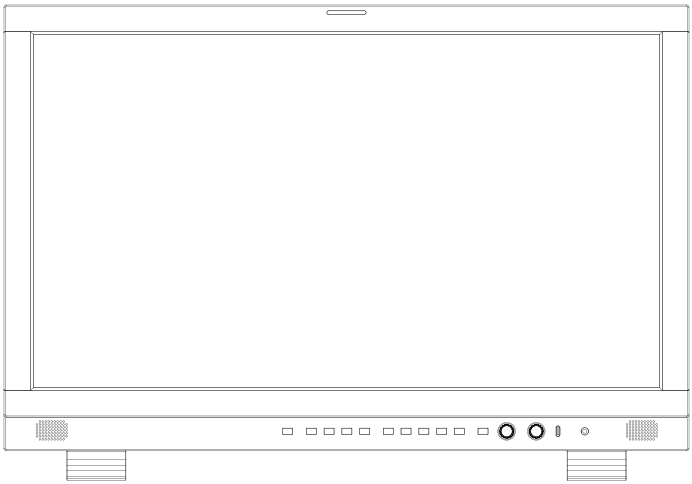
Konvision

V1.0



NDI Monitors
Konvision LCD Monitor

USER MANUAL

WWW.KONVISION.COM

Catalogue

About This Manual

The manual instruction is for the NDI monitor:
KUM-2410H-NDI
Please keep the manual carefully.
Please read the manual carefully before using the product.
Any updating or modification of the manual will not be informed exclusively.

Notes

Safety

For the safety use of products, please read the following instructions regarding the installation, use and maintenance carefully.

- Please read the product safety and operating instructions carefully before the product is operated.
- Please keep the safety and operating instructions for future reference.
- Please pay strict attention to the warnings and implement the products according to the operating instructions closely.
- All operating instructions should be strictly enforced.

1. Please use the power cord recommended by the manufacturer.
2. Please do not expose the product in high heat, humid, dusty, strong electric or magnetic environment to avoid fire or electric shot accident.
3. If there is any solid or liquid accidentally into the product, please unplug the power cord for instant and contact professionals for safety check, secure the condition can only for further operation.
4. Please make sure the earth terminal is good to avoid electric shock.
5. Please do not open the back cover to avoid electric shock. Please contact professionals for service needs.
6. Please do not touch the power plug with wet hands, as it will cause electric shock.
7. If do not use the device for a long time, please unplug the power cord from the AC outlet.
8. To disconnect the power cord, please hold the plug and pull it out. Do not drag the cord.
9. The power supply should be placed near the product for convenience.
10. Please keep not less than 5cm space around the vents while using the monitor to obtain a good heat dissipation effect.

Screen Maintenance

Please follow the below guidelines carefully to prevent discoloration, stains and scratches on the screen:

- Avoid striking the screen with any object.
- Do not wipe the screen hard.
- Do not wipe the screen with solvents such as alcohol, thinner or gasoline.
- Do not expose the screen to sunlight direct for a long time. Otherwise, the screen may be damaged or aged.
- Do not spray detergent or other cleaners on the monitor or LCD panel, as it may cause fault because of water droplets into the monitor.
- Do not paste or stick any viscous markers on the screen. For the more difficult cleaning, use lint free cloth that has been very lightly dampened with detergent, then dry any excess moisture from the monitor or LCD panel immediately to prevent damage.

LCD and OLED Screen Note

- The monitor may appear unrecoverable residual images, when it switches to other signals after displaying the same images for a long time, even if the images is in a moving video, such as still LOGO or still characters etc. Please use a screen saver or timer to avoid displaying the same images for a long time.

Importance

Long-term using the product under following circumstances may cause panel burning damage and remain residual image, please be cautious using:

- Exclusive still images.
- Television test pattern, such as color bars.
- Safety area, audio level, waveform, vector scope, etc.
- Image with frames(including multiview windows)

The reasons of burning residual images occur are same as they occur on other third party OLED product, the damages cite in this note will not be suitable for warranty policy.

When the following situations occur, please turn off the power, do not insert the plug and contact a professional service staff to deal with it in a timely manner.

1. This product smells of smoke and off-flavor.
2. When this product displays abnormal operating conditions, such as there is no picture or sound.
3. When any liquid is splashed into the product or product dropped.
4. When the product soaked or fell into the water.
5. When the product has been damaged or other damage circumstances.
6. When the power cord or plug is damaged.

The following does not belong to failures:

1. If the static image displayed too long, it will have residual image, which should be attributed to the characteristics of LCD display but not a failure. Residual image will disappear automatically after a period.

3. LCD screen may appear tiny spots (red, blue or green), this is not a fault, LCD screens are manufactured with high precision technology, and a small number of pixels may not be able to show intermittent.
4. Screen and cabinet will become warm gradually during operation.

Smear

· Display constant signal or/and patterns may cause picture smear or/and flick on the monitor screen due to the construction design and material properties of the LCD panel. If the situations occurred, please display white pattern or motion pictures in a while.

Cabinet Maintenance

Please follow the guidelines below to prevent potential damage.

1. Do not wipe the cabinet with solvents such as alcohol, thinner or gasoline.
2. Do not wipe the cabinet hard. Use a soft, lint free cloth to clean. If the cabinet cleaning is more difficult, use lint free cloth that has been very lightly dampened with detergent and then dry it to wipe.

Installation

· Keep adequate air circulation to prevent device internal overheating.
· Please do not place the product on the surface of some certain objects (such as blankets, carpets, etc.), as these objects may block the vents.
· Please keep the device away from heat generating sources, such as radiator, heaters and air duct, also keep it away from much dust or mechanical vibration.
· Please disconnect the power source and cord when move the device.

Rack mount Installation

For rack mount installation, please keep 1U space from both top and bottom to make sure, adequate air circulation, or install an external electric fan. Please follow the instructions and install with the rack mounts provided by the manufacturer.

Cable connection

· Please do not connect the cables and power cord to the front of the monitor, the plug may be overloaded.
· Please do not place the headphone close to the surface of the monitor when using it, the headphone may play noise.

Connect to other devices

· When connect the monitor to other devices, please turn off the power of the monitor and other devices, if the connection is operated with power on, it may cause failure of the monitor or other devices.

Transportation

· Please use professional packing material to transport this monitor. Do not let the monitor transport under strong quake or fierce shock, otherwise it may cause inner or outer construction damage, hardware failure or screen damage.

What's Inside

Please check following item included inside package:

· Monitor
· Power cord, screws
· User Manual, certification

Specification

The NDI series monitors have several specifications:

Multi Definition Support

The KUM-2410H-NDI equips a 23.8 inch 4K definition screen that can support SD, HD and Ultra HD video signal monitoring on the original 3840×2160 display in multiple environments.

Shortcuts

The front panel equips function keys and knobs, easy to select input source, modify backlight brightness and sound volume. Only to connect the power and SDI signal can easily start monitoring.

Friendly Handles

The monitor has ergonomic designed handles for fast, user-friendly modification.

IP Streaming Input

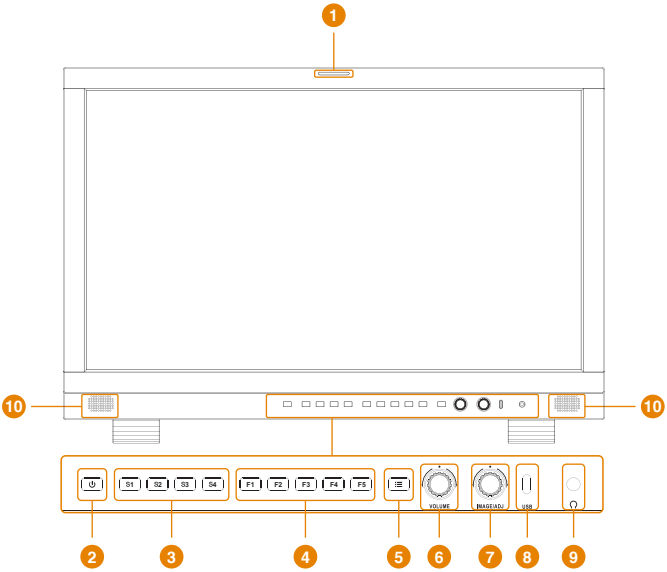
The monitor can receive NDI|HX IP streaming video signal up to Ultra HD 2160p60.

Wide Color Gamut

The monitor ensures accurate color display with advanced 3D LUT calibration.

Parts and Functions

Front View



Front View Instruction

1 Tally

Tally indicator control in GPI interface.

2 Power Button and Indicator

When the external AC power supply with electricity, the indicator light is red. Press this POWER button to power on the monitor, and the indicator light turns blue. Press this button around 3 seconds can turn off the monitor power supply and indicate light turns to red.

3 S Button and Indicator

Press the S button, the indicator will turn blue. Currently, the S button switch to the configuration corresponding to the profile. The S button can be set in the menu item.

4 F Button

Function button, its function can be set in the menu. After setting the button function, press the custom key quickly switch to the corresponding function.

5 ☰ Button

Press to display the on-screen menu, press it again to clear the on-screen menu. Press to display or exit menu, also can back to previous menu.

6 VOLUME(L/R)Knob

When in the menu, spin this knob to select L/R operation.
When not in the menu, press the knob continuous, will appear following adjustment:
Audio Mute: audio mute on/off
Volume: volume adjustment items.

7 IMAGEADJ(U/D)Knob

When in the menu, spin this knob to select up/down operation.
When not in the menu, press the knob continuous, will appear following adjustment:
Brightness: adjust the backlight of the image.

8 USB Type-C

Upgrading the monitor FPGA, OSD, APP, EDP software or LUT file with USB port.

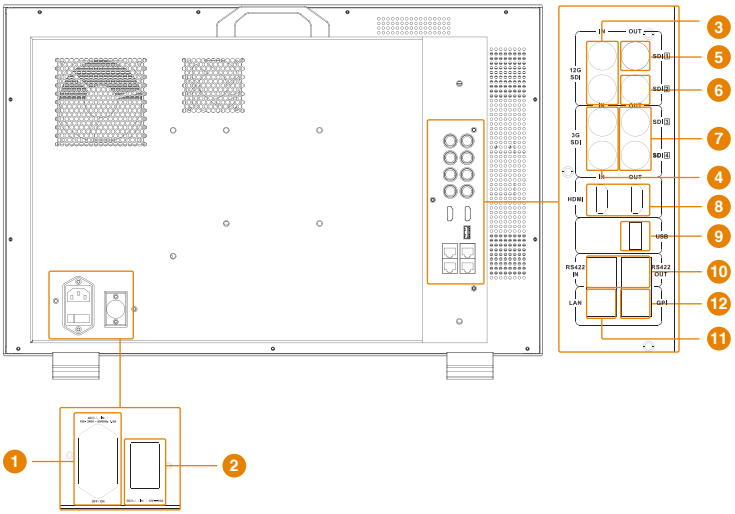
9 AUDIO OUT

Analog Stereo Audio Output.

10 Speaker out

Speaker out.

Rear View



Rear View Instruction

1 AC IN and Switch
AC power supply.
AC power input is powered on, switch to “I” to power on, switch to “O” to power off, and shut down.

2 DC IN
DC 12V power supply.

3 SDI1/SDI2 (IN)
12G/6G/3G/HD/SD-SDI input.

4 SDI1/SDI2 (IN)
3G/HD/SD-SDI input.

5 SDI1 (OUT)
NDI® convert to 12G-SDI decoded output or 12G/6G/3G/HD/SD-SDI output.

6 SDI2 (OUT)
12G/6G/3G/HD/SD-SDI output.

7 SDI3/SDI4 (OUT)
3G/HD/SD-SDI output.

8 HDMI (IN/OUT)
HDMI signal input/output interface, maximum supports 4096x2160 60Hz.

9 USB Type- A
Upgrading the monitor FPGA, OSD, APP, EDP software or LUT file with USB port.

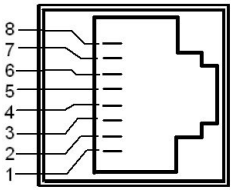
10 Speaker out
RS422 in and out. RS422 control adoptive TSL3.1 or TSL4.0 protocol. According to this protocol, it supports dynamic UMD/Tally control. (RS422 interface, 8bit data, 1 stop, even parity, 38400 baud).

11 LAN
Ethernet port for color correction, upgrading or control UMD via TSL5.0. (For specification instructions please contact with the distributor.

12 GPI
GPI Interface.

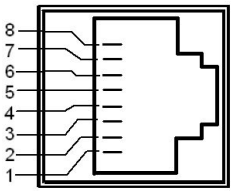
Interface and Pin

GPI Interface:



Pin	GPI Signal	Description
1	GPI1	When connect GND (or lower level), GPI 1 works, GPI 1 function can be set in the menu function option.
2	GPI2	When connect GND (or lower level), GPI 2 works, GPI 2 function can be set in the menu function option.
3	GPI3	When connect GND (or lower level), GPI 3 works, GPI 3 function can be set in the menu function option.
4	NC	Not connect.
5	NC	Not connect.
6	GPI4	When connect GND (or lower level), GPI 4 works, GPI 4 function can be set in the menu function option.
7	NC	Not connect.
8	GND	Ground. When using the GPI function, it needs to be connected to the GND of the GPI device.

RS422 IN and RS422 OUT:



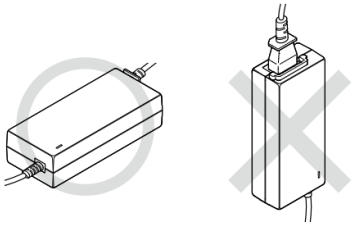
Pin	RS422 IN Signal Name	RS422 OUT Signal Name
1	GND(Power Ground)	GND(Power Ground)
2	GND(Power Ground)	GND(Power Ground)
3	Tx-	Tx-
4	Rx+	Rx+
5	Rx-	Rx-
6	Tx+	Tx+
7	NC(Not Connect)	NC(Not Connect)
8	NC(Not Connect)	NC(Not Connect)

Physical Operation

Connecting to Power Cord

1. Check the models with AC In port and its I/⏻ switch are setting to ⏻ (Standby Status).
2. Connect the DC adaptor to the DC In port on the rear panel completely until it is locked.

Note Please make sure the DC adaptor is putting on a level ground, use wire binder to regular the adaptor to avoid falling.



3. Connect the AC power cord to the DC adaptor.
4. Connect the power plug to the socket.

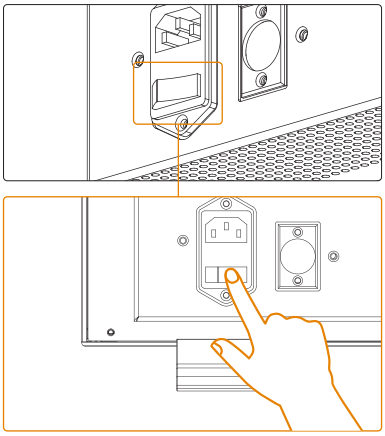
Remove the Power Cord

1. For models with AC In port and I /⏻ switch, switch ⏻ to and the device will be set to standby status,pull out the power cord from the DC adaptor, then pull out the adaptor form the device.
2. For models only with DC In port, turn off the power of the socket, and pull out the power cord from the device.

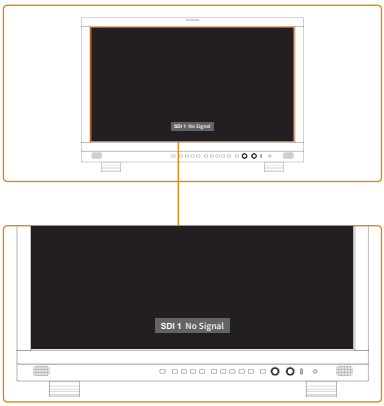
Power On/Stand By

Power On

1. When connecting to the power source, set the I /⏻ switch to I.

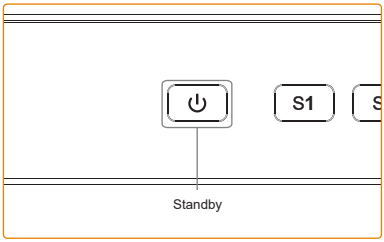


2. The ⏻/SEL indicators on the front panel will flash red and turn off, seconds later the screen will display welcome animation, while the ⏻/SEL indicators turn blue and turn off, the monitor is on, enter the main screen interface, if there were no signal input, the screen would display “NO SIGNAL” sign.



Stand By

Long press the ⏻ key for about 3 seconds, the monitor will enter into standby mode, the ⏻ indicator turns red press it again to turn on the monitor.



OSD Menu Operation

All function keys and menu keys should be activated when the SEL key be selected.

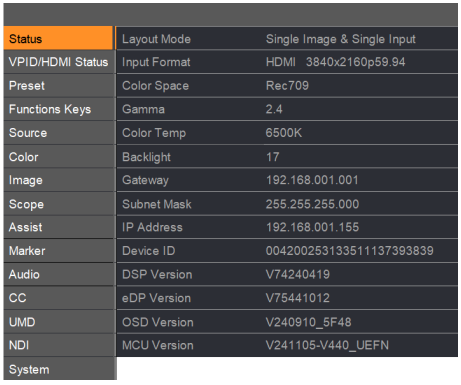
Status Display

Display the system status of layout mode, input format, color space, gamma, color temperature, backlight, network status, device ID and firmware version.

Item	Description
Layout Mode	Display the current input mode.
Input Format	Display the current input resolution and frame rate.
Color Space	Display the current color space setting.
Gamma	Display the current gamma setting.
Color Temp	Display the current color temperature setting.
Backlight	Display the current backlight of the screen.
Gateway	Display the default gateway (default value 192.168.001.001).
Subnet Mask	Display the default Subnet Mask (default value: 255.255.255.000).
IP Address	Display the factory default IP address: 192.168.001.155.
Device ID	Display the Device ID.
DSP Version	Display DSP software version information.
EDP Version	Display EDP software version information.
OSD Version	Display OSD software version information.
MCU Version	Display MCU software version information.

How to review the Status:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Status item.



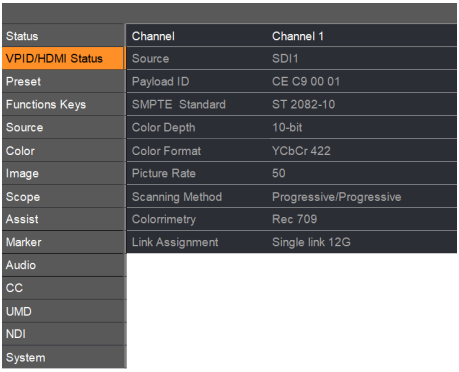
VPID/HDMI Status

Display the information analysis from the Payload ID of the current input signal.

Item	Description (Current SDI signal)
Channel	Select different channel to view different signal parameter.
Source	Display the current input signal.
Payload ID	Display the Payload ID of the SDI signal.
SMPTE Standard	Display the SMPTE protocol of the SDI signal.
Color Depth	Display the Color Depth of the signal.
Color Format	Display the Color Format of the signal.
Picture Rate	Display the Picture Rate of the signal.
Scanning Method	Display the Scanning Method of the signal.
Colorimetry	Display the Colorimetry of the signal.
Link Assignment	Display the Link Assignment of the SDI signal.

How to review the VPID/HDMI Status:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the VPID/HDMI Status item.



Preset

Preset can be reset.

Load Preset

Load the default preset templates and custom configs.

Preset Feature	Template1 (SDR)	Template2 (2020 HLG1.2)	Template3 (P3D65 PQ)	Template4 (Quad)	Template5 (2SI)
Preset Feature	Template1 (SDR)	Template2 (2020 HLG1.2)	Template3 (P3D65 PQ)	Template4 (Quad)	Template5 (2SI)
Layout Mode	Single Image & Single Input	Single Image & Single Input	Single Image & Single Input	Quad Image & Quad Input	Single Image & SDI 2SI
Window Source	SDI1	SDI1	SDI1	Win1: SDI1 Win2: SDI2 Win3: SDI3 Win4: SDI4	
Color Space	Rec709	Rec2020	DCI P3D65	Rec709	Rec709
Gamma	2.4	Rec.2100 HLG1.20	ST2084 PQ	2.4	2.4
Datal Level	Limit(64-940)	Auto	Auto	Auto	Auto

How to load preset:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Preset item to open the sub menu.
3. Rotate the knob, select Load Preset item and press the knob to select different configs to load.

Status	Layout Mode	Single Image & Single Input
VPID/HDMI Status	Input Format	HDMI 3840x2160p59.94
Preset	Color Space	Rec709
Functions Keys	Gamma	2.4
Source	Color Temp	6500K
Color	Backlight	17
Image	Gateway	192.168.001.001
Scope	Subnet Mask	255.255.255.000
Assist	IP Address	192.168.001.155
Marker	Device ID	00420025313511137393839
Audio	DSP Version	V74240419
CC	eDP Version	V75441012
UMD	OSD Version	V240910_5F48
NDI	MCU Version	V241105-V440_UEFN
System		

Save User Preset

Users can save their configurations as presets to swiftly load them. Preset items User1/2/3/4 separately correspond to S Keys1/2/3/4.

Note Each time adjust the monitor settings without Save User Preset operation, when press the S Keys, the loaded preset will be the config before the adjustment. Therefore, to load the adjusted configs, users must save their presets.

How to Save User Preset:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Preset item to open the sub menu.
3. Rotate the knob, select Save User Preset item and press the knob to select different items.

Preset	Save User Preset	>>
Functions Keys	USB Export Preset	User1 (S1)
Source	USB Import Preset	User2 (S2)
Color	Power On Load	User3 (S3)
Image	User Preset1 Name	User4 (S4)
Scope	User Preset2 Name	User5

USB Export/Import Preset

The monitor supports exporting and importing present config and all configs through a USB drive, therefore the other monitors can be loaded same configurations to save the setting time.

How to export or import presets:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Preset item to open the sub menu.
3. Rotate the knob, select USB Export/Import Preset item and press the knob to select different items.

VPID/HDMI Status	Load Preset	>>
Preset	Save User Preset	>>
Functions Keys	USB Export Preset	>>
Source	USB Import Preset	Export Current Preset
Color	Power On Load	Export All Preset
Image	User Preset1 Name	User1

Power On Load

Set the preset to load when the monitor is powered on, the system will be set to corresponding feature when it is turned on, the default item is Last Settings, User1/2/3/4/5 and Template1(SDR)/ Template2(2020 HLG1.2)/ Template3(P3D65 PQ)/ Template4(Quad)/ Template5(2SI) are optional.

How to set Power On Load:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Preset item to open the sub menu.
3. Rotate the knob, select Power On Load item and press the knob to select different items.

VPID/HDMI Status	Load Preset	>>
Preset	Save User Preset	>>
Functions Keys	USB Export Preset	>>
Source	USB Import Preset	>>
Color	Power On Load	Last Settings
Image	User Preset1 Name	Last Settings
Scope	User Preset2 Name	User1
Assist	User Preset3 Name	User2
Marker	User Preset4 Name	User3
Audio	User Preset5 Name	User4
CC	Preset Reset	User5

User Preset Name

Users can set the preset names on demand.

How to set User Preset Name:

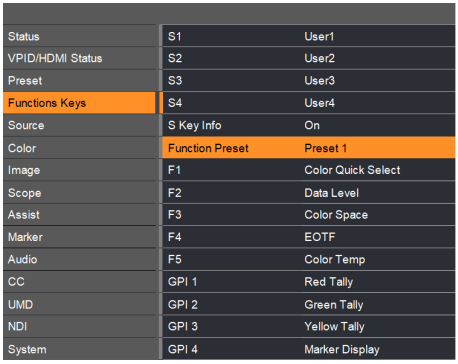
1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Preset item to open the sub menu.
3. Rotate the knob, select any User Preset Name item, press the knob, rotate the knob to select the character position and press the knob to modify the character.

Function Keys

Function keys can be set to quickly enable special functions of the monitor and promote the efficiency and convenience.
S Keys, F Keys and GPI functions can be set in the Function keys menu.
S Keys can be set to User1/2/3/4/5.
F Keys can be set to Waveform, Vector, Histogram, Data Level, Color Space, EOTF, Color Temperature, Audio Meter, Focus Assist, False Color, Zebra, Blue Only, Mono, Red Only, Green Only, Timecode, Freeze, Audio Phase, Marker, Color Pattern, Color Quick Select, CC, Single SDI1/2/3/4, Quad SDI1-4, Darkness Check, Highlight Check.
GPI can be set to Marker, Red Tally, Green Tally, Yellow Tally, Blue Only, Mono, Red Only, Green Only, S Key1/2/3/4, Window1/2/3/4 Border, Quad to Window1/2/3/4.

How to set Function Keys:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Function Keys item to open the sub menu.
3. Rotate the knob, select S key, Function Preset and GPI item and press the knob to select different items.



Source

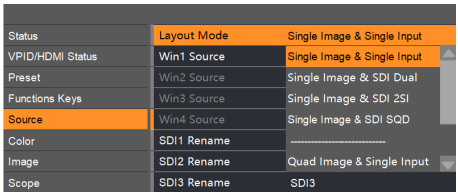
Layout Mode

Layout mode can be set on multi-source input monitor to assign the image display in order. It is important for professional applications such as broadcast, postproduction and CCTV when the operator needs to monitor multiple images at the same time. The layout mode includes single image and quad image, the single image includes single input, SDI dual input, SDI 2SI input and SDI SQD input, the quad image includes single input, SDI dual input and quad input.

Item	Description
Single Image	Display and process the image of one signal with large view to monitor the detail.
Quad Image	Display and process the images of four different signal independently for multi-source monitoring.
Single Input	Input single signal such as single 12G-SDI signal, up to 4K60P with fine compatibility of majority standard video signal device.
SDI Dual	Dual-link input for promoting bandwidth and image quality.
SDI 2SI	Two sample interleave input.
SDI SQD	Square Division input.

How to set different Layout Mode:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Source item to open the sub menu.
3. Rotate the knob, select Layout Mode item and press the knob to select different items.



Window Source

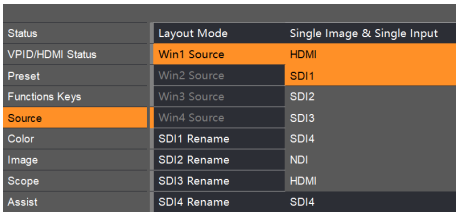
The Window Source is to receive the video signal from camera and other video source inputting to the monitor for display. The window source can be set to SDI1/2/3/4, NDI, HDMI, users can change the source name, window border color and width on demand.

Item	Description
SDI	Serial Digital Interface.
NDI	Network Device Interface.
HDMI	High-Definition Multimedia Interface.

How to set Window Source:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Source item to open the sub menu.
3. Rotate the knob, select Win Source item and press the knob to select different items.

Note Only the Layout Mode is set to Quad Image & Quad Input can the Window 2/3/4, Window Border color and width can be available.

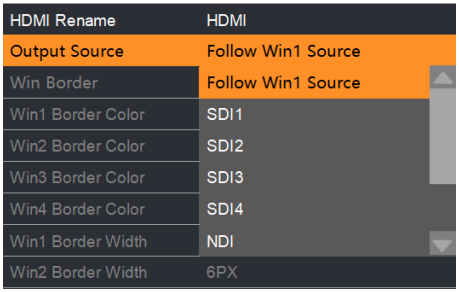


Output Source

Select the input signal to output to other devices, the output source can be set to Win1, SDI, NDI, HDMI.

How to set Output Source:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Source item to open the sub menu.
3. Rotate the knob, select Output Source item and press the knob to select different items.



Color

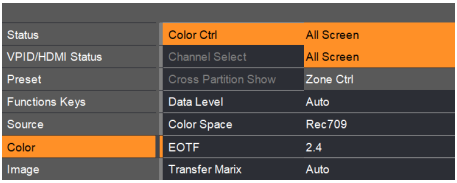
Color Control

The color control supports full screen and area control.

Item	Description
All Screen	Adjust the color for the full screen to maintain the image color consistency.
Zone Ctrl	Adjust the color independently for the different areas of the screen.

How to set Color Control:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select Color Ctrl item and press the knob to select different items.



Channel Select

Select different windows to set different color parameters.

Note Only the Color Ctrl item is set to Zone Ctrl can the Channel Select be available.
When the Layout Mode is set to Single Image & Single Input, the Zone Ctrl will be divided to four areas which can be scaled with a crosshair sign, the Win1/2/3/4 correspond to the up-left/up-right/bottom-left/bottom right of the screen. When the Layout Mode is set to Quad Image & Quad Input, the Win1/2/3/4 correspond to four Window Sources.

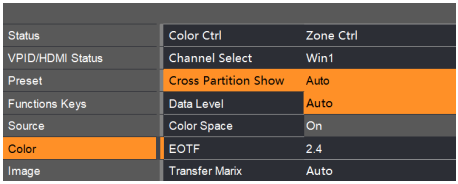
Cross Partition Show

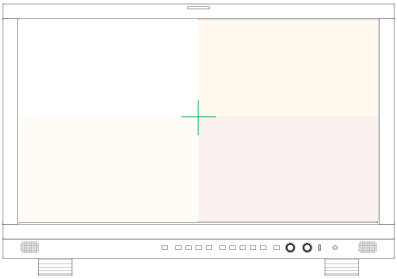
Divide the screen to four areas and display a crosshair to instruct the modification result, the size and position of the areas can be adjusted on demand.

How to set Cross Partition Show:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select Cross Partition Show item and press the knob to select different items.
4. Turn on the Cross Partition Show, press down the IMAGE/ADJ(U/D)knob to set to the Cross Partition Show mode, rotate the knobs to change the position of the cross-hair to adjust the control areas.

Note Only the Layout Mode is set to Single Image & Single Input can the Cross Partition Show be available.





Data Level

Data Level, also called Data Range, refers to the range of color and brightness information that is present in a video file. Including Limit(64-940), Extend(64-1019), Full(0-1023), SMPTE Full(4-1019).

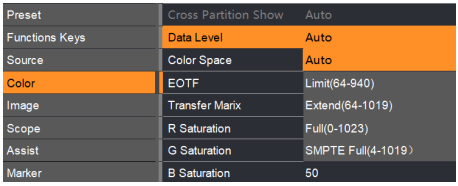
Item	Description
Auto	Automatically recognizing and setting the data level of the input signal.
Limit(64-940)	Data rage 64-940, usually set in SDR video signal processing.
Extend(64-1019)	Extended data range of Limit to increase the dynamic range of the image, especially the highlight and the shadow, compatible for more dynamic range but lower than Full range requirement, including some HDR production.
Full(0-1023)	Data rage 0-1023 includes every possibility of greyscale to provide more image details.
SMPTE Full (4-1019)	Compliance for SMPTE data range standard, ensure the accuracy and consistency of professional broadcast, high level film production and postproduction.

Suggestions for different application environment when setting the data level:

- Working in the professional film production, better to set Full(0-1023) or SMPTE Full(4-1019) since they provide the most accurate color and the widest dynamic range.
- For HDR monitoring, Extend(64-1019) may be a better choice, because it provide a wider dynamic range than the Limit(64-940).

How to set the Data Level:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select Data Level item and press the knob to select different items.



Color Space

Color Space is the specific organizations of colors that the monitor can display and process, defined by various standard.
The monitor supports color space: Auto(vpid/ avi), Auto(Format), Bypass, Rec709, EBU, DCI P3 D65, DCI P3, Rec2020, USER1/2/3/4/5/6.

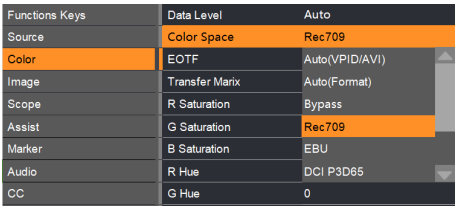
Item	Description
Auto(VPID/AVI)	Automatically recognizing and setting the color space of the input signal.
Auto(Format)	Automatically set the color space to Rec2020 when the input signal format is 4K and set the color space to Rec709 when the input signal format is 2K.
Bypass	Bypass will display the image with the native color display capability of the screen, without any calibration or color processing.
Rec709	Rec709 is a standard developed by ITU-R for image encoding and signal characteristics of HDTV, widely used in SDR content display.
EBU	EBU is the standard color space recommended by the European Broadcasting Union, the color temperature usually sets to 6500K.
DCI P3 D65	Standard P3 RGB primaries instead of the white point is calibrated to D65.
DCI P3	DCI-P3 is developed by the Digital Cinema Initiatives organization, it is a wide color gamut that displays more saturated color, especially enhances the red and green expression, provides more vivid visual experience, usually used in digital film production and postproduction.
Rec2020	Rec2020 defines various aspects of UHDTV and HDR contents. Rec2020 supports 10bit and 12bit color range that provides wide color depth, using for the advanced 4K and 8K television system and high end postproduction.
U1_/U2_/U3_/ U4_/U5_/U6_	User customized color space.

Suggestion for different application environment when setting the color space:

- If you work in film production industry, select DCI P3 will be suitable for the standard.
- For professional design and postproduction, select BT2020 will provide HDR display and wider color gamut.
- For consumers, BT709 or DCI P3 D65 would be considerable.

How to set different color space:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select Color Space item and press the knob to select different items.



EOTF

Images and videos use specific transfer functions to describe the relationship between electrical signal, scene light and displayed light. The EOTF is the transfer function having the picture or video signal as input and converting it into the linear light output of the display. This is done within a display device.
The KRM 4K Monitors supports: Gamma2.0, Gamma2.2, Gamma2.4, Gamma2.6, Gamma2.4(HDR), Rec.2100 HLG 1.03, Rec.2100 HLG 1.11, Rec.2100 HLG 1.16, Rec.2100 HLG 1.20, Rec.2100 HLG 1.27, Rec.2100 HLG 1.33, ST2084 PQ, ST2084 PQ(softroll), Slog, Slog2, Slog3, Clog, Clog2, Clog3, Vlog, Dlog, LogC, the differences are:

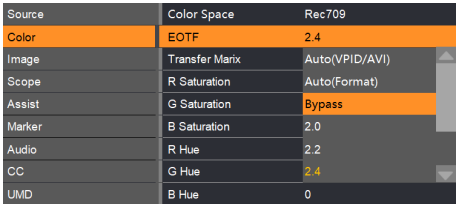
Item	Description
Auto(VPID/AVI)	Automatically recognizing and setting the EOTF of the input signal.
Auto(Format)	Automatically set the EOTF to HLG when the input signal format is 4K and set the EOTF to 2.4 when the input signal format is 2K.
Bypass	Bypass will display the image with the native color display capability of the screen, without any calibration or color processing.
Gamma 2.0	A balanced Gamma that enhances the detail of shadow, using for dark environment requires detail in the shadow.
Gamma 2.2	The default gamma setting of majority graphic and visual software.
Gamma 2.4	Enhance the detail in the part of a little over-exposure, improve the contrast and saturation. It is compatible for HDTV production and broadcast, especially in Rec.709 color space.
Gamma 2.6	Enhance the contrast in of color in highlight, compatible for film production and relatively high dynamic range content.

Item	Description
Gamma2.4(HDR)	This gamma is suitable for HDR content that provides wider contrast and color depth. It can be selected with BT2020 color space.
Auto(Format)	Automatically set the EOTF to HLG when the input signal format is 4K and set the EOTF to 2.4 when the input signal format is 2K.
Bypass	Bypass will display the image with the native color display capability of the screen, without any calibration or color processing.
Gamma 2.0	A balanced Gamma that enhances the detail of shadow, using for dark environment requires detail in the shadow.
Gamma 2.2	The default gamma setting of majority graphic and visual software.
Gamma 2.4	Enhance the detail in the part of a little over-exposure, improve the contrast and saturation. It is compatible for HDTV production and broadcast, especially in Rec.709 color space.
Gamma 2.6	Enhance the contrast in of color in highlight, compatible for film production and relatively high dynamic range content.
Gamma2.4(HDR)	This gamma is suitable for HDR content that provides wider contrast and color depth. It can be selected with BT2020 color space.
Rec.2100 HLG 1.03	Rec.2100 HLG series has downward compatibility of SDR, provides a larger contrast and supports 10bit color depth. It can be selected with BT2020 color space for better color performance.
Rec.2100 HLG 1.11	
Rec.2100 HLG 1.16	
Rec.2100 HLG 1.20	
Rec.2100 HLG 1.27	
Rec.2100 HLG 1.33	
ST2084 PQ	The EOTF PQ provides large contrast, compatible with 10bit even 12bit color depth. It improves the highlight detail preserving and has great color performance when compatible with BT2020 color space, using for HDR10 and Dolby Vision content.
ST2084 PQ(softroll)	

Item	Description
Slog	Slog, Clog, Vlog are using in camera recording, provides wide dynamic range for postproduction workflow, suitable for color grading.
Slog2	
Slog3	
Clog	
Clog2	
Clog3	
Vlog	
Dlog	
LogC	

How to set different EOTF:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select EOTF item and press the knob to select different items.



Transfer Matrix

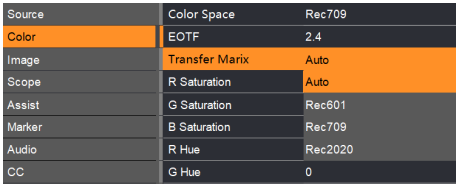
Transfer Matrix is the mathematic transfer relationship between different color space, through the matrix calculation to realize different color space mapping and match the color display capability of different devices.

Item	Description
Auto	Through the recognized PayLoad ID, automatically match the color space.
Rec601	Using for standardizing the color space transfer, definition, and frame rate of image processing of SDTV.

Note Rec709 and Rec2020 please refer to the description of Color Space.

How to set different Transfer Matrix:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select Transfer Matrix item and press the knob to select different items.

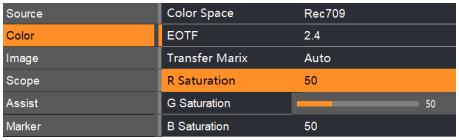


Saturation

Saturation is one of the three different aspects of chromatic intensity, usually use R/G/B saturation of the monitor to indicate color intensity when it separately displays red, green and blue. The volume range is from 0 to 100, the volume is higher the color is showier.
Adjust the volume rationally for best display effect in different environment if the user has professional requirement and monitoring.

How to set the Saturation:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select a saturation item, such as R Saturation, press the knob to adjust the volume.

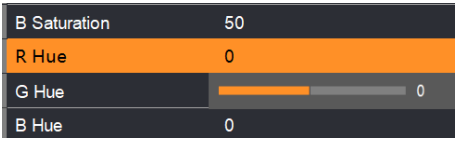


Hue

Hue is one of the main properties of a color, defined technically in the CIECAM02 model as "the degree to which a stimulus can be described as similar to or different from stimuli, usually adjust R/G/B hue of the monitor to indicate color tendency.

How to set Hue:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select a hue item, such as R Hue, press the knob to adjust the volume.



Sharpness

Sharpness refers to the clarity of vision, high sharpness monitor provides vivid vision, display more sharp edge, clear text and smooth detail.

How to set the Sharpness:

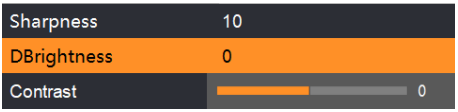
1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select Sharpness item and press the knob to adjust the volume.

DBrightness

The DBrightness indicates the monitor will process the brightness of the signal itself.

How to set the DBrightness:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select DBrightness item and press the knob to adjust the volume.

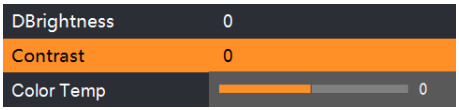


Contrast

The Contrast is the definition ratio between the ultra-brightness and black of the monitor.

How to set the Contrast:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select Contrast item and press the knob to adjust the volume.



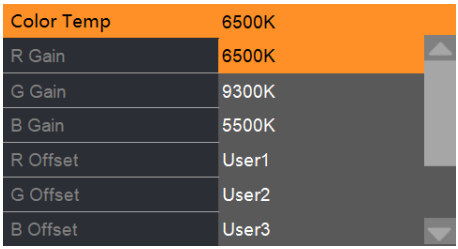
Color Temperature

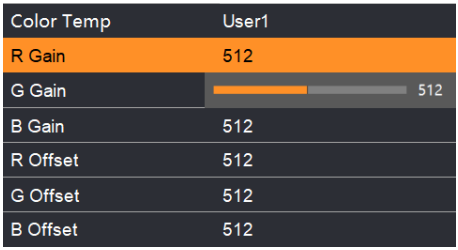
The volume of color temperature is lower, the display is warmer, the color intend to yellow or red, the color temperature is higher, the display is colder, the color intend to blue. The monitor include color temperature: 6500K, 9300K, 5500K, User1/2/3/4.

Item	Description
6500K	6500K usually be defined as the standard color temperature, widely used in image processing, video editing, is a relative setting that balance the reality and visual comfort.
9300K	The coldest color temperature in visual perception, the color display intend to blue, the image would be brighter at this temperature, easier provides the sense of unnaturalness.
5500K	A relative warm display of the monitor.
User1	Users can modify different R/G/B GAIN or R/G/B OFFSET to customize the color temperature.
User2	

How to set different Color Temperature:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Color item to open the sub menu.
3. Rotate the knob, select the Color Temp item and press the knob to select different color temperature.
4. If select the User item, rotate the knob to set the R/G/B GAIN or R/G/B OFFSET.





Image

Backlight

Backlight is the luminance of the backlighting source of the monitor, setting a high backlight volume can guarantee the display quality in a bright environment, and a low backlight can be used in a dark environment to reduce the eyestrain.

How to set the backlight volume:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Image item and press the knob to open the sub menu.
3. Rotate the knob, select the Backlight item and press the knob, rotate the knob to set the volume.

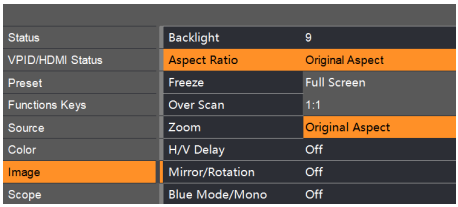
Aspect Ratio

Set the image display ratio, include Full Screen, 1:1 and Aspect Original.

Item	Description
Full Screen	Scale the image to fulfill the screen regardless its origin aspect ratio. It may cause deformation of the image.
1:1	Scale the image pixel to pixel.
Aspect Original	Scale the image with its original ratio, it may remain the blank area on the screen instead of the deformation, as known as “the black edge”.

How to set different Aspect Ratio:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Image item and press the knob to open the sub menu.
3. Rotate the knob, select the Aspect Ratio item and press the knob to select different item.

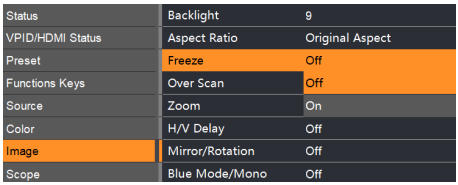


Freeze

Freeze the image in a specific still.

How to set Freeze:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Image item and press the knob to open the sub menu.
3. Rotate the knob, select the Freeze item and press the knob to select different item.

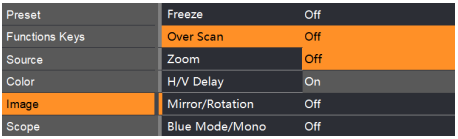


Overscan

Overscan is a behavior in display devices in which part of the input picture is cut off by the visible bounds of the screen.

How to set Overscan:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Image item and press the knob to open the sub menu.
3. Rotate the knob, select the Overscan item and press the knob to set on/off.

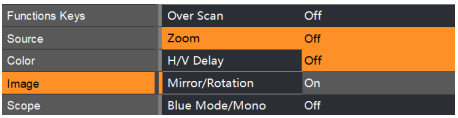


Zoom

Zoom the central area of the image to observe the detail for further analyze and processing.

How to set Zoom:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Image item and press the knob to open the sub menu.
3. Rotate the knob, select the Zoom item and press the knob to set on/off.

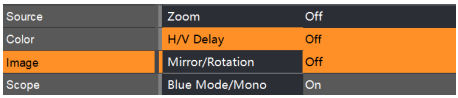


H/V delay

The H/V delay function completely displays the accurate time delay between the signal inputs to the monitor and the images display on the screen during the processing of the video signal. The H/V delay may effect the synchronization and instant of the video content under the circumstance that multiple input sources are demand synchronization or instant monitoring, such as audio-video unsynchronized.

How to set H/V delay:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Image item and press the knob to open the sub menu.
3. Rotate the knob, select the H/V delay item and press the knob to set on/off.

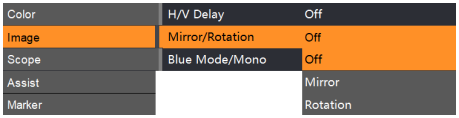


Mirror/Rotation

Mirror display will flip the image with vertical axis like the reflect in the mirror.
Rotation display will rotate the image in 180°.

How to set Mirror/Rotation:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Image item and press the knob to open the sub menu.
3. Rotate the knob, select the Mirror/Rotation item and press the knob to select different item.



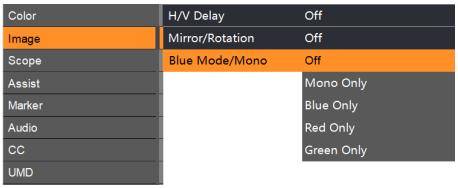
Blue Mode/Mono

Blue Mode/Mono display the mono color channel of the image, compatible for checking the noise of the video signal, include Mono Only, Blue Only, Red Only, Green Only.

Item	Description
Mono Only	Only display the luminance information of the signal without chrominance information. The image will look like grey.
Blue Only	Only the single color channel be activated (Blue, Red or Green)
Red Only	
Green Only	

How to set the Blue Mode/Mono:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Image item and press the knob to open the sub menu.
3. Rotate the knob, select the Blue Mode/Mono item and press the knob to select different items.



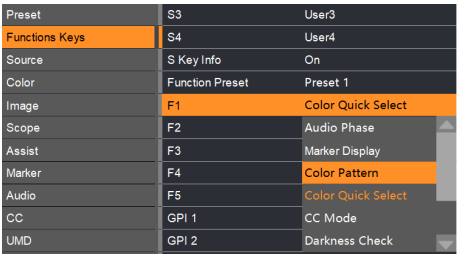
Color Pattern

Color pattern displays various solid color to evaluate and calibrate the monitor.

Note Color Pattern can only activate by F Keys.

How to set Color Pattern:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Function Keys item to open the sub menu.
3. Rotate the knob, select a F key, such as F1, press the knob and select Color Pattern item in the sub menu.
4. Press F1 to open and close Red, Green, Blue, White, Black color alternately.



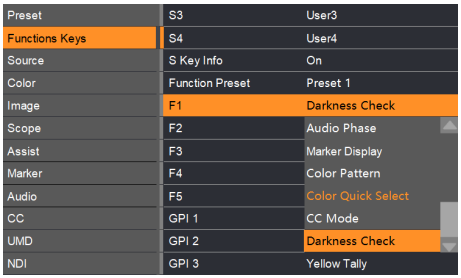
Darkness Check

Darkness check can review the dark area and performance of detail to evaluate the visibility of shadow and contrast ratio.

Note Darkness Check can only activate by F Keys.

How to set Darkness Check:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Function Keys item to open the sub menu.
3. Rotate the knob, select a F key, such as F1, press the knob and select Darkness Check item in the sub menu.
4. Press F1 to turn on/off the effect of Darkness Check.



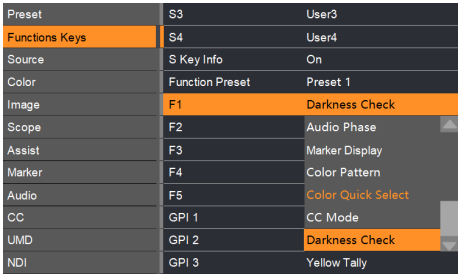
Highlight Check

Highlight check can review the bright area and performance of detail to evaluate the visibility of highlight and contrast ratio.

Note Darkness Check can only activate by F Keys.

How to set Highlight Check:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Function Keys item to open the sub menu.
3. Rotate the knob, select a F key, such as F1, press the knob and select Highlight Check item in the sub menu.
4. Press F1 to turn on/off the effect of Highlight Check.



Scopes

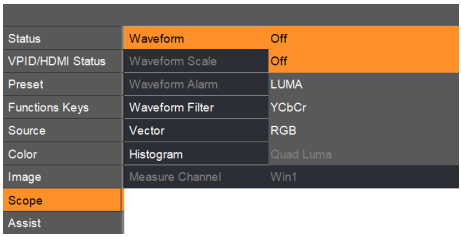
Waveform

The waveform display provides a digitally encoded waveform like traditional luminance waveform monitors, which is used to monitor and adjust the luma, or brightness, levels of your video signal. Three waveforms: Luma, YCbCr and RGB, when the layout mode is set to Quad Image & Quad Input, the Quad Luma will be available.

Item	Description
Luma	Luma waveform indicates the luminance information of the video signal, precisely processing each frame to the luminance graph that tells the dynamic range of the image, helps user analyze the contrast and exposure.
YCbCr	Y is the luma component and Cb and Cr are the blue-difference and red-difference chroma components, YCbCr shows the luma and the chroma information and is helpful for calibrating a video signal's chroma values, also compatible to the traditional black and white TV. YCbCr waveform is widely used in digital video system, such as TV station, video conference.
RGB	RGB waveform shows luminance information of Red, Green, Blue separately, analyze 3 waveforms can assess the luminance balance of the 3 color channels to adjust white balance and the accuracy of the color.
Quad Luma	Available when layout mode is set to Quad Image & Quad Input

How to display different waveforms:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Scopes item and press the knob to open the sub menu.
3. Rotate the knob, select Waveform item and press the knob to open the sub menu, select different waveforms.



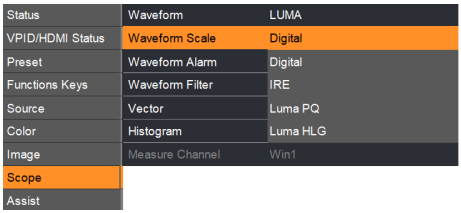
Waveform Scale

Waveform Scale is a useful measurement and monitoring tool for luminance and chrominance information in the production and television industry. Read the information according to the waveform scale to assess the video quality and broadcast compliance.
Four waveform scales: Digital, IRE, Luma PQ and Luma HLG.

Item	Description
Digital	Measurement for digital video, using 0-1023 range to represent the digital level, mainly used in digital video system, including HD and UHD production.
IRE	The IRE unit is used in the measurement of video signal, the scale ranges from 0 to 100, with 0-7.5 representing complete black and 100 representing the reference white, part over 100, such as 110 or 120 IRE representing brightness white, the IRE scale can help exposure assist of SDR production, also is the commonly used exposure standard in TV production.
Luma PQ	Waveform scale for ST 2084 EOTF, ranges in a larger dynamic level, used for film and advanced TV production such as HDR10, HDR10+ and Dolby Vision
Luma HLG	Waveform scale for HLG which is compatible to SDR content.

How to set different waveform scales:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Scopes item and press the knob to open the sub menu.
3. Rotate the knob, select the Waveform Scale item and press the knob to select different scales.

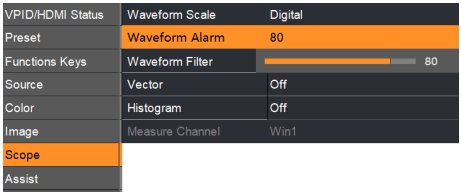


Waveform Alarm

Set a safety range of the waveform, when the luminance and chrominance level over the range, the alarm will be activated, a red part display on the waveform. Set the alarm level in a rational value can help adjust the exposure so that the efficiency will be promoted.

How to set the waveform alarm:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Scopes item and press the knob to open the sub menu.
3. Rotate the knob, select the Waveform Alarm item and press the knob to set different value.

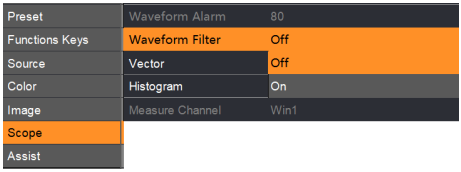


Waveform Filter

Filtering the noise and distortion of the signal in the waveform to display a clean and stable scope image.

How to set the Waveform Filter:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Scopes item and press the knob to open the sub menu.
3. Rotate the knob, select the Waveform Filter item and press the knob to set on/off.



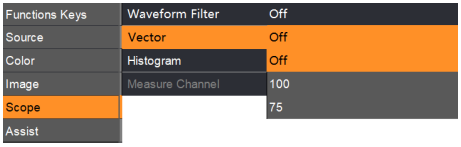
Vector

Vectorscope shows the colors in a vector view. Professionals can assess the color performance. Vectorscope can indicate the color accuracy. If some areas in the vectorscope had deviated, it might mean the headend device or the signal transmission cause failure. Two vectorscope scale: 100% and 75%.

Item	Description
100%	100% vectorscope usually indicates high saturation and the maximum amplitude, assessment to the color range of the signal can be covered to any level. Also, 100% vectorscope can indicate color synchronizing signal more accurately, compatible for strict demand of color accuracy, such as film production and editing.100% vectorscope usually indicates high saturation and the maximum amplitude, assessment to the color range of the signal can be covered to any level. Also, 100% vectorscope can indicate color synchronizing signal more accurately, compatible for strict demand of color accuracy, such as f ilm production and editing.
75%	75% vectorscope reduces 25% amplitude, is suitable for broadcast safe monitoring.

How to set different Vectorscopes:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Scopes item and press the knob to open the sub menu.
3. Rotate the knob, select the Vector item and press the knob to select different items.



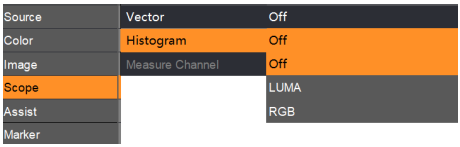
Histogram

Histogram is the instant indicator of luminance and chrominance for adjusting exposure and color. It shows the distribution of whites and blacks of the video. Two mode of the histogram: Luma and RGB.

Item	Description
Luma	The Luma histogram shows the distribution of the luminance or the black to white information along a horizontal scale, and lets you monitor how close the detail is to being clipped in the blacks or whites of the video. The histogram also lets you see the effects of gamma changes in the video. 1. Shadows: The left edge of the histogram, if the graph mostly centralized on the left side, indicated that the image was dark. 2. Midtone: The middle area of the histogram, if the graph mostly centralized in the middle, indicated that the image was under a good exposure. 3. Highlight: The right edge of the histogram, if the graph mostly centralized on the right side, indicated that the image was bright.
RGB	RGB Histogram separately indicates the luminance distribution of red, green and blue channels. You can analyze the color consistence of the image.

How to set the histogram:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Scopes item and press the knob to open the sub menu.
3. Rotate the knob, select the Histogram item and press the knob to select different items.



Assist

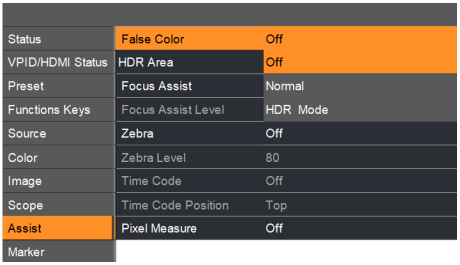
False Color

The false color feature displays color overlays on your image that represent exposure values. With a range of tonal values on the LCD at once, this gives you a broader overview of your exposure which you can use to refine lighting on set or make exposure changes to compensate.

Item	Description
Normal	SDR False Color.
HDR	HDR False Color.

How to set the False Color:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Assist item and press the knob to open the sub menu.
3. Rotate the knob, select the False Color item and press the knob to select different items.

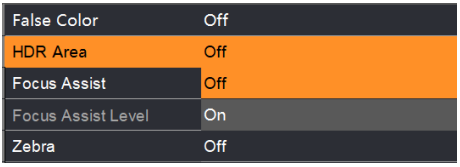


HDR Area

To analyze the HDR area over 203 Nits in the image and display as a percentage.

How to set the HDR Area:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Assist item and press the knob to open the sub menu.
3. Rotate the knob, select the HDR Area item and press the knob to set on/off.
4. When the EOTF is set to HDR, the account for HDR area can be read.



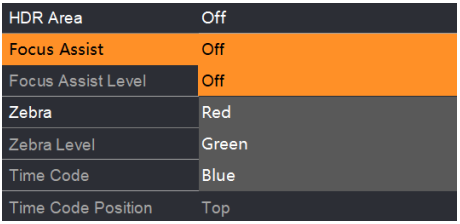
Focus Peaking

Assistance for manual focus that displays a color on the edge of the focusing item, the color includes red, green, blue.

Item	Description
Red	\
Green	\
Blue	\

How to set the Focus Peaking:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Assist item and press the knob to open the sub menu.
3. Rotate the knob, select the Focus Peaking item and press the knob to select different colors.



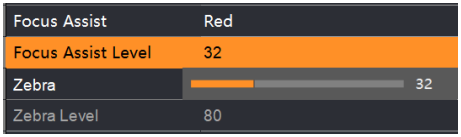
Focus Peaking Level

Set the sensitivity of the Focus Peaking detection.

How to set the Focus Peaking Level:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Assist item and press the knob to open the sub menu.
3. Rotate the knob, select the Focus Peaking Level item and press the knob, rotate the knob to set the Focus Peaking Level.

Note Only can set the Focus Peaking Level when the Focus Peaking is on.

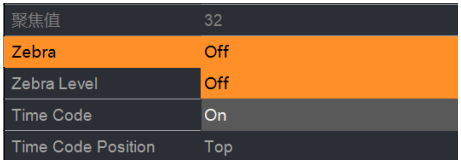


Zebra and Zebra Level

The zebra feature helps you achieve optimum exposure by displaying diagonal lines over areas of the video that exceed your set zebra level.

How to set the Zebra Level:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Assist item and press the knob to open the sub menu.
3. Rotate the knob, select the Zebra item and press the knob to set on/off.
4. Rotate the knob, select the Zebra Level item and press the knob, rotate the knob to set the Zebra Level, the volume is lower, the zebra lines are more, the volume is higher, the zebra lines are less.



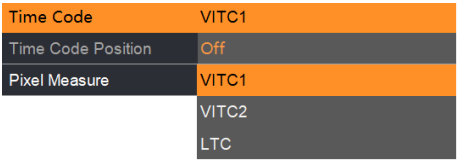
Timecode

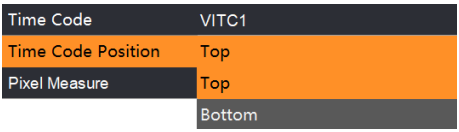
Supports Timecode modes: VITC1, VITC2, LTC. Timecode display can be located on the top or the button.

Item	Description
VITC1	A kind of Vertical Interval Timecode.
VITC2	Another kind of Vertical Interval Timecode.
LTC	Line in Timecode.

How to set different Timecode:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Assist item and press the knob to open the sub menu.
3. Rotate the knob, select the Timecode item and press the knob to select different items.



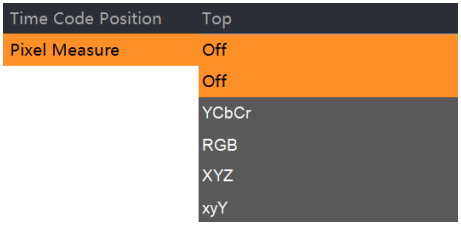


Pixel Measure

Pixel measure samples color/value information from a single pixel or a group of pixels. It is important for image quality control and exposure adjustment, great for high end production and professional cinematography.

How to set the Pixel Measure:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Assist item and press the knob to open the sub menu.
3. Rotate the knob, select the Pixel Measure item and press the knob to select different items.



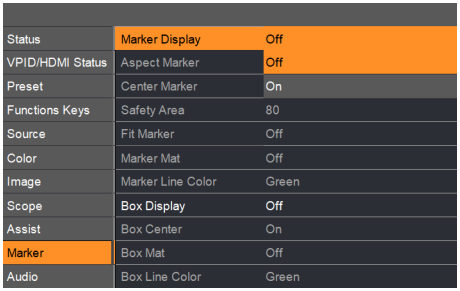
Marker

Marker Display

The Marker provides aspect ratio frame guidelines overlay on the image.

How to set Marker Display:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Marker item and press the knob to open the sub menu.
3. Rotate the knob, select the Marker Display item and press the knob to set on/off.



Aspect Marker

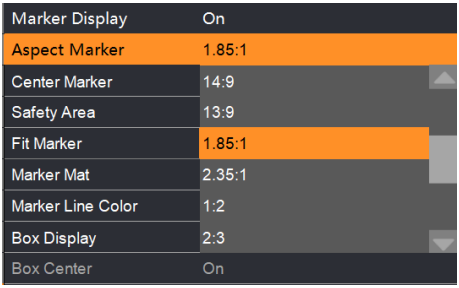
Aspect Marker ratio include: 4:3, 16:9, 15:9, 14:9, 13:9, 1.85:1, 2.35:1.

Item	Description
4:3	Traditional television and displayer ratio.
16:9	HDTV and popular displayer ratio.
15:9	CCTV ratio.
14:9	
13:9	
1.85:1	Mainly used in film production.
2.35:1	Mainly used for anamorphic film production.
1:2	Mainly used for vertical production.
2:3	
3:4	

How to set different Aspect Marker:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Marker item and press the knob to open the sub menu.
3. Rotate the knob, select the Aspect Marker item and press the knob to select different items.

Note The Marker Display should be set to “On” to activate the Aspect Marker.



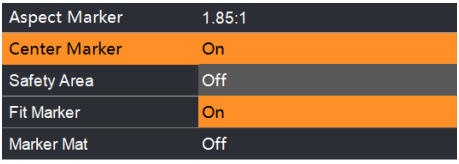
Center Marker

A crosshair marker display on the center of the screen.

How to set the Center Marker:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Marker item and press the knob to open the sub menu.
3. Rotate the knob, select the Center Marker item and press the knob to set on/off.

Note The Marker Display should be set to “On” to activate the Center Marker.



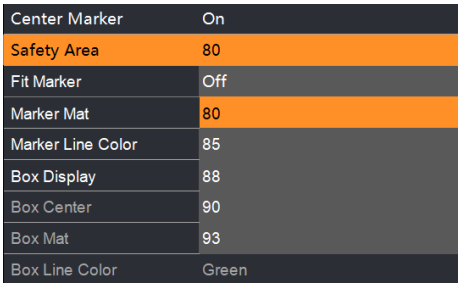
Safety Area

Guidelines for safety area to guarantee the image area could be displayed on various devices.

How to set the Safety Area:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Marker item and press the knob to open the sub menu.
3. Rotate the knob, select the Safety Area item and press the knob to set on/off.

Note The Marker Display should be set to “On” to activate the Safety Area.



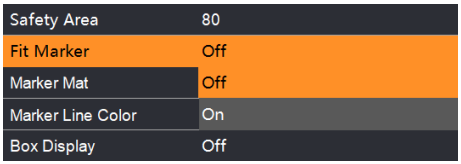
Fit Marker

Set the Safety Area ratio under the Aspect Marker ratio.

How to set the Fit Marker:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Marker item and press the knob to open the sub menu.
3. Rotate the knob, select the Fit Marker item and press the knob to set on/off.

Note The Marker Display should be set to “On” to activate the Fit Marker.

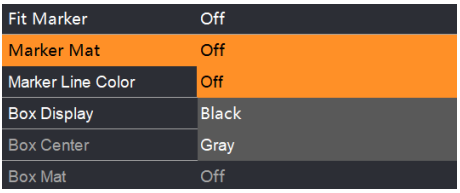


Marker Mat

Marker Mat can set the area outside the marker to black or grey.

How to set the Marker Mat:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Marker item and press the knob to open the sub menu.
3. Rotate the knob, select the Marker Mat item and press the knob to select different items.



Box Display

Box display supports line color white, green, blue, cyan, red, yellow, box center display on/off, supports Box Mat and adjusting Box size and location.

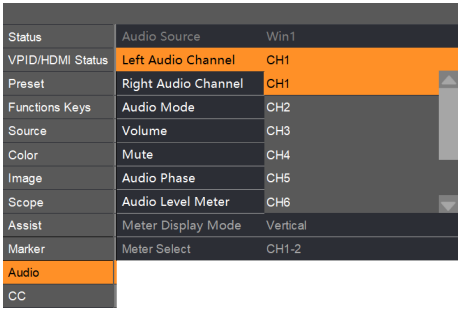
Audio

Audio Channel

Each Audio Channel can select CH1 to CH16 for output, when select one channel in the Left Audio Channel, the corresponding number of the channel under the audio meter will turn green, select one channel in the Right Audio Channel, its number will turn purple.

How to set different Audio Channels:

1. Press down ☰ key to enter the menu.
2. 2.Rotate the knob, select the Audio item and press the knob to open the sub menu.
3. 3.Rotate the knob, select an Audio Channel item ,such as Left Audio Channel, press the knob to select different audio channels.



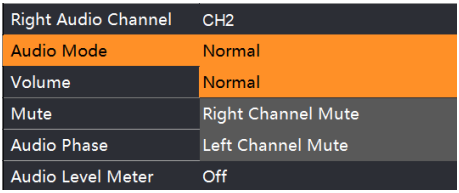
Audio Output Mode

When using the headphone, the Audio Output Mode will be activated, including Normal, Right Channel Only, Left Channel Only.

Item	Description
Normal	Audio output with both channels.
Right Channel Mute	
Left Channel Mute	

How to set Audio Output Mode:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Sound item and press the knob to open the sub menu.
3. Rotate the knob, select the Audio Output Mode item and press the knob to select different modes.

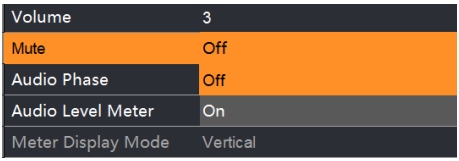


Mute

How to set Mute:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Audio item and press the knob to open the sub menu.
3. Rotate the knob, select the Mute item and press the knob to set on/off.

Note Press the knob in the main screen can directly mute the sound, press the knob again to activate the audio out.



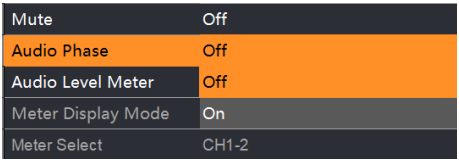
Audio Phase

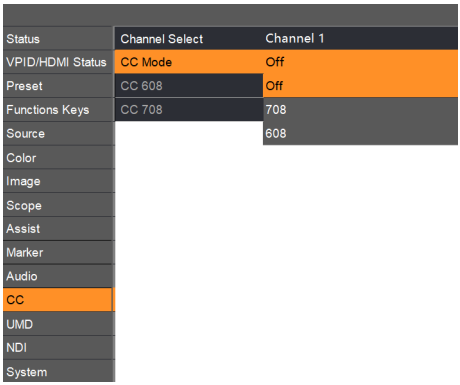
Audio Phase refers to the timing relationship between multiple sound waves and indicates how these waves align or misalign when interacting. It's a crucial element in sound reproduction and impacts the overall quality, depth, and clarity of audio.

How to set the Audio Phase:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the Scopes item and press the knob to open the sub menu.
3. Rotate the knob, select the Audio Phase item and press the knob to turn it on or off.

Note The audio phase difference only displays when audio output with the headphone.





Closed Caption

Closed captioning (CC) is a form of subtitling, a process of displaying text on a television, video screen, or other visual display to provide additional or interpretive information. The term closed indicates that the captions are not visible until activated by the viewer, usually via the remote control or menu option. On the other hand, the terms open, burned-in, baked on, hard-coded, or simply hard indicate that the captions are visible to all viewers as they are embedded in the video. Closed captions are typically used as a transcription of the audio portion of a program as it occurs (either verbatim or in edited form), sometimes including descriptions of non-speech elements.
There are two types of common CC: 708 type and 608 type.

Item	Description
708	CC 708 is the standard developed by the Consumer Technology Association for television viewing in the US, provides more caption included text, graphs and color.
608	CC 608 is a standard for closed captioning for NTSC TV broadcasts. This standard only provides basic caption such as text and simple location information.

How to set the Closed Caption:

1. Press down ☰ key to enter the menu.
2. Rotate the Knob, select the CC item and press the knob to open the sub menu.
3. Rotate the knob, select the CC Mode item and press the knob to select different items.

UMD

UMD Protocol

The KRM 4K Monitors support following UMD protocols: Local, TSL3.1, TSL4.0, TSL5.0.

Item	Description
Local	Local UMD. Compatible for application that doesn't need advanced network control or long-distance transmission.
TSL3.1	TSL3.1 is the basic standard serial protocol to ensure the stability of signal transmission and image quality.
TSL4.0	A higher-level standard that extends the basic TSL3.1, enhances the transmission and compatibility, suitable for high resolution and quality image transmission environment.
TSL5.0	The newest protocol that supports the advanced image processing and the highest transmission speed, compatible for high-end image transmission such as 4K/8K or high level postproduction.

How to set different UMD Protocol:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the UMD item and press the knob to open the sub menu.
3. Rotate the knob, select the UMD Display item and press the knob to set on/off.
4. Turn on the UMD Display, rotate the knob, select the UMD Protocol item and press the knob to select different UMD protocols.

UMD Color	White
UMD Protocal	Local
UMD Character 1	Local
UMD Character 2	TSL3.1
UMD Character 3	TSL4.0
UMD Character 4	TSL5.0
UMD ID	0

UMD Character and Color

When the multiple signals input into the monitor, their UMD character and display color can be customized to distinguish different content.
UMD color can be set to White, Red, Green, Yellow.

How to set the UMD Character:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the UMD item and press the knob to open the sub menu.
3. Rotate the knob, select the UMD Display item and press the knob to set on/off.
4. Turn on the UMD Display, rotate the knob, select the UMD Character item and press the knob to customize the character.
5. Rotate the knob to select letters, press the knob to set.

Note To customize the UMD Character, the UMD Protocol should be set to Local.

UMD Color	White
UMD Protocal	Local
UMD Character 1	Channel1
UMD Character 2	Channel2
UMD Character 3	Channel3
UMD Character 4	Channel4
UMD ID	0

UMD Parameter

Set different UMD parameter to control the monitor remotely, including Baud rate, Parity Bit, UMD ID, UMD Screen ID and UMD Display ID.

Sub Menu	Item	Description
UMD ID	0-126	Only can be set when UMD Protocol is TSL3.1 or TSL4.0
UMD Screen ID	0-65534	Only can be set when UMD Protocol is TSL5.0
UMD DisplayID	0-65531	Only can be set when UMD Protocol is TSL5.0
Baud Rate	4800bps	Only can be set when UMD Protocol is TSL3.1 or TSL4.0
	9600bps	
	19200bps	
	38400bps	
	57600bps	
	115200bps	

How to set UMD Parameter:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the UMD item and press the knob to open the sub menu.
3. Rotate the knob, according to different UMD Protocols, select different sub menus, set the different items.

Status	UMD Display	On
VPID/HDMI Status	UMD Color	White
Preset	UMD Protocal	TSL3.1
Functions Keys	UMD Character 1	Channel1
Source	UMD Character 2	Channel2
Color	UMD Character 3	Channel3
Image	UMD Character 4	Channel4
Scope	UMD ID	0
Assist	UMD Screen ID	0
Marker	UMD Display ID	0
Audio	Baud Rate	38400
CC	LED Tally	Off
UMD	UMD Tally Color	RG
NDI	Tally Source	TSL
System	UDP Port Number	3000

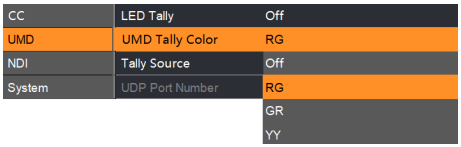
Status	UMD Display	On
VPID/HDMI Status	UMD Color	White
Preset	UMD Protocal	TSL5.0
Functions Keys	UMD Character 1	Channel1
Source	UMD Character 2	Channel2
Color	UMD Character 3	Channel3
Image	UMD Character 4	Channel4
Scope	UMD ID	0
Assist	UMD Screen ID	0
Marker	UMD Display ID	0
Audio	Baud Rate	38400
CC	LED Tally	Off
UMD	UMD Tally Color	RG
NDI	Tally Source	TSL
System	UDP Port Number	3000

Tally

The KRM 4K Monitor supports UMD Tally control by TSL3.1 Protocol, the color can be set to Red/Green, Green/Red, Red/Green/Yellow.

How to set the UMD Tally:

1. Press down ☰ key to enter the menu.
2. Rotate the knob, select the UMD item and press the knob to open the sub menu.
3. Select TSL3.1 Protocol, rotate the knob to LED Tally item, press the knob to set on/off.
4. Rotate the knob to UMD Tally item and set different color.



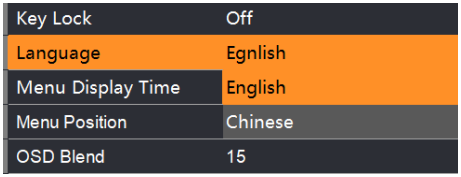
System

Language

System Language can be set to Chinese or English, default is English.

How to set the Language:

1. Press down ☰ key to enter the menu.
2. Rotate the Knob, select the System item and press the knob to open the sub menu.
3. Rotate the knob, select the Language item and press the knob to select different items.

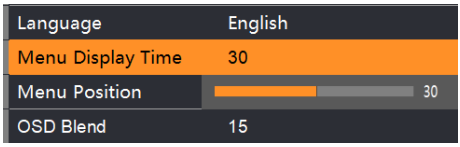


Menu Display Time

The menu display will disappear after a while when no operation occurs to avoid the screen burning. The default duration time of the OSD screen is 30s, users can customize up to 60s.

How to set the Menu Display Time:

1. Press down ☰ key to enter the menu.
2. Rotate the Knob, select the System item and press the knob to open the sub menu.
3. Rotate the knob, select the Menu Display Time item and press the knob, rotate the knob to set the volume.

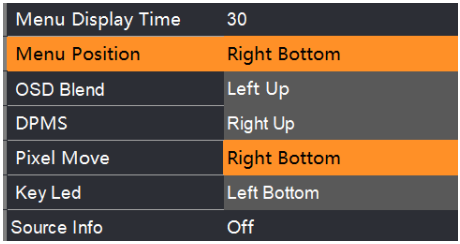


Menu Position

The menu position can be set to up left, up right, bottom right, bottom left.

How to set Menu Position:

1. Press down ☰ key to enter the menu.
2. Rotate the Knob, select the System item and press the knob to open the sub menu.
3. Rotate the knob, select the Menu Position item and press the knob to select different items.

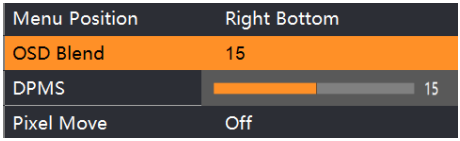


OSD Blend

The OSD menu transparency can be adjusted to decrease the distraction.

How to set OSD Blend:

1. Press down ☰ key to enter the menu.
2. Rotate the Knob, select the System item and press the knob to open the sub menu.
3. Rotate the knob, select the OSD Blend item and press the knob, rotate the knob to set the volume.



DMPS

DMPS can save power in the idle time, including Always On, Light Sleep and Deep Sleep.

Item	Description
Always On	Keep the system on.
Light Sleep	Turn off the backlight when there is no signal input over 5 minutes.
Deep Sleep	Entering standby mode when there is no signal input over 5 minutes.

How to set DMPS:

1. Press down ☰ key to enter the menu.
2. Rotate the Knob, select the System item and press the knob to open the sub menu.
3. Rotate the knob, select the DMPS item and press the knob to select different items.

USB Update

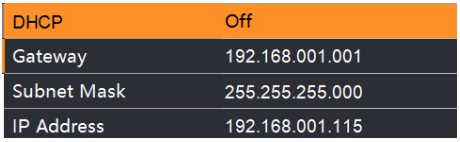
Updating FPGA, LUTs, OSD, EDP, APP please contact professionals.

Ethernet

The Ethernet setting supports DHCP and manual settings. When DHCP is set to off, user can manually set Gateway, Subnet Mask and IP Address.

How to set the network:

1. Press down ☰ key to enter the menu.
2. Rotate the Knob, select the System item and press the knob to open the sub menu.
3. Rotate the knob, select the DHCP item and press the knob to turn it on or off.
4. If the DHCP is set to Off, set the Ethernet parameters in demand.



NDI

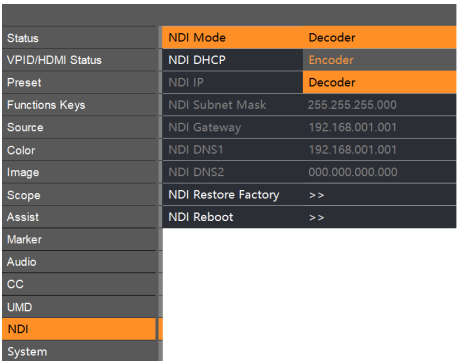
NDI Mode

The NDI monitor can provide NDI and NDI|HX encoder and decoder signal transmission up to UHD 4K60P.
The YCbCr 422 10bit H.264/H.265 codec provides high image quality.

How to set the NDI Mode:

1. Press down ☰ key to enter the menu.
2. Rotate the Knob, select the NDI item and press the knob to open the sub menu.
3. Rotate the knob, select the NDI Mode item and press the knob to select Encoder or Decoder.

Note Please connect the input and output signal cables and optical fiber before turning on the monitor to avoid device failure.



NDI DHCP

The NDI setting supports DHCP and manual settings. When NDI DHCP is set to off, user can manually set Gateway, Subnet Mask and IP Address.

How to set the NDI patameters:

1. Press down ☰ key to enter the menu.
2. Rotate the Knob, select the NDI item and press the knob to open the sub menu.
3. Rotate the knob, select the NDI DHCP item and press the knob to turn it on or off.
4. If the NDI DHCP is set to Off, set the NDI parameters in demand.

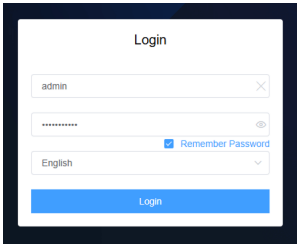
NDI DHCP	On
NDI IP	Off
NDI Subnet Mask	On
NDI Gateway	192.168.001.001
NDI DNS1	192.168.001.001
NDI DNS2	000.000.000.000
NDI Restore Factory	>>
NDI Reboot	>>

NDI Web Control

The NDI monitor has web control, user can set remote connection, input/output signal and network parameter control through RJ-45 Ethernet.
The NDI monitor is set to NDI DHCP to automatically obtain IP address, user can select the NDI item in the OSD menu to see the NDI IP address. Use the NDI IP address to login in into the NDI website for operation.
The NDI monitor has default website login username is admin and password is admin. Changing password is required after first login, after changing, please keep the login password safely.

Website Login

1. Enter the NDI IP address in the browser's address bar to enter the login website.

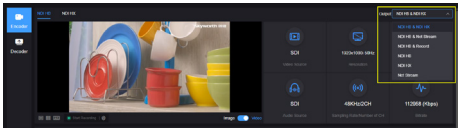


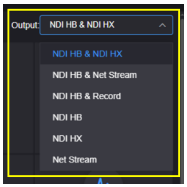
2. Enter the username and password to login into the monitor control website, the default username is admin, the default password is admin.

Codec Configuration

Output

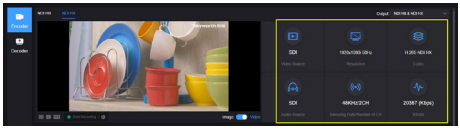
Click the upper right Output item to select different output codec.





Status Column

Display the basic information of the input signal.

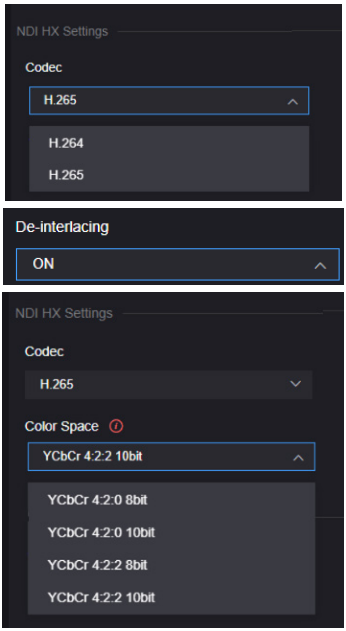


Item	Description
Video Source	Input signal.
Resolution	Input video source resolution.
Codec	The encoding protocols. High Bandwidth (Full NDI) and H.264 NDI|HX (HXsupportsmultiple versions and configurable in the video encoding).
Audio Source	Display the current audio input channel.
Sampling Rate/ Number of CH	Display the audio sampling rate and number of audio channels of the current input signal.
Bitrate	Real-time encoding code bitrate.

NDI Setting

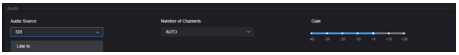
Item	Description
Group	The group name can be the combination of characters and numbers. Multiple group names are allowed to be configured, with commas separating the group names, and the default group name is “public”. If you do not want other devices in the network to find it, please set a specified group name, and other devices can be found with the specified group name. **Note** No need to save after changing the device group, device name and device channel, click the other side of the web page to effectuate the operation.
NDI Channel Name	When multiple NDI sources in the same network, change the channel name of the device to distinguish different devices.
Encoding Quality	When decreasing or increasing the encoding quality, the encoding image quality and the encoding bitrate are adjusted as well.

NDI HX Setting



Item	Description
Codec	Supports H.264 and H.265.
De-interlacing	Turn on to support interlace signal.
HX Version	Support NDI|HX and NDI|HX3, select different version in demand.
Color Space	Set the color space of the NDI|HX codec.

Audio



Item	Description
Audio Source	Select SDI or analog Line in, the default is SDI embedded audio.
Number Of Channels	Select the number of audio channels.
Gain	Gain adjustment of the input audio.

NDI Connection

NDI supports multiple connection modes, the default is RUDP. Users can change the NDI connection mode with actual use.

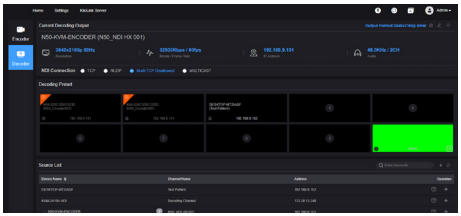
- Default: connection by Multi-UDP.
- RUDP: connection by RUDP.
- Multi-UDP Disallowed: connection by TCP unicast.
- Multicast: Connection by UDP multicast.

Decoder Configuration

Switch Mode

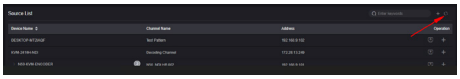
Click “Decoder” to switch to decoding configurations. Before switching to decoding mode, please check the Ethernet IP address and log in the Web page with the address.

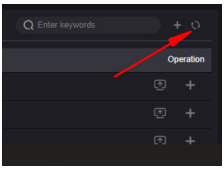
Note Encoding and decoding function of the device cannot be performed simultaneously. When switching to the decoder, the encoding function will be stopped. Use Studio Monitor to connect the NDI stream and click the gear button in the lower right corner to go to the WEB page.



Discovery of NDI sources

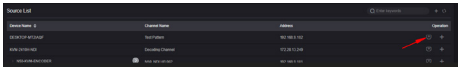
The monitor can discover NDI sources on the same LAN autocratically and display them in the source list, Click to update the network NDI sources in real time.

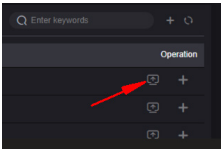




Decoding Output

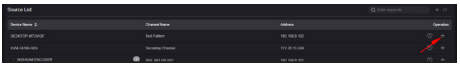
Click next to the NDI source to decode and output the video source directly.

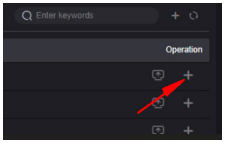




Decoding Preset

The monitor supports up to add 9 preset decoding windows, click the NDI source and the device starts decoding the video. Click next to the NDI source to add the source to a different decoding preset window.





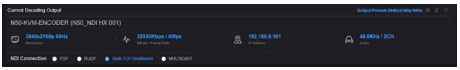
After adding the NDI sources to different preset windows, clicking the preset window and the monitor will immediately start decoding the NDI source, and finish the switching between different NDI sources.

By clicking different NDI sources to switch the decoding output. In the upper right corner of the preset window, click × to delete the added source.

There is a blank output window in decoding preset, if switching to a source without video output, the device will output the preset color. It can also be used for testing the output to the monitor by choosing a different color.

Decoding parameter configuration

“Current decoding output” displays the current decoding NDI source name, channel name, resolution/frame rate, audio parameters, source IP address, real time bit rate and frame rate and so on.



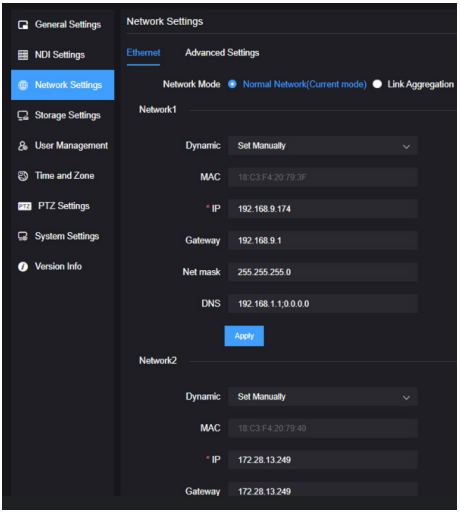
System Settings

General Settings

The general settings module provides the ability to set the device name and default language.

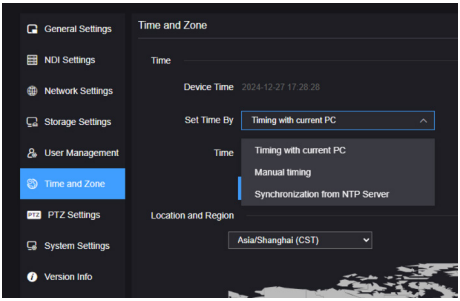
Network Settings

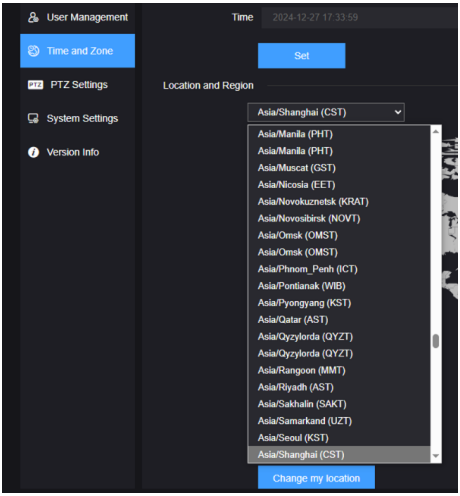
The monitor can be configured with IP address.



Area and Time

Modify the system time and area.





Konvision

WARRANTY CARD

No

User			
Tel			
Address		Postal Code	
Model. No		Serial Number	
Warranty Date		Purchase Date	

Item	Contents of Reparation	Replacement parts name	Replacement parts quantity	Remark
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

Repairer Signature	Service hotline	User Signature

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