is well grounded.

2.4 Cable Requirements

2.4.1 Power Cords



! Warning:

Do not install or remove the power cord when the device is powered on. When the power cord core contacts the conductor, an electric arc or spark will be generated which may result in fire or eye injury.

- Protect the power cord properly to prevent it from being punctured to avoid personal injury or fire caused by a short circuit.
- To ensure the safety of the device and personnel, be sure to use the matched power cord.

- User-supplied cables must comply with local cable regulations and device cable requirements.
- Before installing or removing the power cord, turn off the device power first.
- Check the electrical plug regularly and wipe off the dirt or dust accumulated on the plug.
- Before connecting the power cord, read the labels or markings on the power cord to make sure it is a matched one.

The device is intended to operate from an AC power source with a voltage range of AC $100-240V\sim$, 50/60Hz. Various standard plugs are shown in the figure below.



EEarthNNeutralLLive

2.4.2 Signal Cables

- Before using a DVI signal cable, check whether the pins on the cable connector are vertical and even. If not, please replace the cable.
- Before connecting the signal cable to the device, check whether there is any object in the device connector. If yes, remove the object first.
- If the signal cable has not been used for a long time, discharge static electricity before using it.
- Under normal working conditions of the device, it is recommended that nontechnical professionals do not perform hot-swapping to avoid device damage.

2.4.3 Miscellaneous

- Signal cables must be bound separately from strong current cables or high voltage cables.
- When the temperature is too low, severe shock and vibration may cause brittle cracking of the plastic sheath of the cable. All cables should be laid and installed when the temperature is above zero.
- If the storage temperature of the cable is below zero, the cable must be moved to room temperature and stored for more than 24 hours before laying and installation.
- When carrying cables, especially in a low-temperature environment, always handle the cable with care. Violent handling, such as pushing down the cables directly from a high place, is prohibited.

2.5 Electrical Safety

2.5.1 Battery

- The battery is not intended to be replaced.
- Always follow the relevant instructions to dispose of batteries.
- Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery can result in an explosion.
- Leaving a battery in an extremely high temperature surrounding environment can result in an explosion or the leakage of flammable liquid or gas.
- A battery subjected to extremely low air pressure may result in an explosion or the leakage of flammable liquid or gas.

2.5.2 Electromagnetic Interference

- Keep the device away from transformers, high-voltage power lines and highcurrent devices.
- Keep the device away from high-power broadcast transmitters.
- If there is a mobile communication transmitter around the device, its interference degree should meet the requirements of relevant standards. If needed, take necessary measures to prevent interference, such as shielding and isolation.
- When using hand-held wireless communication devices, such as interphones, keep at least 30 cm away from the device.

2.5.3 Anti-Static

- Always wear anti-static wrist bands and insulating gloves when touching the static-sensitive components.
- Always hold the board by the edges to avoid touching the circuits or components, and do not touch the chip with your hands.
- The disassembled board must be packaged with anti-static packaging material before storage or transportation.

2.6 Unpacking and Inspection

2.6.1 Unpacking

- After receiving the device, check whether the packing box is damaged. If there is any damage, do not open the box and contact the carrier in time to confirm the damage to the device and matters related to compensation.
- After unpacking, save the packing box and materials for possible storage and transportation in the future.

2.6.2 Inspection

- When the packing box is in perfect condition, unpack the box. Check the appearance of the device for damage. If there is damage, please contact the salesperson.
- Check the box contents according to the packing list described in the certificate of approval. If any item is missing, please contact the salesperson in time.

2.7 Device Labels

Labels	Description
4	Shock hazard
SHOCK NAZARD WOODS IN AND PICK OCCONSECUTAL SHOCK NAZARD WOODS IN AND PICK OCCONSECUTATION	Multiple power inputs The device is powered by multiple power supplies. Disconnect all power cords when the device is powered off.
WARRANTY VOID IF REMOVED	Warranty void if removed Do not open the chassis. If this label is damaged, the device will not be covered by the warranty.
CAUTION CONNECT GROUND WIRE BEFORE USING	Grounding The two ends of the grounding wire are connected to the device and the grounding point respectively, which means that the device must be grounded through the grounding point to ensure the normal operation of the device and the personal safety of the operators.
CAUTION SENSITYE ELECTRONIC DEVICE DO NOT SHIP OR STORE NEAR STRONG ELECTROMAGNETIC ELECTROSTATIO OR RADIDACTIVE PREDS	Sensitive electronic device Keep the device away from areas with strong electromagnetic radiation to avoid electromagnetic interference and thus affect the image output quality.
CAUTION HEAVY OBJECT TEAM LIFTING REQUIRED	Device carrying The device needs to be carried by multiple people.

2.8 Notes and Cautions

2.8.1 Installation Notes

When the product needs to be installed on the rack, 8 screws at least M6*16 should be used to fix it. The rack for installation shall bear at least four times the total weight of the mounted equipment.

 Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

- Reduced Air Flow Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- Mechanical Loading Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- Circuit Overloading Consideration should be given to the connection of the
 equipment to the supply circuit and the effect that overloading of the
 circuits might have on overcurrent protection and supply wiring. Appropriate
 consideration of equipment nameplate ratings should be used when
 addressing this concern.
- Reliable Earthing Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

2.8.2 FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

2.8.3 Others

- This is Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.
- This product can only be placed horizontally. Do not mount vertically or upsidedown.
- Please read the specifications thoroughly and use the product in accordance
 with the requirements. If you have any questions about the specifications, please
 contact us immediately. If you use the product improperly, not following the
 requirements, or for illegal purposes, you shall be solely responsible for any
 consequences arising therefrom.
- If the product does not have the relevant certifications required by the countries or regions where it is to be sold, please contact PIXELHUE to confirm or address the problem. Otherwise, the customer shall be responsible for the legal risks caused or PIXELHUE has the right to claim compensation.

3 Overview

About This Chapter

This chapter is designed to describe the hardware appearance, features and specifications of the 4K ViewPro.

Overview

- Introduction
- Features
- Appearance
- Dimensions

3.1 Introduction

The 4K ViewPro is the real 4K video processor around the globe, which supports 4K×2K@60Hz video input and output.

Designed with a hardware-based FPGA system architecture and high-performance Scaler core, the 4K ViewPro allows input and output scaling and offers you a perfect experience of image processing.

With powerful capabilities like receiving of a variety of video signals and ultra HD 4K×2K@60Hz image processing and output, the 4K ViewPro can be widely used for high-end rental, stage control, fine-pitch LED displays and video conversion.

3.2 Features

- A wide range of video inputs: 1x DP 1.2, 1x HDMI 2.0, 2x dual link DVI and 2x 12G-SDI with loop output
- A wide range of video outputs: 1x HDMI 2.0, 1x dual link DVI, 1x12G-SDI and 1x HDBaseT
- Up to 6x inputs and 5x outputs
- Up to 4K×2K@60Hz 4:4:4 video input and input source image scaling supported
- Custom EDID
- Picture in Picture (PIP) function
 The position and size of PIP can be adjusted and controlled as you like.
- Layer freezing, blackout, test patterns, output color adjustment and other functions
- Easy device operation, control and monitoring via mobile devices or Web
- Strobe function supported
 Simple operations allow for on-site strobe display effect.

3.3 Appearance

3.3.1 Front Panel





All product pictures shown in this document are for illustration purposes only. Actual product may vary.

No.	Button	Description		
1	Power	Press the button to turn on the device.		
	button	 Hold down the button and select Yes on the TFT screen to turn off the device. 		
2	LED bar	Display the device running status.		
		Always on: The device is running normally.		
		Flashing: The device is running abnormally.		
3	Input source	Display the signal statuses of input sources and switch the input sources quickly.		
	buttons	Status LEDs:		
		Green: Input source is accessed and in use.		
		Yellow: Input source is accessed but not in use.		
		Off: No input source is accessed or input source is abnormal.		
		• Red, off after flashing 5s: Input source is not accessed but in use.		
		Press the input source button to switch the input source of main layer. Hold it down for 4s to switch the input source of PIP.		
4	TFT screen	Display the current device status and settings menu.		
5	Knob	On the home screen, press the knob to enter the operation menu screen.		
		On the operation menu screen, rotate the knob to select a menu item, and press the knob to confirm the selection or enter the submenu.		
		When a menu item with parameters is selected, you can rotate the knob to adjust the parameters. Please note that after adjustment, you need to press the knob again to confirm the adjustment.		
6	ESC	Exit the current menu or cancel the operation.		
7	Function	SCALE: Enter the image scaling menu.		
	buttons	• PIP: Enable/Disable PIP.		

Status LEDs:				
	– On: PIP is enabled.			
- Off: PIP is disabled.				
		• FN: Custom function button (Layer Swap)		
		TEST: Enter the test pattern menu.		
		• FRZ: Freeze the display.		
		BLACK: Make the display fade to black.		
8	USB	For device update and importing/exporting preset/BKG/LOGO files		
		Note:		
		The file system of the USB drive you use must be FAT32.		

3.3.2 Rear Panel



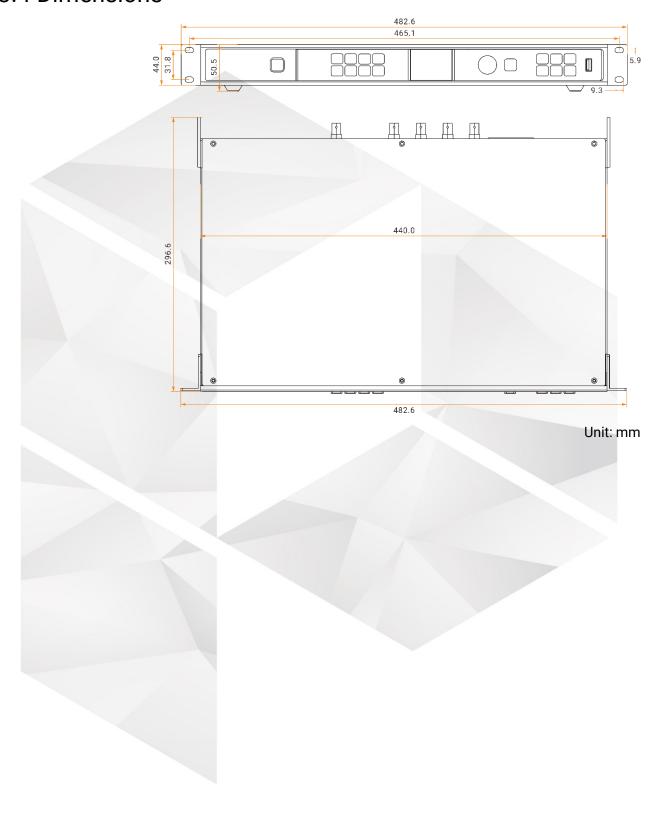


All product pictures shown in this document are for illustration purposes only. Actual product may vary.

Input			
Connector	Qty	Description	
DUAL DVI	2	VESA standard compliant Input resolution up to 4K×2K@30Hz and downward compatible HDCP 1.4 compliant	
12G-SDI	2	Input resolution up to 4K×2K@60Hz and downward compatible 12G-SDI loop output	
DP 1.2	1	Input resolution up to 4K×2K@60Hz and downward compatible	
HDMI 2.0	1	Input resolution up to 4K×2K@60Hz and downward compatible HDCP 2.2 compliant	
Output	Output		
Connector	Qty	Description	
HDBaseT	1	Output resolution up to 4K×2K@30Hz when sampling rate is 4:2:0 and downward compatible	
DUAL DVI	1	Output resolution up to 4K×2K@30Hz and downward compatible	

100.001		0.4.4	
12G-SDI	1	Output resolution up to 4K×2K@60Hz and downward compatible	
HDMI 2.0	1	Input resolution up to 4K×2K@60Hz and downward compatible	
		HDCP 2.2 and EDID 1.3 compliant	
DP 1.2	1	Input resolution up to 4K×2K@60Hz and downward compatible	
Control			
Connector	Qty	Description	
ETHERNET	1	For PC communication or network connection	
USB (Type-B)	1	For device debugging	
Genlock IN-LOOP	1	For connecting a synchronization signal to synchronize cascaded devices	
Overall Specifications			
Connector	Qty	Description	
Power connector	1	100-240V~, 50/60Hz, 2.1A	
Power switch	1	Press ON to power on the device.	
		Press OFF to power off the device.	

3.4 Dimensions



4 Applications

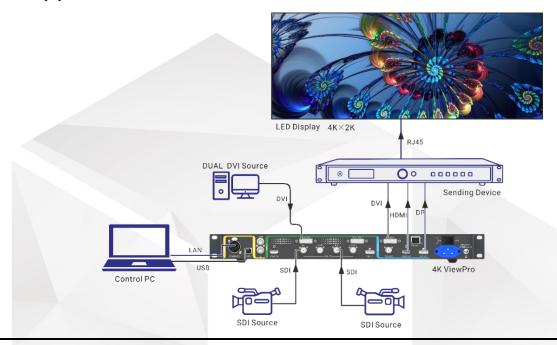
About This Chapter

This chapter describes the connections of a typical application scenario of the 4K ViewPro and the installation instructions.

Overview

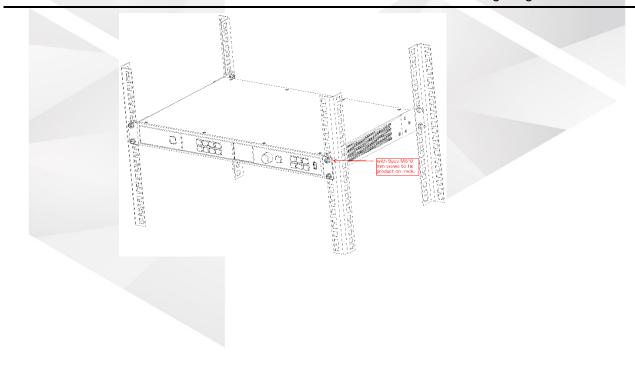
Applications

4.1 Applications



Installation Instructions

When the product needs to be installed on the rack, 8 screws at least M5*8 should be used to fix it. The rack for installation shall bear at least 20 kg weight.



5 Menu Operations

About This Chapter

This chapter is designed to describe the front panel menus and menu operations of the 4K ViewPro.

Overview

- Operation Instructions
- Home Screen
- Input Settings
- Output Settings
- Layer Settings
- Preset Settings
- Display Control
- General Settings
- Communication Settings
- Language

5.1 Operation Instructions

Knob

- On the home screen, press the knob to enter the main menu screen.
- On the main menu screen, rotate the knob to select a menu item, and press the knob to confirm the selection or enter the submenu.
- When a menu item with parameters is selected, rotate the knob to adjust the parameters. Please note that after adjustment, please press the knob again to confirm the adjustment.

ESC

Press the button to exit the current menu or cancel the operation.

Lock/Unlock

Hold down the knob and ESC button for 3s or longer to lock or unlock the buttons.

5.2 Home Screen

When the device is powered on, the TFT screen displays the home screen.

Figure 5-1 Home screen



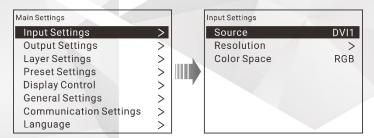
Icon	Description		
4K ViewPro	Device name		
192.168.1.111	Device IP address		
<u></u>	Front panel lock status		
Main	Main layer status, input source and input resolution of main layer • Highlighted: Main layer is enabled.		

	Gray: Main layer is not enabled		
PIP	PIP status, input source and input resolution of PIP • Highlighted: PIP is enabled. • Gray: PIP is not enabled		
Backup	Status of input source hot backup • Backup : Input source hot backup is not enabled. • Backup : Input source hot backup is enabled.		
Web	Device control status The device is controlled via Web.		
GEN	Synchronization status GEN: Genlock is not enabled. GEN: Genlock is enabled. GEN: Genlock is abnormal.		
Res	Current output resolution		
Preset	Current preset name		

5.3 Input Settings

Press the knob to enter the main menu screen. Rotate the knob to select **Input Settings** and press the knob to enter the input settings screen.

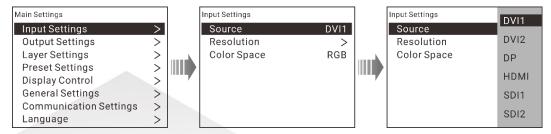
Figure 5-2 Input settings



5.3.1 Input Source

On the **Input Settings** screen, **Source** is selected by default. Press the knob to enter the source selection screen. Rotate the knob to select an input source and press the knob to confirm the selection.

Figure 5-3 Input source



5.3.2 Input Resolution

The 4K ViewPro supports input resolution settings. Standard resolution and custom resolution are both supported.

On the **Input Settings** screen, rotate the knob to select **Resolution** and press the knob to enter the input resolution settings screen.



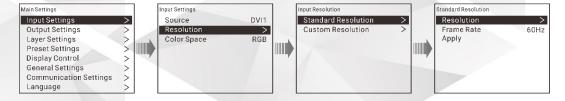
Note:

When the input source is SDI, input resolution settings are not supported.

Standard Resolution

- Standard Resolution is selected by default. You can rotate the knob to select a desired resolution and frame rate.
- After you have set the resolution and frame rate, rotate the knob to select Apply and press the knob to make the settings take effect.

Figure 5-4 Standard resolution settings





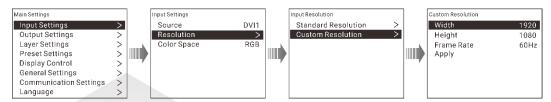
Note:

When you select different input sources, the resolutions under **Standard Resolution** are different.

Custom Resolution

Rotate the knob to select **Custom Resolution** and press the knob to enter the custom resolution settings screen. Rotate the knob to select a desired width, height and frame rate.

Figure 5-5 Custom resolution settings



After you have set the width, height and frame rate, rotate the knob to select **Apply** and press the knob to make the settings take effect.

5.3.3 Color Space

The device can automatically identify the color space type of the current input source

The color space types supported by the input connector are as followings.

DVI: RGB, YCbCr

HDMI: RGB, YCbCr

DP: RGB, YCbCr

DUAL DVI: RGB, YCbCr

SDI: SMPTE level-A, SMPTE level-B



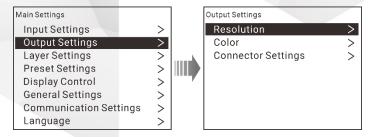
Note:

When there is no input source accessed, No Signal is displayed here.

5.4 Output Settings

On the main menu screen, rotate the knob to select **Output Settings** and press the knob to enter the output settings screen.

Figure 5-6 Output settings



5.4.1 Ouput Resolution

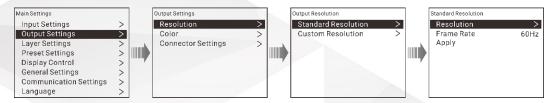
The 4K ViewPro supports output resolution settings. Standard resolution and custom resolution are both supported.

On the **Output Settings** screen, rotate the knob to select **Resolution** and press the knob to enter the output resolution settings screen.

Standard Resolution

Standard Resolution is selected by default. You can rotate the knob to select a desired resolution and frame rate.

Figure 5-7 Standard resolution settings



After you have set the resolution and frame rate, rotate the knob to select **Apply** and press the knob to make the settings take effect.

Custom Resolution

Rotate the knob to select **Custom Resolution** and press the knob to enter the custom resolution settings screen. Rotate the knob to select a desired width, height and frame rate.

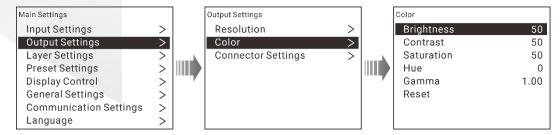
Figure 5-8 Custom resolution settings



5.4.2 Output Color

Rotate the knob to select **Color** and press the knob to enter the output color settings screen. When a color parameter is selected, press the knob and the parameter color turns blue. Rotate the knob to adjust the parameter value. For detailed parameter settings, please refer to Table 5-1.

Figure 5-9 Output color settings



Name Value **Default** Description Range Value **Brightness** 0 - 10050 Adjust the screen brightness. The larger the value, the brighter the screen will Contrast 0 - 10050 Adjust the difference between the darkest and brightest areas of the image displayed on the The larger the value, the bigger this difference will be. 0 - 10050 Adjust the purity or vividness grade of the Saturation image color. The larger the value, the purer the color will be. -180 - 1800 Hue Adjust the gradation or variety of the image color. The larger the value, the more intense the color will be. Gamma 0.25 -1.00 Adjust the degree of distortion of the image 4.00 color. The larger the value, the more distorted the color will be.

Table 5-1 Output color parameter settings

5.4.3 Connector Settings

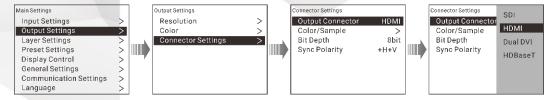
Reset

Set the output connector, color space/sampling rate, bit depth and sync polarity.

On the main menu screen, go to **Output Settings** > **Connector Settings** and press the knob to enter the output connector settings screen.

Reset the settings to defaults.

Figure 5-10 Output connector settings



Rotate the knob to select the desired parameter and press the knob to confirm the selection.

Output Connector
 Set the signal output connector. DP is selected by default.

Color/Sample

Set the color space and sampling rate of the current output connector.

Bit Depth

8 bit, 10 bit and 12 bit are supported.

Sync Polarity

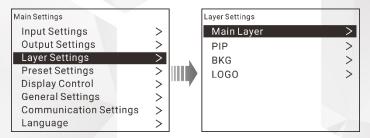
Set the output sync polarity for the compatibility with the connected device.

5.5 Layer Settings

The 4K ViewPro supports the settings of the main layer, PIP, BKG and LOGO.

On the main menu screen, rotate the knob to select **Layer Settings** and press the knob to enter the layer settings screen.

Figure 5-11 Layer settings



5.5.1 Main Layer

On the **Layer Settings** screen, rotate the knob to select **Main Layer** and press the knob to enter the main layer settings screen.

Status

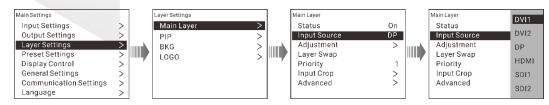
Set to turn on or turn off the main layer function.

- On: Turn on the main layer function.
- Off: Turn off the main layer function.

Input Source

Rotate the knob to select the input source for main layer.

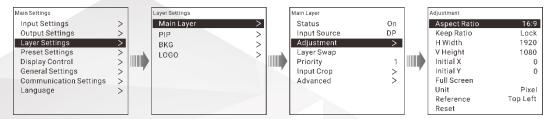
Figure 5-12 Selecting input source



Adjustment

On the **Main Layer** screen, rotate the knob to select **Adjustment** and press the knob to enter the main layer adjustment screen.

Figure 5-13 Adjustment



- Aspect Ratio: Set the proportional relationship between the layer width and height.
- Keep Ratio: Lock or unlock the aspect ratio.
 - Lock: The aspect ratio is a fixed ratio. You can set the vertical height and horizontal width based on the selected aspect ratio.
 - For example, the aspect ratio is set to 2:1 and you lock the ratio, then you can set the vertical height and you cannot set the horizontal width which will be automatically adjusted based on the set ratio.
 - Unlock: You can customize the aspect ratio and the vertical height and horizontal width can be adjusted freely.
- H Width: Adjust the layer width.
- V Height: Adjust the layer height.
- Initial X: Adjust the horizontal initial coordinate of the layer. The default value is
 0.
- Initial Y: Adjust the vertical initial coordinate of the layer. The default value is **0**.
- Full Screen: Display the layer in full screen.
 - H: The layer fills the screen horizontally, but remains the same vertically.
 - V: The layer fills the screen vertically, but remains the same horizontally.
 - H+V: The layer fills the whole screen.
- Unit: Set the adjustment unit. Pixel and percentage are supported.
- Reference: Set the adjustment reference.
 - Top Left: Set the top left corner as the reference point.
 - Center: Set the center point as the reference point.
- Reset: Reset the settings to defaults.

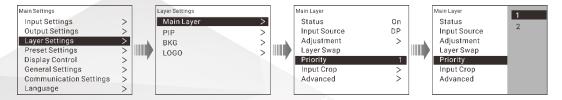
Layer Swap

Swap the input source image of main layer and PIP.

Priority

Set the layer priority. On the **Main Layer** screen, rotate the knob to select **Priority** and press the knob to enter the priority setting screen.

Figure 5-14 Main layer priority



- 1: The main layer is sent to back.
- 2: The main layer is brought to front.

Input Crop

Crop the input source image and display it in full screen.

Figure 5-15 Input crop

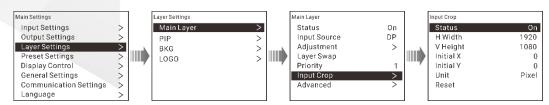


Input: 1920×1080@60Hz

Layer Size: 1920×1080

- Step 1 On the **Layer Settings** screen, rotate the knob to select **Main Layer** and press the knob to enter the main layer settings screen.
- Step 2 Rotate the knob to select **Input Crop** and press the knob to enter the input crop screen.

Figure 5-16 Input crop



- Step 3 On the **Input Crop** screen, **Status** is selected by default. Rotate the knob to select **On** to turn on the input crop function.
- Step 4 Rotate the knob to set the related parameters for input crop function.

- H Width: Set the horizontal width of the current input source after cropping.
- V Height: Set the vertical height of the current input source after cropping.
- Initial X: Set the horizontal initial coordinate of the cropped part upon the current input source with the top left corner as the reference point.
- Initial Y: Set the vertical initial coordinate of the cropped part upon the current input source with the top left corner as the reference point.
- Unit: Set the adjustment unit. Pixel and percentage are supported.
- Reset: Reset the settings to defaults.

Advanced

Set the layer mask, opacity, flipping and color.

Layer Mask
 Mask certain part of the layer image.

Figure 5-17 Mask



 On the Advanced screen, rotate the knob to select Layer Mask and press the knob to enter the layer mask settings screen.

Figure 5-18 Layer mask



- b. Rotate the knob to set the mask-related parameters.
- Mask Top: Set the area to be masked on the top.
- Mask Bottom: Set the area to be masked on the bottom.
- Mask Left: Set the area to be masked on the left.
- Mask Right: Set the area to be masked on the right.
- Unit: Set the unit. Pixel and percentage (default) are supported.
- Reset: Reset the settings to defaults.

Opacity

Set the opacity of the layer. The range is 0% (transparent)–100% (nontransparent). The default value is **100%**.

Layer Flip

Set the image flipping mode. The options are Off, H, V and H/V.

- Off: No flipping
- H: The layer is flipped horizontally.
- V: The layer is flipped vertically.
- H+V: The layer is flipped both horizontally and vertically.

Layer Color

Rotate the knob to select **Layer Color** and press the knob to enter the layer color settings screen.

Figure 5-19 Layer color



Table 5-2 Layer color

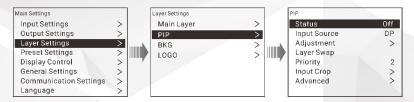
Name	Value Range	Default Value	Description
Brightness	0-100	50	Adjust the screen brightness.
			The larger the value, the brighter the screen will be.
Contrast	0-100	50	Adjust the difference between the darkest and brightest areas of the image displayed on the screen. The larger the value, the bigger this difference will be.
Saturation	0-100	50	Adjust the purity or vividness grade of the image color. The larger the value, the purer the color will be.
Hue	-180-	0	
пие	180	U	Adjust the gradation or variety of the image color.
			The larger the value, the more intense the color will be.
Monochrome	• On • Off	Off	On: Turn on the monochrome function for main layer.
			Off: Turn off the function.

Invert Colors	• On • Off	Off	On: Turn on the invert colors function for main layer.Off: Turn off the function.
Reset			Reset the settings to defaults.

5.5.2 PIP

On the **Layer Settings** screen, rotate the knob to select **PIP** and press the knob to enter the PIP settings screen.

Figure 5-20 PIP



Status

On the PIP screen, **Status** is selected by default. You can select to turn on or turn off the PIP function.

- On: Turn on the PIP function. When PIP is turned on, the PIP button on the front panel is lit and green.
- Off: Turn off the PIP function. You can also press the PIP button on the front panel to turn off the PIP.

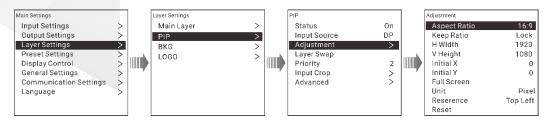
Input Source

Rotate the knob to select the input source for PIP. The input sources include DVI 1, DVI 2, DP, HDMI, SDI 1 and SDI 2.

Adjustment

On the **PIP** screen, rotate the knob to select **Adjustment** and press the knob to enter the PIP adjustment screen.

Figure 5-21 Adjustment



 Aspect Ratio: Set the proportional relationship between the layer width and height.

- · Keep Ratio: Lock or unlock the aspect ratio.
 - Lock: The aspect ratio is a fixed ratio. You can set the vertical height and horizontal width based on the selected ratio.
 - For example, the aspect ratio is set to 2:1 and you lock the ratio, then you can set the vertical height and you cannot set the horizontal width which will be automatically adjusted based on the set ratio.
 - Unlock: You can custom the aspect ratio and the vertical height and horizontal width can be adjusted freely.
- H Width: Adjust the layer width.
- V Height: Adjust the layer height.
- Initial X: Adjust the horizontal initial coordinate of the layer. The default value is
 0.
- Initial Y: Adjust the vertical initial coordinate of the layer. The default value is 0.
- Full Screen: Set the layer to display in full screen.
 - H: The layer fills the screen horizontally, but remains the same vertically.
 - V: The layer fills the screen vertically, but remains the same horizontally.
 - H+V: The layer fills the whole screen.
- Unit: Set the adjustment unit. Pixel and percentage are supported.
- Reference: Set the adjustment reference.
 - Top Left: Set the top left corner as the reference point.
 - Center: Set the center point as the reference point.
- Reset: Reset the settings to defaults.

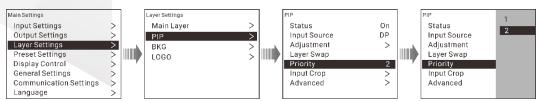
Layer Swap

Swap the input source image of main layer and PIP.

Priority

Set the layer priority. On the **PIP** screen, rotate the knob to select **Priority** and press the knob to enter the priority setting screen.

Figure 5-22 PIP priority



- 1: The PIP is sent to back.
- 2: The PIP is brought to front.

Input Crop

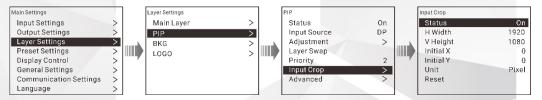
Crop the input source image and make it fill the layer.

Figure 5-23 Input crop



- Step 1 On the **Layer Settings** screen, rotate the knob to select **PIP** and press the knob to enter the PIP settings screen.
- Step 2 Rotate the knob to select **Input Crop** and press the knob to enter the input crop screen.

Figure 5-24 Input crop



- Step 3 On the **Input Crop** screen, **Status** is selected by default. Rotate the knob to select **On** to turn on the input crop function.
- Step 4 Rotate the knob to set the related parameters for input crop function.
 - H Width: Set the horizontal width of the current input source after cropping.
 - V Height: Set the vertical height of the current input source after cropping.
 - Initial X: Set the horizontal initial coordinate of the cropped part upon the current input source with the top left corner as the reference point.
 - Initial Y: Set the vertical initial coordinate of the cropped part upon the current input source with the top left corner as the reference point.
 - Unit: Set the adjustment unit. Pixel and percentage are supported.
 - Reset: Reset the settings to defaults.

Advanced

Set the layer layout mask, opacity, flipping and color.

Layer Mask
 Mask certain part of the layer.

Figure 5-25 Mask



 On the PIP screen, go to Advanced > Layer Mask and press the knob to enter the layer mask settings screen.

Figure 5-26 PIP mask



- 2. Rotate the knob to set the mask-related parameters.
 - Mask Top: Set the area to be masked on the top.
 - Mask Bottom: Set the area to be masked on the bottom.
 - Mask Left: Set the area to be masked on the left.
 - Mask Right: Set the area to be masked on the right.
 - Unit: Set the unit. Pixel and percentage (default) are supported.
 - Reset: Reset the settings to defaults.

Opacity

Set the opacity of the layer. The range is 0% (transparent)–100% (nontransparent). The default value is **100%**.

Layer Flip

Set the image flipping mode. The options are Off, H, V and H/V.

- Off: No flipping
- H: The layer is flipped horizontally.
- V: The layer is flipped vertically.
- H+V: The layer is flipped both horizontally and vertically.

Layer Color

Rotate the knob to select **Layer Color** and press the knob to enter the layer color settings screen.

Figure 5-27 Layer color



Figure 5-28 Layer color

Name	Value Range	Default Value	Description
Brightness	0-100	50	Adjust the screen brightness. The larger the value, the brighter the screen will be.
Contrast	0-100	50	Adjust the difference between the darkest and brightest areas of the image displayed on the screen. The larger the value, the bigger this difference will be.
Saturation	0-100	50	Adjust the purity or vividness grade of the image color. The larger the value, the purer the color will be.
Hue	-180- 180	0	Adjust the gradation or variety of the image color. The larger the value, the more intense the color will be.
Monochrome	• On • Off	Off	 On: Turn on the monochrome function for PIP. Off: Turn off the function.
Invert Colors	• On • Off	Off	 On: Turn on the invert colors function for PIP. Off: Turn off the function.
Reset			Reset the settings to defaults.

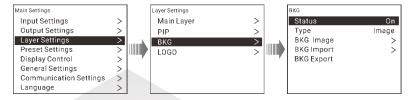
Layout

Set the layout of PIP and main layer. The supported layouts include **Top Left**, **Bottom Left**, **Top Right**, **Bottom Right**, **Center** (default), **T+B** and **L+R**.

5.5.3 BKG

The 4K ViewPro supports BKG settings. On the **Layer Settings** screen, rotate the knob to select **BKG** and press the knob to enter the BKG settings screen.

Figure 5-29 BKG settings



- Step 1 Turn on or turn off the BKG function.
- Step 2 Set the BKG type. The options are **Pure Color** or **Image**.
 - Pure Color: Set the individual R, G and B values to set the color for BKG.
 - Image: Select a local image as the BKG image.
- Step 3 (Optional) Select **BKG Import** to import BKG images from USB drive.
- Step 4 (Optional) Select **BKG Export** to export BKG images to USB drive.



Note:

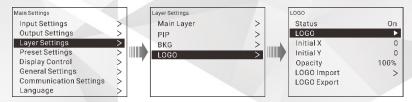
The 4K ViewPro supports importing up to 16 BKG images. The BKG image size should be no greater than 4090×2160.

BKG import and export functions are available when an USB drive is connected to the 4K ViewPro.

5.5.4 LOGO

On the **Layer Settings** screen, rotate the knob to select **LOGO** and press the knob to enter the LOGO settings screen.

Figure 5-30 LOGO settings



- Step 1 Turn on or turn off the LOGO function.
- Step 2 Select the desired LOGO image.
- Step 3 Select **Initial X** to set the horizontal initial coordinate of LOGO image.
- Step 4 Select **Initial Y** to set the vertical initial coordinate of LOGO image.
- Step 5 Select **Opacity** to set the opacity of LOGO image. The range is 0% (transparent)– 100% (nontransparent).
- Step 6 (Optional) Select **LOGO Import** to import BKG images from USB drive.
- Step 7 (Optional) Select **LOGO Export** to export BKG images to USB drive.



The 4K ViewPro supports importing up to 16 LOGO images.

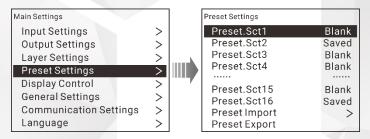
LOGO import and export functions are available when an USB drive is connected to the 4K ViewPro.

5.6 Preset Settings

The 4K ViewPro supports up to 16 user presets. Users can save, load and clear the configured presets.

On the main menu screen, rotate the knob to select Preset Settings and press the knob to enter the preset settings screen.

Figure 5-31 Preset settings

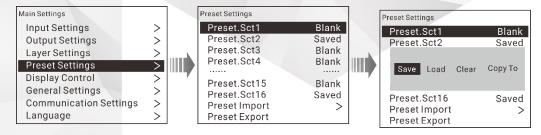


5.6.1 Save Presets

After you have completed the layer settings, you can save all the settings as a preset.

On the preset settings screen, select a blank preset and press the knob to save the layer settings to the selected preset.

Figure 5-32 Saving preset



5.6.2 Load Presets

Rotate the knob to select a saved preset and press the knob to enter the preset options screen. You can select **Load** to load the selected preset.

5.6.3 Clear Presets

Clear all the contents in the selected preset.

Rotate the knob to select a saved preset and press the knob to enter the preset options screen. You can select **Clear** to clear the selected preset.

5.6.4 Copy Presets

The 4K ViewPro supports preset copying function. You can copy a saved preset data to another preset.

Rotate the knob to select a saved preset and press the knob to enter the preset options screen. You can select **Copy to** to copy the selected preset data to another preset.

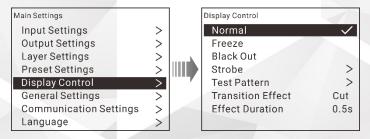
5.6.5 Import and Export Presets

The 4K ViewPro allows for importing preset files from USB drive or exporting preset files to USB drive.

5.7 Display Control

On the main menu screen, rotate the knob to select **Display Control** and press the knob to enter the display control setting screen.

Figure 5-33 Display control





Note:

The display modes (**Normal**, **Strobe**, **Freeze** and **Black Out**) are mutual excluded between each other. When you select one, the other one is deselected.

When Freeze or Black Out is selected, test patterns are unavailable.

Normal

Display the content of current input source normally.

Freeze

Freeze the current frame of the output image.

Black Out

Make the output go black.

- Strobe
 - Status: Turn on or turn off the strobe function.

 Rate (Frames): Adjust the strobe rate interval (in frames) to set the duration that the source is frozen until the next grab.

Transition Effect

Set the transition effect when switching the input source. Up to 16 transition effects are supported.

Effect Duration

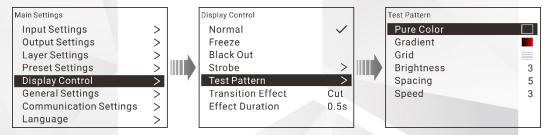
Set the duration of the transition effect. The range is 0.5s-2s and the default setting is **0.5s**.

Test Pattern

You can test whether the screen can display the output image color normally by comparing the displayed image with the test pattern.

On the main menu screen, rotate the knob to select **Test Pattern** and press the knob to enter the test pattern settings screen.

Figure 5-34 Test pattern



Pure Color

Use pure color to test whether the screen can display the color normally. The 4K ViewPro provides 5 pure colors.

Gradient

Use gradient to test whether the screen can display the image normally. The 4K ViewPro provides 11 gradients.

Grid

Use grid to test whether there are uncontrollable pixels on the screen. The 4K ViewPro provides 6 grids.

Brightness

Set the brightness of the test pattern. The range is 1–4 and the default value is **3**.

Spacing

When the test pattern is **Gradient** or **Grid**, you can set the spacing. When the test pattern is **Pure Color**, this item is unavailable. The range is 1-8 and the default value is 5.

Speed

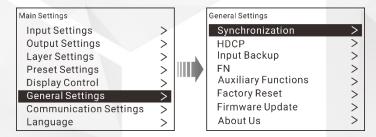
When the test pattern is Grid, you can set the moving speed. When the test pattern is **Pure Color** or **Gradient**, this item is unavailable. The range is 1–4 and the default value is **3**.

5.8 General Settings

On the main menu screen, rotate the knob to select **General Settings** and press the knob to enter the general settings screen.

You can set the synchronization, input source hot backup, Fn button function, auxiliary functions, factory reset, as well as update firmware version and view device information.

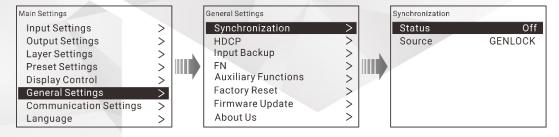
Figure 5-35 General settings



5.8.1 Synchronization

- Status: Turn on or turn off the synchronization function.
- Source: Rotate the knob to select the desired source as the sync source.
 Genlock signal is selected by default.

Figure 5-36 Synchronization

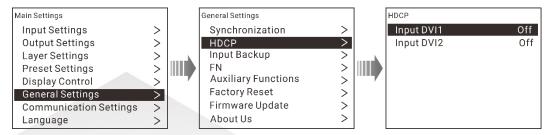


5.8.2 HDCP

DVI input connectors support HDCP processing and output.

- On: Turn on the HDCP function of DVI input connector.
- Off: Turn off the HDCP function of DVI input connector.

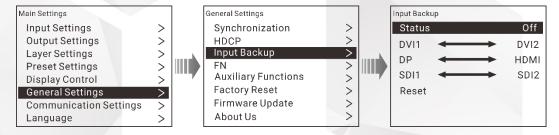
Figure 5-37 HDCP



5.8.3 Input Backup

If you turn on the input backup function, when the input source is abnormal or the connector fails, the LED screen can still work normally.

Figure 5-38 Input backup



- For each group of signal sources, the left one is the primary input source, and the right one is the backup input source.
- When the input backup function is turned on, if the primary input source has no signal but the backup input source has signal, the backup one will be used. Even if the primary input source has signal again, the backup one will still be used.
 - If the backup input source has no signal but the primary input source has signal, the primary input source will be used.
- If you switch the input source yourself, the input backup function will not be enabled. Even if the input source you switched to has no signal, the backup one will not be used.
- If the primary input source has no signal because of switching preset, the input backup function will not be enabled.

5.8.4 Fn

The **Fn** button on the device front panel can be customized to a **Synchronization**, **Main Layer**, **Preset Settings**, **Input Backup** shortcut button. You can press the **Fn** button to enter the corresponding menu screen.

5.8.5 Auxiliary Functions

5.8.5.1 Return to Home

Set the period of time during which the system stays at the current page before returning to the homepage automatically when there is no operation performed.

Range: 30s-3600s

Default value: 60s

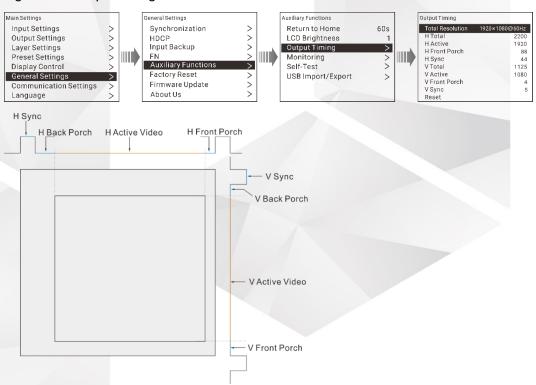
5.8.5.2 LCD Brightness

Adjust the LCD brightness. The range is 1-6 and the default setting is 1.

5.8.5.3 Output Timing

Set the area information of the resolution to be compatible with the connected devices.

Figure 5-39 Output timing



Parameter	Description
Total Resolution	Current output resolution that can be set in Output Settings
H Total	Total pixel count per line
H Active	The horizontal size in pixels of the active area
H Front Porch	The offset between the end of the active area and the beginning of H sync

H Sync	H sync width in pixels
V Total	Total line count per frame
V Active	The vertical size of the output active area
V Front Porch	The offset in lines between the end of the output active area and the beginning of V sync
V Sync	V sync width in lines

After you have completed the settings, rotate the knob to select **Apply** and press the knob to make the settings take effect. Rotate the knob to select **Reset** to reset all the settings to defaults.

5.8.5.4 Monitoring

Monitor the statuses of the power supply, temperature and fan.

The flashing LED bar on the front panel indicates abnormal status. Please contact our technical support staff in time for troubleshooting.

Figure 5-40 Monitoring

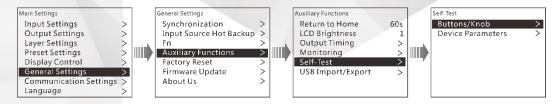


5.8.5.5 Self-Test

Test all the related items to view the device status. If anything is wrong, please send your feedback to our technical support to solve the problem as soon as possible.

You can test the buttons, knob and device parameters.

Figure 5-41 Self-test





Note:

Running self-test will cause transient abnormal display of the output. After the self-test, the output image will be displayed normally.

5.8.5.6 USB Import/Export

You can import and export preset files, BKG and LOGO images via USB drive.

Figure 5-42 USB importing/exporting



USB Detected

The device will automatically detect whether USB drive is connected.

- YES: There is USB drive connected to the device.
- NO: There is no USB drive connected to the device.

USB Import

You can import preset files, BKG and LOGO images via USB drive. Single file or multiple files importing are both supported.

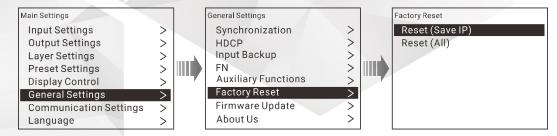
USB Export

You can export preset files, BKG and LOGO images via USB drive. Single file or multiple files exporting are both supported.

5.8.6 Factory Reset

- Reset (Save IP): Reset the settings to factory defaults, except for the IP address.
- Reset (All): Reset all the settings to factory defaults.

Figure 5-43 Factory reset



5.8.7 Firmware Update

The 4K ViewPro supports firmware update via USB drive.

- Step 1 Store the 4K ViewPro update file to the root directory of an USB drive.
- Step 2 Insert the USB drive to the USB port of the device.
- Step 3 Go to **General Settings** > **Firmware Update**, and the device will automatically search for the update file to perform the firmware update.



The file system of the USB drive must be FAT32.

5.8.8 About Us

View the device hardware version and manufacturer information, including company website and email address.

Official website: www.pixelhue.com

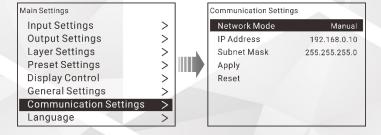
Email: info@pixelhue.com

5.9 Communication Settings

Rotate the knob to select Communication Settings and press the knob to enter the communication settings screen.

You can set to obtain the IP address manually or automatically. When you select Auto, please note that the device IP address must not conflict with IP addresses of other devices. You can select Reset to reset the IP address and subnet mask to default settings.

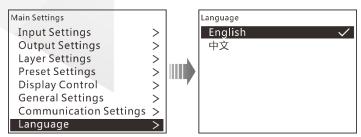
Figure 5-44 Communication settings



5.10 Language

The 4K ViewPro supports English and Simplified Chinese. You can freely switch to either language.

Figure 5-45 Language



6 Web Operations

About This Chapter

This chapter is designed to describe the web page menus and menu operations of the 4K ViewPro.

Overview

- Introduction
- Connections
- User Interface
- Input Settings
- Output Settings
- Layer Settings
- Preset Settings
- Display Control
- General Settings
- Communication Settings
- About Us

6.1 Introduction

The 4K ViewPro supports Web operations through PC or mobile terminals. You can set the device-related parameters by using an Internet browser. The settings are the same as menu operations.

Recommended browsers:

- Chrome 50 or later
- Safari 10 or later
- Firefox 45 or later
- Internet Explorer 10.0 or later



When a PC or mobile terminal is used to control the device, the front panel buttons will be locked and the lock icon will appear on the front panel screen.

6.2 Connections

Web connection can be established via two ways.

Ethernet cable

Connect the Ethernet port of the control PC with that of the device with an RJ45 cable.



- Router
 - Connect the Ethernet port of the device with a LAN port of the router, and connect the Ethernet port of the control PC with a LAN port of the router.
 - Connect the mobile terminals to the router through WiFi network.



Open one of the recommended browser and type "http:// the device IP address", and then press the **Enter** key to automatically jump to the device Web control page.

6.3 User Interface

The main user interface of Web page is shown in the below figure which is divided into 6 areas. The detailed information of each area is shown in the below table.

PIXELHUE | 4K ViewPro Output Settings HDMI Input Source Laver Settings Resolution 3840*2160 Freset Settings Refresh Rate 60 Hz isplay Control General Settings Communication Detected Resolution 3840×2160@60Hz Color Space About US Main Source

Figure 6-1 Web user interface

Table 6-1 Web menu descriptions

No.	Name	Description
1	Main menu	Select a menu item.
		The selected menu name will turn blue.

	Б.	
2	Parameters	Set or view the device parameters.
3	Monitoring	 Move the mouse to icon, and the device temperature will be shown. If the temperature is abnormal, the icon will change to icon, and the device voltage will be shown. If the voltage is abnormal, the icon will change to icon, and the fan speed will be shown. If the speed is abnormal, the icon will change to
4	Language	Click to change the language to either English or Simplified Chinese.
5	Exit	Exit web control and unlock front panel buttons.
6	Input source for main layer	 Click an input source button to select an input source. Green: The input source is used by main layer. Orange: The input source is accessed. Gray: The input source is not accessed. Click FRZ to freeze the current frame. Click BLACK to make the output image fade to black.

6.4 Input Settings

In the menu area, click ${\bf Input\ Settings}$ to enter the input settings page as shown in Figure 6-2

Figure 6-2 Input settings



Input Source

Click the drop-down button next to **Input Source** and select an input source from the drop-down list.

Resolution

Set the resolution of current input source.

Refresh Rate

Set the refresh rate of the input source.

After you have completed all the settings, click **Apply** to make the settings take effect.

Detected Resolution

The device automatically detects the resolution and refresh rate of current input source. The resolution and refresh rate can be changed in **Input Source**, **Resolution** and **Refresh Rate**.

Color Space

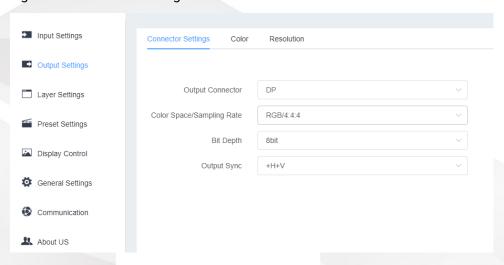
Color space includes settings of the composite video standard of an input source. Color space is determined by the video source. Different video sources correspond to different content. The device automatically identifies the color space type of current input source. If no signal is accessed, **No Signal** will be displayed.

6.5 Output Settings

6.5.1 Connector Settings

In menu area, click **Output Settings** to enter the output settings page. The **Connector Settings** tab page is displayed by default.

Figure 6-3 Connector Settings



Output Connector

Click the drop-down button next to **Output Connector** and select the target output connector from the drop-down list.

Color Space/Sampling Rate

Click the drop-down button next to **Color Space/Sampling Rate** and select a color space and sampling rate from the drop-down list.

Bit Depth

Bit depth is the number of bits used for each color component of a single pixel. Click the drop-down button next to **Bit Depth** and select a bit depth of the output video. The options are **8bit**, **10bit** and **12bit**.

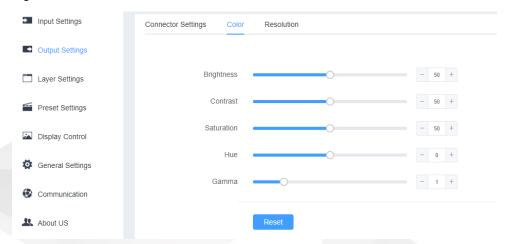
Output Sync

Click the drop-down button next to **Output Sync** and set output sync polarity.

6.5.2 Output Color

Click the Color tab to enter the color tab page as shown in Figure 6-4.

Figure 6-4 Color



Output color settings include **Brightness**, **Contrast**, **Saturation**, **Hue** and **Gamma**. For detailed parameter settings, see Table 6-2.

Table 6-2 Output color parameter settings

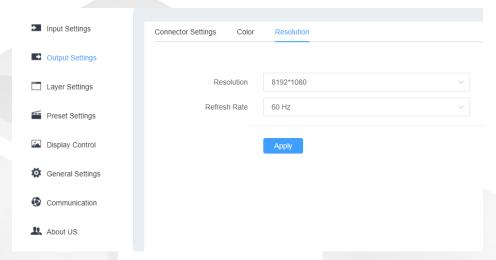
Name	Value Range	Default Value	Description
Brightness	0-100	50	Adjust the screen brightness. The larger the value, the brighter the screen will be.
Contrast	0-100	50	Adjust the difference between the darkest and brightest areas of the image displayed on the screen. The larger the value, the bigger this difference will be.
Saturation	0-100	50	Adjust the purity or vividness grade of the image color. The larger the value, the purer the color will be.
Hue	-180-180	0	Adjust the gradation or variety of the image color. The larger the value, the more intense the color will be.
Gamma	0.25- 4.00	1.00	Adjust the degree of distortion of the image color. The larger the value, the more distorted the color will be.

Click **Reset** to reset all the settings to defaults.

6.5.3 Output Resolution

Click the **Resolution** tab to enter the output resolution tab page, as shown in Figure 6-5.

Figure 6-5 Output resolution



 Resolution: Click the drop-down button next to Resolution and select a resolution from the drop-down list.

If you select **Custom** for **Resolution**, set the width and height of resolution manually.

• Refresh rate: Click the drop-down button next to **Refresh Rate** and select the refresh rate of the video from the drop-down list.

Click **Apply** after the output resolution settings are complete.

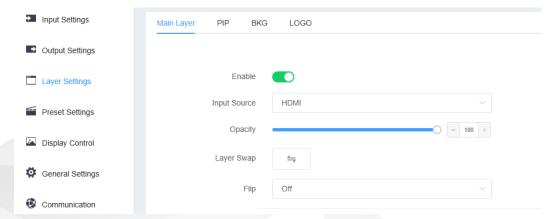
6.6 Layer Settings

In the menu area, click **Layer Settings** to enter the layer settings page where you can set the main layer, PIP, BKG and LOGO.

6.6.1 Main Layer

Go to the Layer Settings page. The Main Layer page is displayed by default.

Figure 6-6 Main layer



Enable

Enable or disable the main layer function.

Input Source

Click the drop-down button next to **Input Source** and select an input source for the main layer from the drop-down list.

Opacity

Set the opacity of the main layer. The range is 0% (transparent)–100% (nontransparent).

Layer Swap

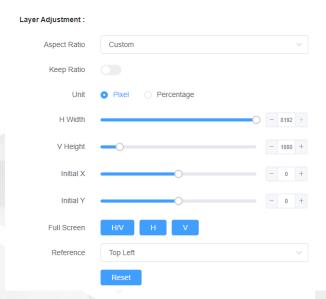
Click next to **Layer Swap** to swap the input sources of the main layer and PIP layer.

Flip

Turn on or turn off the layer flipping function.

- Off: No flipping
- H: The layer is flipped horizontally.
- V: The layer is flipped vertically.
- H+V: The layer is flipped both horizontally and vertically.

Layer Adjustment



- Aspect Ratio: Set the proportional relationship between the layer width and height.
- Keep Ratio: Lock or unlock the aspect ratio.
 - Lock: The aspect ratio is a fixed ratio. You can set the vertical height and horizontal width based on the selected ratio.
 - For example, the aspect ratio is set to 2:1 and you set to lock the ratio, then
 you can set the vertical height and you cannot set the horizontal width
 which will be automatically adjusted based on the set ratio.
 - Unlock: You can custom the aspect ratio and the vertical height and horizontal width can be adjusted freely.
- · Unit: Set the adjustment unit.

Pixel and percentage are supported.

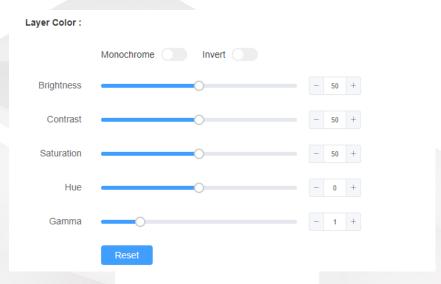
- · H Width: Adjust the layer width.
- V Height: Adjust the layer height.
- Initial X: Adjust the horizontal initial coordinate of the layer. The default value is
 0.
- Initial Y: Adjust the vertical initial coordinate of the layer. The default value is 0.
- Full Screen: Set the layer to display in full screen.
 - H: The layer fills the screen horizontally, but remains the same vertically.
 - V: The layer fills the screen vertically, but remains the same horizontally.
 - H+V: The layer fills the whole screen.
- Reference: Set the adjustment reference.
 - Top Left: Set the top left corner as the reference point.

Center: Set the center point as the reference point.

Layer Color

Scroll down the page to go to the color adjustment area as shown in Figure 6-7.

Figure 6-7 Layer color



Color adjustment parameters are shown in Table 6-3.

Table 6-3 Layer color

Name	Value Range	Default Value	Description
Monochrome	• On • Off	Off	On: Turn on the monochrome function for main layer.Off: Turn off the function.
Invert	• On • Off	Off	 On: Turn on the invert colors function for main layer. Off: Turn off the function.
Brightness	0-100	50	Adjust the screen brightness. The larger the value, the brighter the screen will be.
Contrast	0-100	50	Adjust the difference between the darkest and brightest areas of the image displayed on the screen. The larger the value, the bigger this difference will be.
Saturation	0-100	50	Adjust the purity or vividness grade of the image color. The larger the value, the purer the color will

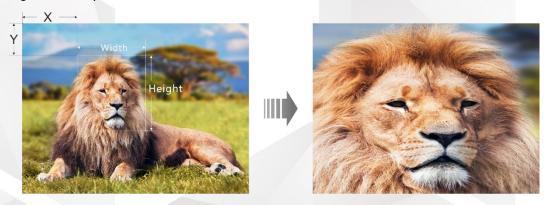
			be.
Hue	-180- 180	0	Adjust the gradation or variety of the image color.
			The larger the value, the more intense the color will be.
Gamma	0.25- 4.00	1.00	Adjust the degree of distortion of the image color.
			The larger the value, the more distorted the color will be.

Click Reset to reset all the settings to default

Input Crop

Crop the input source image and display it fill the layer as shown in Figure 6-8.

Figure 6-8 Crop



- Step 1 On the main layer page, toggle on the **Enable** switch in **Crop** area to enable the crop function.
- Step 2 Select the adjustment unit. Pixel and percentage are supported.
- Step 3 Set the H width, V height, initial X and initial Y of the cropped layer.
 - **H Width**: Set the horizontal width of the current input source after cropping.
 - V Height: Set the vertical height of the current input source after cropping.
 - **Initial X**: Set the horizontal initial coordinate of the cropped part upon the current input source with the top left corner as the reference point.
 - **Initial Y**: Set the vertical initial coordinate of the cropped part upon the current input source with the top left corner as the reference point.

Click Reset to reset the settings to defaults.

Layer Mask

Mask certain part of the layer as shown in Figure 6-9.

Figure 6-9 Mask



- Step 1 On the main layer page, toggle on the **Enable** switch in **Mask** area to enable the mask function.
- Step 2 Select the adjustment unit. Pixel and percentage are supported.
 - Pixel: Adjust the remaining area by pixels.
 - Percentage: Adjust the percentage ratio of the width and height of the remaining area.
- Step 3 Set the mask-related parameters.
 - Top: Set the area to be masked on the top.
 - Bottom: Set the area to be masked on the bottom.
 - Left: Set the area to be masked on the left.
 - **Right**: Set the area to be masked on the right.

Click **Reset** to reset the settings to defaults.

Priority

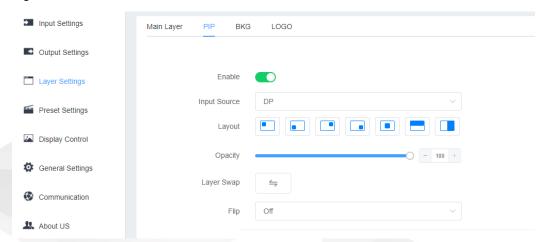
Set the main layer priority.

- 1: The main layer is sent to back.
- 2: The main layer is brought to front.

6.6.2 PIP

Click the **PIP** tab to enter the PIP tab page as shown in Figure 6-10.

Figure 6-10 PIP



Enable

Toggle on or off PIP.

Input Source

Select the input source for PIP. The supported input sources include **DVI 1**, **DVI 2**, **DP**, **HDMI**, **SDI 1** and **SDI 2**.

Layout

Select a layout. The supported layouts include custom layout, Top Left, Bottom Left, Top Right, Bottom Right, Center, T+B and L+R.

Opacity

Set the opacity of the layer. The greater the value, the opaque the layer will be. The range is 0% (transparent)–100% (nontransparent).

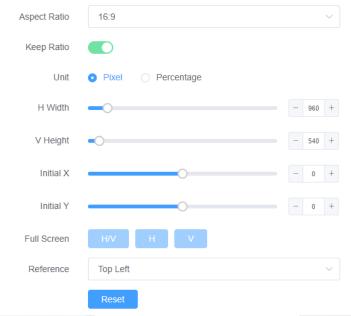
Layer Swap

Click next to **Layer Swap** to swap the input sources of the main layer and PIP layer.

- Flip
 - Off: No flipping
 - H: The layer is flipped horizontally.
 - V: The layer is flipped vertically.
 - H+V: The layer is flipped both horizontally and vertically.

PIP Adjustment

PIP Adjustment :



- Aspect Ratio: Set the proportional relationship between the layer width and height.
- Keep Ratio: Lock or unlock the aspect ratio.
 - Lock: The aspect ratio is a fixed ratio. You can set the vertical height and horizontal width based on the selected ratio.
 - For example, the aspect ratio is set to 2:1 and you set to lock the ratio, then you can set the vertical height and you cannot set the horizontal width which will be automatically adjusted based on the set ratio.
 - Unlock: You can custom the aspect ratio and the vertical height and horizontal width can be adjusted freely.
- Unit: Set the adjustment unit.
 - Pixel and percentage are supported.
- H Width: Adjust the layer width. The default value is 800.
- V Height: Adjust the layer height. The default value is 600.
- Initial X: Adjust the horizontal initial coordinate of the layer. The default value is
 0.
- Initial Y: Adjust the vertical initial coordinate of the layer. The default value is 0.
- Full Screen: Set the layer to display in full screen.
 - H: The layer fills the screen horizontally, but remains the same vertically.
 - V: The layer fills the screen vertically, but remains the same horizontally.
 - H/V: The layer fills the whole screen.

- Reference: Set the adjustment reference.
 - Top Left: Set the top left corner as the reference point.
 - Center: Set the center point as the reference point.
- Reset

Click Reset to reset the settings to defaults.

Color

For the layer color parameters, please see Table 6-4.

Table 6-4 Layer color

Name	Value Range	Default Value	Description
Monochrome	• On • Off	Off	On: Turn on the monochrome function for PIP.
			Off: Turn off the function.
Invert	• On • Off	Off	On: Turn on the invert colors function for PIP.
			Off: Turn off the function.
Brightness	0-100	50	Adjust the screen brightness.
			The larger the value, the brighter the screen will be.
Contrast	0-100	50	Adjust the difference between the darkest and brightest areas of the image displayed
			on the screen.
			The larger the value, the bigger this difference will be.
Saturation	0-100	50	Adjust the purity or vividness grade of the image color.
			The larger the value, the purer the color will be.
Hue	-180- 180	0	Adjust the gradation or variety of the image color.
			The larger the value, the more intense the color will be.
Gamma	0.25- 4.00	1.00	Adjust the degree of distortion of the image color.
			The larger the value, the more distorted the color will be.

Click **Reset** to reset all the settings to default

Crop

Crop the input source image and make it fill the layer as shown in Figure 6-11.

Figure 6-11 Crop



- Step 1 On the PIP page, toggle on the **Enable** switch in **Crop** area to enable the crop function.
- Step 2 Select the adjustment unit. Pixel and percentage are supported.
- Step 3 Set the H width, V height, initial X and initial Y of the cropped layer.
 - H Width: Set the horizontal width of the current input source after cropping.
 - V Height: Set the vertical height of the current input source after cropping.
 - Initial X: Set the horizontal initial coordinate of the cropped part upon the current input source with the top left corner as the reference point.
 - Initial Y: Set the vertical initial coordinate of the cropped part upon the current input source with the top left corner as the reference point.

Click Reset to reset the settings to defaults.

Mask

Mask certain part of the layer as shown in Figure 6-12.

Figure 6-12 Mask



- Step 1 On the PIP page, toggle on the **Enable** switch in **Mask** area to enable the mask function.
- Step 2 Select the adjustment unit. Pixel and percentage are supported.
 - Pixel: Adjust the remaining area by pixels.
 - Percentage: Adjust the percentage ratio of the width and height of the remaining area.
- Step 3 Set the mask-related parameters.
 - **Top**: Set the area to be masked on the top.
 - Bottom: Set the area to be masked on the bottom.
 - Left: Set the area to be masked on the left.
 - **Right**: Set the area to be masked on the right.

Click **Reset** to reset the settings to defaults.

Priority

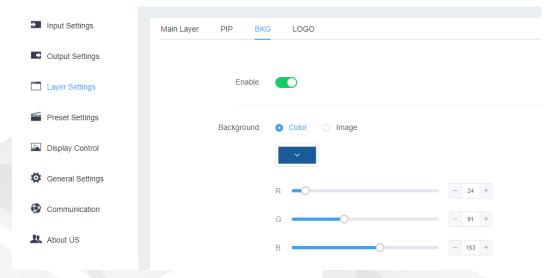
Set the PIP priority.

- 1: The PIP is sent to back.
- 2: The PIP is brought to front.

6.6.3 BKG

Click the **BKG** tab to enter the BKG tab page as shown in Figure 6-13.

Figure 6-13 BKG

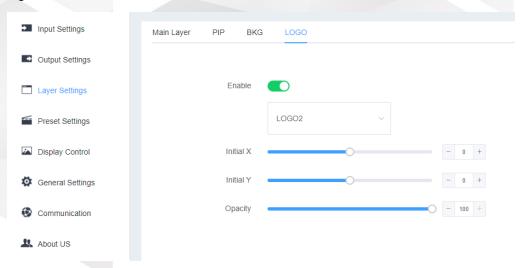


- Step 1 Toggle on the BKG function.
- Step 2 You can select to set a pure color BKG or a BKG image.
 - · Color: Set the individual R, G and B color values.
 - Image: Select an imported BKG image on the device as the BKG image

6.6.4 LOGO

Click the **LOGO** tab to enter the LOGO tab page as shown in Figure 6-14. Import LOGO files into the 4K ViewPro from USB drive before setting LOGO.

Figure 6-14 LOGO



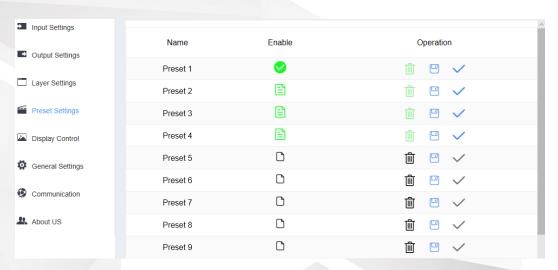
- Step 1 Toggle on the LOGO function.
- Step 2 Select an imported LOGO image.
- Step 3 Set the horizontal initial coordinate of the LOGO image.
- Step 4 Set the vertical initial coordinate of the LOGO image.

Step 5 Set the opacity of the LOGO. The greater the value, the opaquer the layer will be. The range is 0% (transparent)–100% (nontransparent).

6.7 Preset Settings

Click **Preset Settings** to enter the preset settings page as shown in Figure 6-15.

Figure 6-15 Preset



Preset status definitions:

- E: The current preset has data.
- D: The current preset has no data.
- The current preset has been loaded.

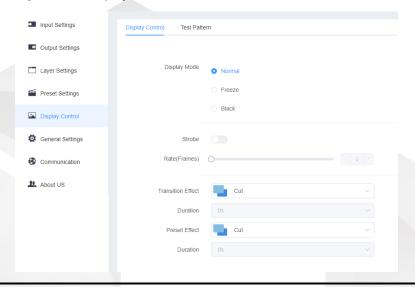
Preset operations:

- Click to clear the preset.
- Click I to save the preset.
- Click to apply the preset.

6.8 Display Control

Click **Display Control** to enter the display control page as shown in Figure 6-16.

Figure 6-16 Display control





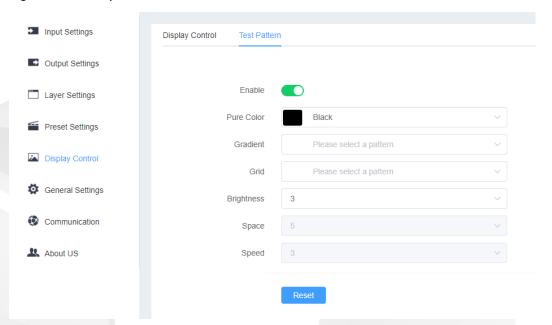
The display modes (Normal, Strobe and Freeze) are mutual excluded between each other. When you select one, the other one is deselected.

Display Control

- **Normal**: Display the content of current input source normally.
- Freeze: Freeze the current frame of the output image.
- Black: Make the screen go to black.
- Strobe: Toggle on or off the strobe function.
- Rate (Frames): Adjust the strobe rate interval (in frames) to set the duration that the source is frozen until the next grab.
- **Transition Effect**
 - Set the transition effect when switching the input source. Support CUT and Fade.
- **Effect Duration**: Set the duration of the transition effect. The range is 0.5s-2s and the default setting is 0.5s.
- Preset Effect
 - Set the preset transition effect when switching the preset. Support CUT and Fade.
- **Effect Duration**: Set the duration of the preset transition effect. The range is 0.5s-2s and the default setting is 0.5s.

Test Pattern

Figure 6-17 Test pattern



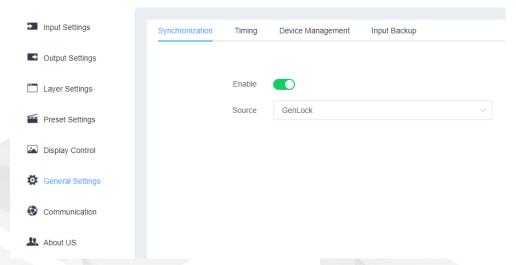
- Enable: Toggle on or off the test pattern.
- Pure Color: 5 pure colors are supported.
- Gradient: 11 gradients are supported.
- Grid: 6 grids are supported.
- Brightness: Test the brightness of the test pattern. The range is 1–4 and the default value is 3.
- Spacing: When the test pattern is Gradient or Grid, you can set the spacing.
 When the test pattern is Pure Color, this item is unavailable. The range is 1–8 and the default value is 5.
- Speed: When the test pattern is **Grid**, you can set the moving speed. When the test pattern is **Pure Color** or **Gradient**, this item is unavailable. The range is 1–4 and the default value is 3.
- Reset: Reset all the settings to defaults.

6.9 General Settings

6.9.1 Synchronization

Click **General Settings** to enter the general settings screen.

Figure 6-18 General INDEX



- Enable: Toggle on or off the synchronization mode. It is disabled by default.
- Source: Select Genlock or an input source as the sync source.

6.9.2 Timing

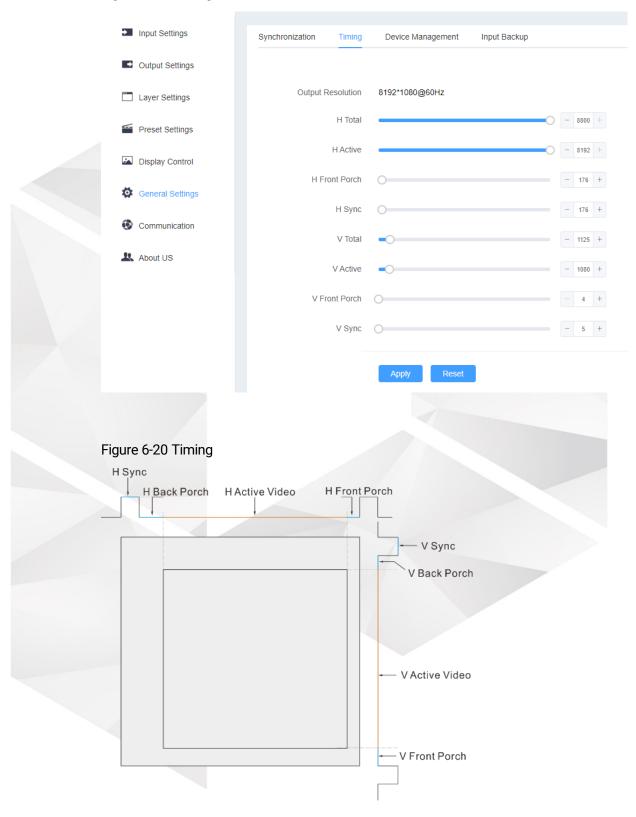
Set the detailed information of the output resolution so that the 4K ViewPro can be compatible with different display devices, video processors or video sending devices. For timing parameters, please see the table below.

Table 6-5 Timing

Parameter	Description
Output Resolution	Current output resolution that can be set in Output Settings
H Total	Total pixel count per line
H Active	The horizontal size in pixels of the active area
H Front Porch	The offset between the end of the active area and the beginning of H sync
H Sync	H sync width in pixels
V Total	Total line count per frame
V Active	The vertical size of the output active area
V Front Porch	The offset in lines between the end of the output active area and the beginning of V sync
V Sync	V sync width in lines
Reset	Reset the settings to defaults.

- Click Apply to make the settings take effect.
- Click Reset to reset all the settings to defaults.

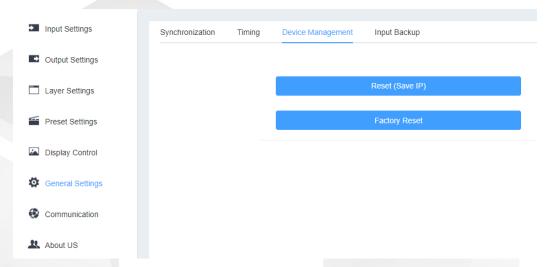
Figure 6-19 Timing



6.9.3 Device Management

Click **Device Management** tab to enter the factory reset page. If fault occurs on the device, you can select to reset the device to factory settings.

Figure 6-21 Device management



- Reset (Save IP)
 - Reset the settings to factory defaults, except for IP address.
- Factory Reset
 Reset all the settings to factory defaults.

6.9.4 Input Backup

Click the **Input Backup** tab to set the primary input source and backup input source respectively.

If you turn on the input backup function, when the input source is abnormal or the connector fails, the LED screen can still work normally.

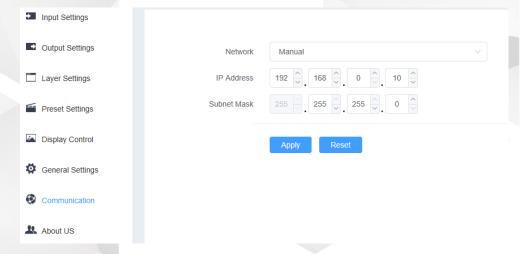
Input Settings Timing Synchronization Device Management Input Backup Output Settings Enable Layer Settings Primary Backup Preset Settings DVI 1 DVI 2 Display Control DP HDMI General Settings SDI 1 SDI 2 Communication About US

Figure 6-22 Input source hot backup

6.10 Communication Settings

Click Communication to enter the communication settings page.





You can set to obtain the IP address manually or automatically.

- Manual: You need to enter the device IP address and subnet mask.
- Auto: The device will obtain the IP address and subnet mask automatically.

After you have completed all the settings, click **Apply** to make the settings take effect, or click **Reset** to reset the settings to default settings.

6.11 About Us

Click **About Us** to view the company related information, including company name, official website, email address and hardware version.



Specifications

Input				
Connector	Qty	Resolution		
DUAL DVI	2	1024×768p@48/50/59.94/60/75/85Hz		
		1152×864p@75Hz		
		1280×720p@23.98/24/25/29.97/30/48/50/59.94/60Hz		
		1280×960p@50/59.94/60/85Hz		
		1280×1024p@48/50/59.94/60/75/85Hz		
		1366×768p@50/59.94/60Hz		
		1440×900p@60/75/85Hz		
		1600×1200p@48/50/59.94/60Hz		
V		1680×1050p@60Hz		
		1920×1080p@23.98/24/25/29.97/30/48/50/59.94/60Hz		
		1920×1200p@50/59.94/60Hz		
		2048×1080p@30/48/50/59.94/60Hz		
		2048×1152p@30/60Hz		
		2560×1080p@50/59.94/60Hz		
		2560×1600p@50/59.94/60Hz		
		3840×1080p@30/50/59.94/60Hz		
		3840×2160p@23.98/24/25/29.97/30Hz		
12G-SDI	2	12G-SDI loop output		
		1280×720p@23.98/24/25/29.97/30/50/59.94/60Hz		
		1920×1080p@23.98/24/25/29.97/30/50/59.94/60Hz		
		3840×2160p@23.98/24/25/29.97/30/50/59.94/60Hz		
		4096×2160p@23.98/24/25/29.97/30/50/59.94/60Hz		
DP 1.2	1	1024×768p@48/50/59.94/60/75/85Hz		

Connector	Otv	Pacalutian		
Output				
		3840×2160p@23.98/24/25/29.97/30/60Hz		
		3840×1080p@30/50/59.94/60/120Hz		
		2560×1600p@50/59.94/60/120Hz		
		2560×1080p@50/59.94/60Hz		
		2048×1152p@30/60Hz		
		2048×1080p@30/48/50/59.94/60Hz		
		1920×1200p@50/59.94/60Hz		
		1920×1080p@23.98/24/25/29.97/30/48/50/59.94/60Hz		
		1680×1050p@60Hz		
		1600×1200p@48/50/59.94/60Hz		
		1440×900p@60/75/85Hz		
		1280×1024p@48/50/59.94/60/75/85Hz		
		1280×960p@50/59.94/60/85Hz		
		1280×720p@23.98/24/25/29.97/30/48/50/59.94/60Hz		
HDMI 2.0	1	1152×864p@75Hz		

Connector	Qty	Resolution
HDBaseT	1	1024×768p@48/50/59.94/60/75/85Hz
DUAL DVI	1	1152×864p@75Hz
		1280×720p@23.98/24/25/29.97/30/48/50/59.94/60Hz
		1280×1024p@48/50/59.94/60/75/85Hz
		1440×900p@60/75/85Hz
		1600×1200p@48/50/59.94/60Hz
		1680×1050p@60Hz
		1920×1080p@23.98/24/25/29.97/30/48/50/59.94/60Hz
		1920×1200p@50/59.94/60Hz
		2048×1080p@30/48/50/59.94/60Hz
		2048×1152p@30/60Hz
		2560×1080p@50/59.94/60Hz
		2560×1600p@50/59.94/60Hz
		3840×1080p@30/50/59.94/60Hz
		3840×2160p@23.98/24/25/29.97/30Hz
		4096×2160p@30Hz
HDMI 2.0	1	HDCP 2.2 and EDID1.3

		1024×768p@48/50/59.94/60/75/85Hz
		1152×864p@75Hz
		1280×720p@23.98/24/25/29.97/30/48/50/59.94/60Hz
		1280×1024p@48/50/59.94/60/75/85Hz
		1440×900p@60/75/85Hz
		1600×1200p@48/50/59.94/60Hz
		1680×1050p@60Hz
		1920×1080p@23.98/24/25/29.97/30/48/50/59.94/60Hz
		1920×1200p@50/59.94/60Hz
		2048×1080p@30/48/50/59.94/60Hz
		2048×1152p@30/60Hz
		2560×1080p@50/59.94/60Hz
		2560×1600p@50/59.94/60/120Hz
		3840×1080p@30/50/59.94/60/120Hz
		3840×2160p@23.98/24/25/29.97/30/60Hz
		4096×2160p@30/60Hz
		7680×1080@30/60Hz
		8192×1080@30/60Hz
12G-SDI	1	1280×720p@23.98/24/25/29.97/30/50/59.94/60Hz
		1920×1080p@23.98/24/25/29.97/30/50/59.94/60Hz
		3840×2160p@23.98/24/25/29.97/30/50/59.94/60Hz
		4096×2160p@23.98/24/25/29.97/30/50/59.94/60Hz
Control		
Connector	Qty	Resolution
ETHERNET	1	For PC communication or network connection
USB (Type-B)	1	For PC control
GENLOCK IN-LOOP	1	For connecting a synchronization signal to synchronize cascaded devices
Overall Specification	าร	
Connector	Qty	Resolution
Power connector	1	100-240V~, 50/60Hz, 2.1A
Operating temperature		0°C to 50°C
Storage temperature		-10°C to +60°C
Dimensions		482.6 mm × 50.5 mm × 302.5 mm
Power consumption		55 W
Net weight		4.7 kg