

Product Manual

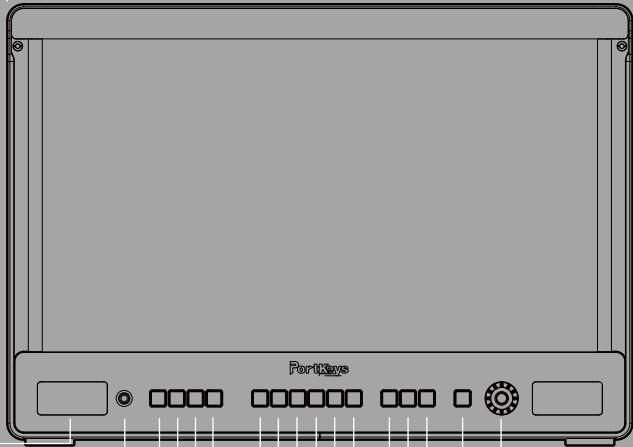


MT22DS II

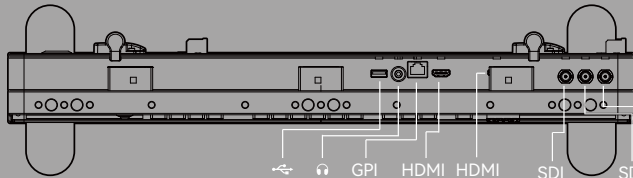
Product Information

535.5mm

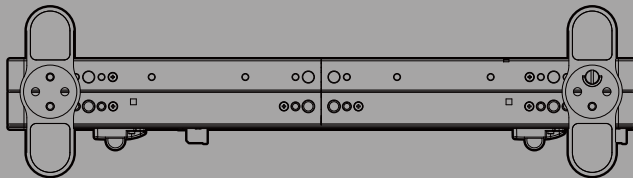
372.4mm



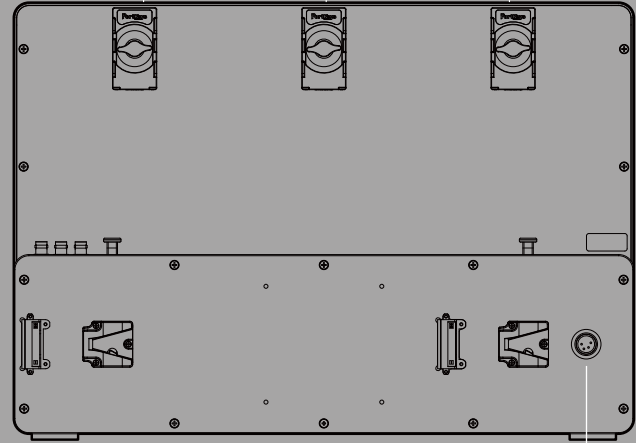
horn mouth Switch
 Power F1 F2 F3 F4 PBP R90° MIRROR
 HDMI SDI 1 SDI 2
 Overlay Image
 Capture Image Hyaline Image
 Exit Menu Knob



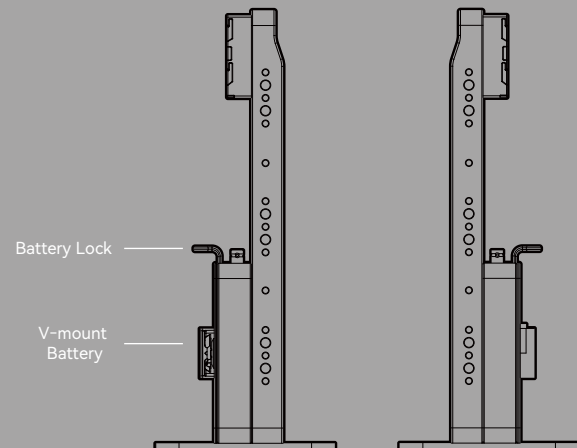
SDI IN 1 SDI IN 2 SDI OUT 1
 HDMI IN HDMI OUT GPI



NPF H and V Power Supply System NPF H and V Power Supply System NPF H and V Power Supply System



XLR connector
 12~24V
 8A~4A



Battery Lock
 V-mount Battery

Basic Parameters

Screen Size:	21.5"		
Dimension:	535.5*372.4*59.25 mm		
Viewing Angle:	89 /89 /89 /89		
Brightness:	1500nits		
Resolution:	1920x1080		
Contrast Ratio:	1000:1		
Color Gamut	DCI-P3	Color Gamut Area Ratio 100% Color Gamut Coverage Ratio 95%	$\Delta E \leq 2$
	P3 D65	Color Gamut Area Ratio 100% Color Gamut Coverage Ratio 95%	$\Delta E \leq 2$
Color Accuracy :	Rec.709	Color Gamut Area Ratio 100% Color Gamut Coverage Ratio 95%	$\Delta E \leq 1$
Weight:	7.15kg		
Material:	Aluminum Alloy		
Input Voltage:	DC 12~24V		
Maximum Power:	50W		
Fan:	Yes		
Operating System:	Portkeys OS		

Packing List

MT22DS II Monitor	XLR Power Adapter
Micro USB Drive	M2.5 Hexagon Key Wrench
Customer Service Card	Button Head Hexagon Socket Screws*3
Visa Mount (Optional)	MT22DS II PC Protection Plate (Optional)
EPP Case (Optional)	

HDMI Input / Output Signal

1920×1080p@23.97Hz,24Hz,25Hz,29.97Hz,30Hz,50Hz,59.94Hz,60Hz

1920×1080psf@23.97Hz,24Hz,25Hz,29.97Hz,30Hz

1920×1080i@50Hz,59.94Hz,60Hz

1280×720p@50Hz,59.94Hz,60Hz

Interface

Video Input/Output	Input Interface: 3G SDI X 2、GPI、HDMI X1
	Output Interface: 3G SDI X1、HDMI X1
Signal Conversion	HDMI to SDI Out, SDI to HDMI Out, Oscilloscope Output, 3D LUT Output
USB Interface	Firmware Update, LUT Loading, JPG Image Storage and Reading, JPG Manual Reading
Audio Output	Output Interface: 3.5mm Headphone Jack
Power Input	Input Interface: 4 Pin XLR 12~24V, V-mount Battery 14.8V*2
Built-in Loudspeaker	4Ω3W

Adaptable Battery Plate

V-mount Plate:	Sony V-mount
IDX Plate:	Sony V-mount
BD1-1:	NPF Battery Plate for Video Transmission × 3

SDI Input / Output Signal

1920×1080p@50fps,59.94fps,60fps

1920×1080p@50Hz,59.94Hz,60Hz YUV422

1920×1080p@23.98Hz,24Hz,25Hz,29.94Hz,30Hz YUV444/YUV422

1920×1080psf@23.98Hz,24Hz,25Hz,29.97Hz,30Hz YUV444/YUV422

1920×1080i@50Hz,59.94Hz,60Hz YUV444/YUV422

1280×720p@50Hz,59.94Hz,60Hz YUV444/YUV422

Catalogue

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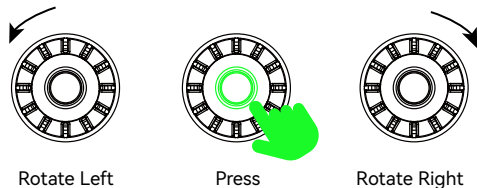
03

Software Upgrade

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Operation Instruction

Brief: All operations of the MT22DS can only be accessed via external buttons.



(Menu Knob)

Introduction to External Button Operations on the Monitor

①

Use the "Knob" to select functions and adjust parameters;
Press the "Knob" to select parameters;
Scroll the "Knob" left or right to adjust parameters;

②

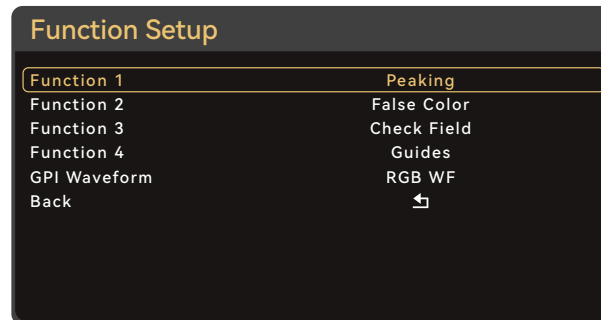
Rotate "Knob" left or right to adjust the volume

Button Introduction



(Front Buttons)

The above 8 buttons are custom function buttons. You can replace or adjust these functions in the "Software Settings" menu.
(Refer to picture 1)



(Picture 1)



When the MT22DS is connected to two or more signal sources, multiple signal source screens can be displayed simultaneously;
(This function is invalid when there is only one signal source; when two or three signals are connected, press this button to enter the multi-screen interface.)



Rotate the image by 90°;
When the "PBP" function is enabled, you can select an individual screen to rotate.



Mirror the image in four directions: left/right/up/down;
When the "PBP" function is enabled, you can select an individual screen to mirror using the "Video Source Switch" button.



Switch the signal source of the image through the button;
When the "PBP" function is enabled, you can use the "Video Source Switch" button to change the signal source for a selected screen.



When a U-disk is inserted, use this button to capture the current screen and save it to the U-disk.



When a U-disk is inserted, an image can be overlaid onto the current screen. The image can be obtained via "capture image" or manually added to the 'Capture' folder on the U-disk.

Note: The images must be in 16:9 1920x1080 JPG format and cannot exceed 1MB, or the overlay will be invalid.



Press the button and then use the "Knob" to adjust the transparency of the image overlay.

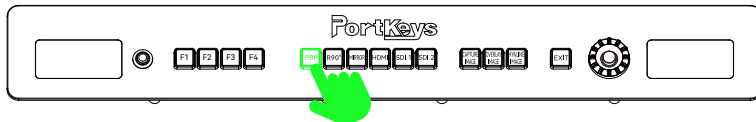


Exit the menu or software function interface.

Multi-Screen Operation

Dual-screen

When two or three signals are connected, press the "PBP" button to enter the multi-screen interface. The "Signal Button" light will light up. (the monitor automatically recognizes the number of connected signals)



(PBP button)



(Dual-screen interface)

The signal highlighted in blue indicates the current audio input.



(Triple-screen interface)



(Signal button)

When the screen interface is in triple-screen mode, you can turn off a signal by pressing any signal button (the signal button light will turn off, indicating the signal is off), entering dual-screen mode

Triple-screen

When three signals are connected, press the "PBP" button to enter the multi-screen interface. The "Signal Button" light will light up. (the monitor automatically recognizes the number of connected signals)



(PBP button)



(Triple-screen interface)

In the triple-screen interface, press the "R 90°" button or the "Mirror" button, and the three screens will change synchronously.

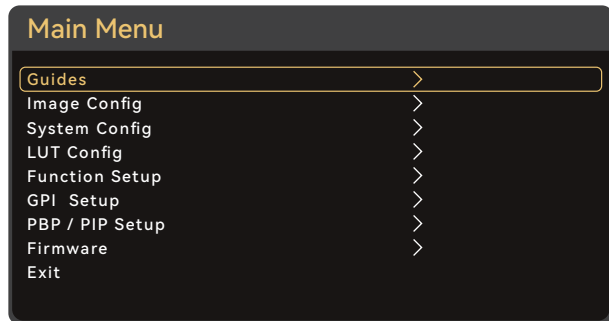


(Triple screen - Rotate 90°)



(Triple screen - Mirror)

Menu Introduction



Bring up the
main menu



Press the exit button,
complete the adjustment

Main Menu

Use the "Knob" to bring up the main menu interface.

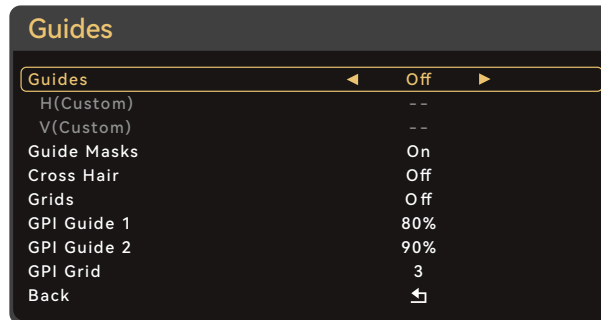
The main menu includes settings for:

"Guides", "Image Config", "System Config", "LUT Config",
"Function Settings", "GPI Settings", "PBP", and "Firmware"



(Knob)

Guides



Guides:

Off / 80% / 90% / 1:1 / 16:9 / 9:16 / 15:9 / 4:3 /
1.5:1 / 1.85:1 / 2:1 / 2.35:1 / 2.39:1 / Custom



H(Custom):

1~100% (Adjustable when the Guides is set to "Custom")

V(Custom) :

1~100% (Adjustable when the Guides is set to "Custom")

Guide Masks:

On / Off

Cross Hair:

On / Off

Grids:

Off / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9

Image Config

GPI Guide 1:

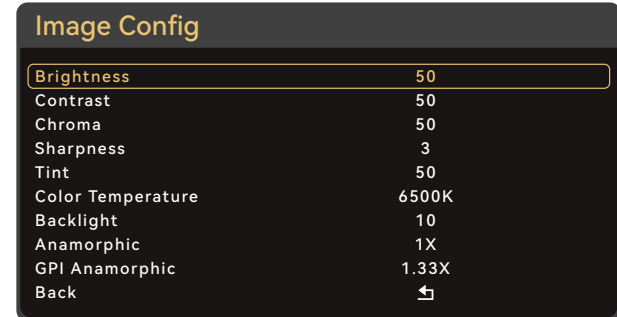
Off / 80% / 90% / 1:1 / 16:9 / 9:16 / 15:9 / 4:3 / 1.5:1 / 1.85:1 /
2:1 / 2.35:1 / 2.39:1 / Custom

GPI Guide 2:

Off / 80% / 90% / 1:1 / 16:9 / 9:16 / 15:9 / 4:3 / 1.5:1 / 1.85:1 /
2:1 / 2.35:1 / 2.39:1 / Custom

GPI Grid:

1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9



Brightness:

0~100

Sharpness:

0~10

Contrast:

0~100

Tint:

0~100

Chroma:

0~100

Color Temperature:

5600K / 6500K / 7500K / 9300K / Manual

Backlight:

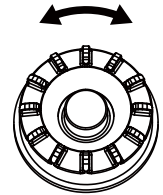
1-10

Anamorphic:

1X / 1.33X / 1.42X / 1.5X / 1.6X / 1.66X / 1.85X / 2X / 2.35X / User

GPI Anamorphic:

1X / 1.33X / 1.42X / 1.5X / 1.6X / 1.66X / 1.85X / 2X / 2.35X / User



System Config

System Config	
OSD-Language	English
OSD-Duration	Off
OSD-Transparency	Low
Menu Setup	User 1
Key light	Low
Detect Data Source	After LUT
System Reset	>
Fan	3
SDI Level A/B Out	Auto
SDI 1080P->I Out	Off

System Config	
SDI Load LUT Out	Off
Black Level	On
Back	↩

OSD-Language:

Simplified Chinese / English

OSD-Duration

Off / 5 Sec / 10 Sec / 15 Sec / 20 Sec / 25 Sec / 30 Sec

OSD-Transparency:

Off / Low / Medium / High

Menu Setup:

User 1 / User 2 / User 3 / User 4 / User 5

Key light:

Off / Low / Medium / High

Detect Data Source:

Before LUT / After LUT

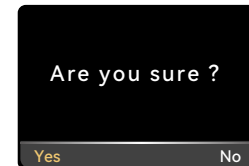
System Reset:

According to the popup, LUT reset operations can be performed.
(Refer to picture 2)

System Config	
OSD-Language	English
OSD-Duration	Off
OSD-Transparency	Low
Menu Setup	User 1
Key light	Low
Detect Data Source	After LUT
System Reset	>
Fan	3
SDI Level A/B Out	Auto
SDI 1080P->I Out	Off



(Press to confirm)



(Picture 2)

LUT Config

Fan:

0~10

SDI Level A/B Out:

Auto / Level A / Level B

SDI 1080P->I:

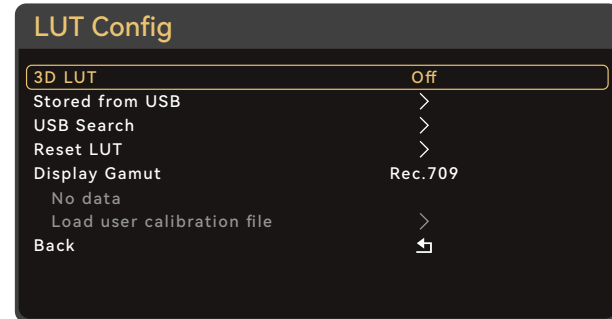
On / Off

SDI Load LUT Out:

On / Off

Black Level :

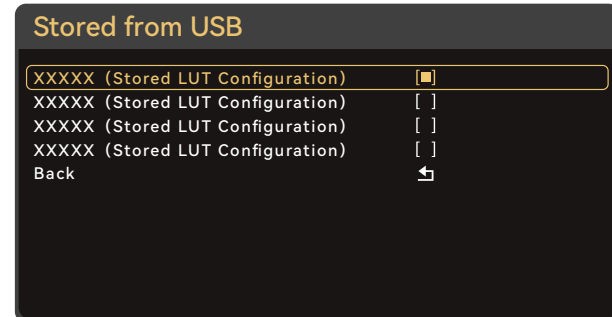
On / Off



3D LUT:

On (Null) / Off

Stored from USB:

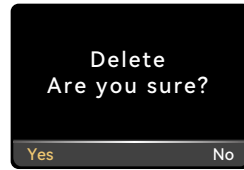


Select a file name, and press the "Knob" to load the LUT.

To delete the LUT file, long press the "Knob" exceeds three seconds, According to the popup, LUT file deletion operations can be performed. (Refer to picture 3)

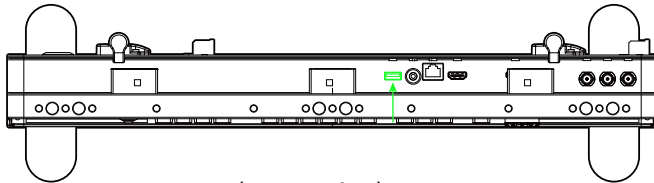


(long press exceeds three seconds)



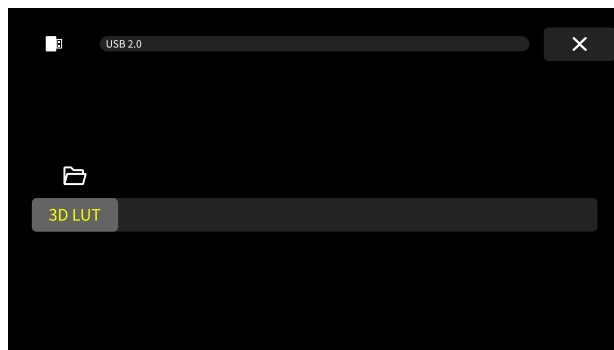
(Picture 3)

Stored from USB:

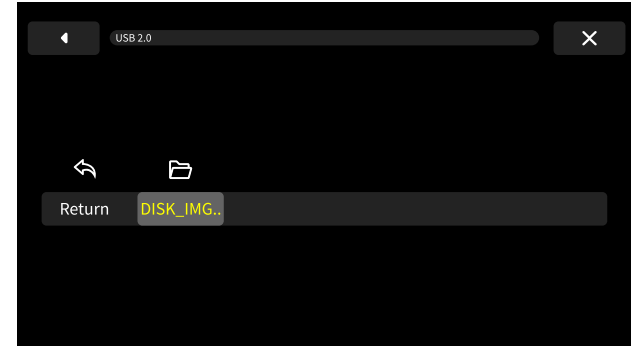


(USB Interface)

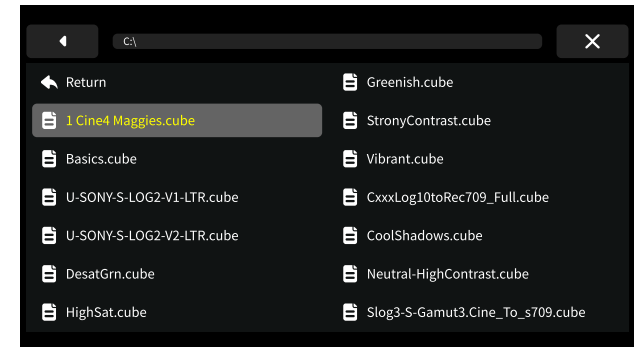
Save the LUT file (XXXXX.cube) to the root directory of the U-disk, then insert the U-disk containing the LUT file into the USB port of the MT22DS.



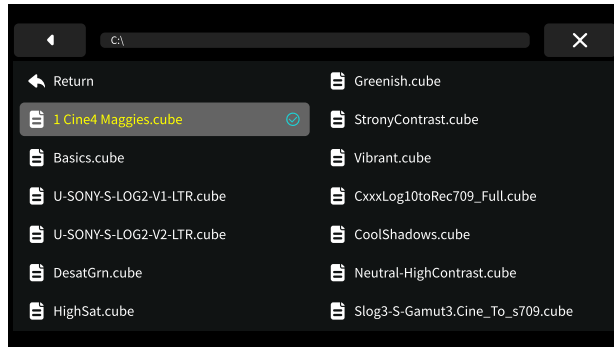
Use the "Knob" to find the "USB Search" interface in the "LUT Config".



Select the U-disk name option to enter the LUT file browsing interface. (Refer to picture 4)



(Picture 4)

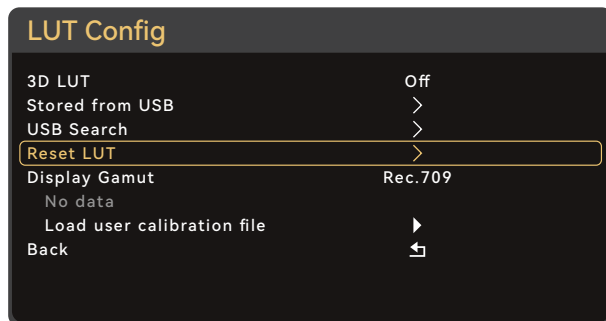


Press the "Knob". When the selected box shows the "✔", the LUT is loaded and saved to the "User Storage" interface.

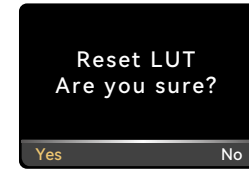
Note: LUT files support repeated storage. If you want to delete them, please enter the user storage interface. LUT file format is .Cube, supporting 16/17/32/33/64/65 precision (LUT_3D_SIZE)

Reset LUT:

According to the popup, LUT reset operations can be performed. (Refer to picture 5)



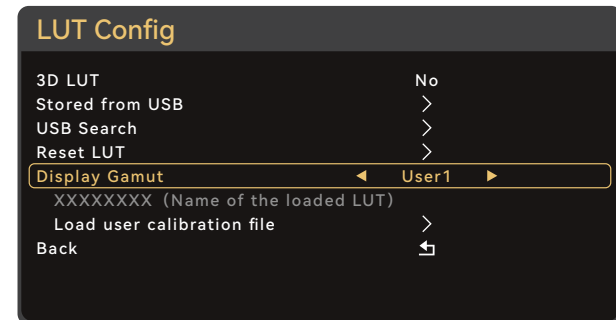
(Press to confirm)



(Picture 5)

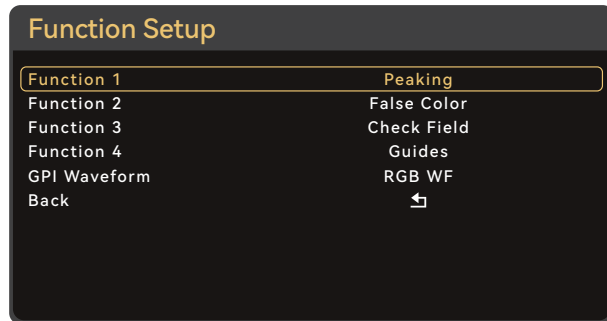
Display Gamut:

Rec.709 / P3-D65 / User1 / User2 / Bypass



When the color gamut is set to "Rec.709 / P3-D65 / User 1 / User 2," you can load LUT files in the "Load User Calibration File" option (the loading steps are the same as the "USB Search" function). The name of the loaded file will be displayed below the "Color Gamut" option.

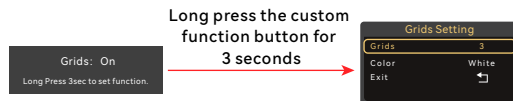
Function Setup



Software Function

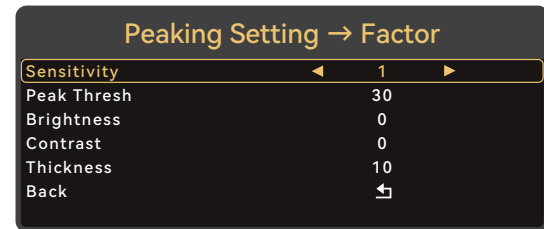
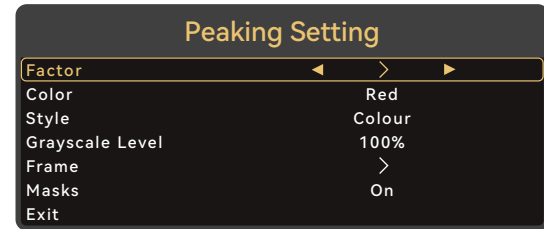
*Peaking	*Audio Meters	Input SDI 2
False Color	3D LUT	Input HDMI
*Zebra	*Time Code	Check Field*
Waveform	H2V Crop	*Guides*
*Rectangle Crop	PBP(PIP)	*Cross Hair
Grids	Input SDI 1	

Note: Set functions in the custom function keys (F1-F8).
Long press the custom function key (F1-F8) for 3 seconds to bring up the parameters settings box.



Note: Continuously pressing the custom function button can adjust the corresponding function parameter.

Peaking Setting



Sensitivity:

1-10

Contrast:

-100 - +100

Peak Thresh:

0-100

Thickness:

1-10

Brightness:

-100 - +100

Color:

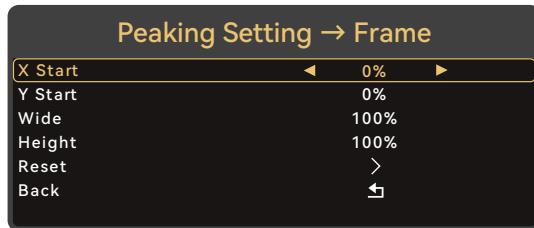
Red / Green / Blue / White

Style:

Colour / Grayscale / Colour (Edge Enhance)

Grayscale Level:

0% / 50 / 100%

**X Start:**

0%-99%

Y Start:

0%-99%

Wide:

1%-100%

Height:

1%-100%

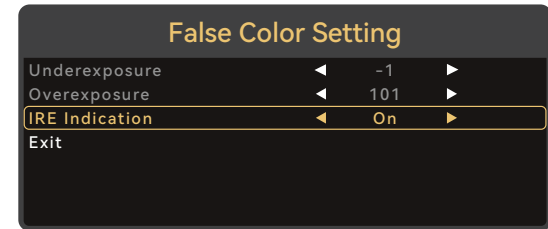
Reset:

Press the "Knob" to reset the Peaking Frame

Masks:

On / Off

False Color Setting

**Underexposure("User mode" is adjustable):**

-7 - 15

Overexposure("User mode" is adjustable):

85-110

IRE Indication:

On / Off

Zebra Setting

Zebra Setting	
Zebra	On
Area Option	High
Enable	On
IRE	100
Range	--
Color	Red
Exit	

Zebra:

On / Off

Area Option:

Low / Medium / High

Enable:

On / Off

IRE:

-7 - 109

Range (Adjustable when the "Area Option" is set to "Medium") :

±0 - ±30

Color:

White / Red / Green / Blue

Waveform Setting

Waveform Setting	
Waveform	On
Options	>
Blending	--
Warning Color	Off
Underexposure	0
Overexposure	100
Exit	

Waveform:

Off / Full Screen / Four Screen / All Types / User Mode

Waveform Options - Full Screen	
Full Screen	Luma WF
Video Display	On
Back	↩

Full Screen:

Luma WF / RGB WF / VectorScope / Luma HIS / RGB HIS

Video Display:

On / Off

Waveform Options - User Mode

Luma Waveform	<	>
RGB Waveform		>
VectorScope		>
Luma Histogram		>
RGB Histogram		>
Back		↩

Luma Waveform

Luma Waveform	<	On	>
Position		L+B	
Back			↩

Luma Waveform:

On / Off

Position:

L+T / M+T / R+T / L+C / R+C / L+B / M+B / R+B

RGB Waveform

RGB Waveform	<	On	>
Position		R+B	
Back			↩

RGB Waveform:

On / Off

Position:

L+T / M+T / R+T / L+C / R+C / L+B / M+B / R+B

VectorScope

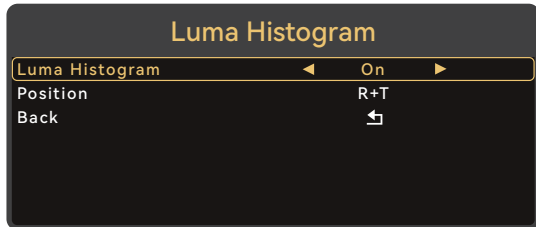
VectorScope	<	On	>
Position		M+B	
Back			↩

VectorScope:

On / Off

Position:

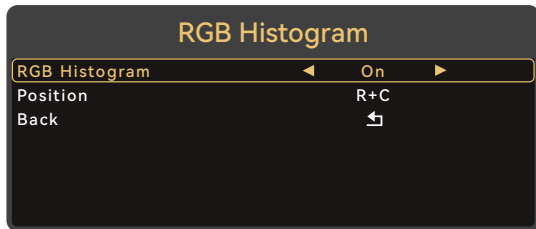
L+T / M+T / R+T / L+C / R+C / L+B / M+B / R+B

**Luma Histogram:**

On / Off

Position:

L+T / M+T / R+T / L+C / R+C / L+B / M+B / R+B

**RGB Histogram:**

On / Off

Position:

L+T / M+T / R+T / L+C / R+C / L+B / M+B / R+B

Blending ("Fullscreen" or "User Mode" adjustable) :

Off / Low / Medium / High

Warning Color:

On / Off

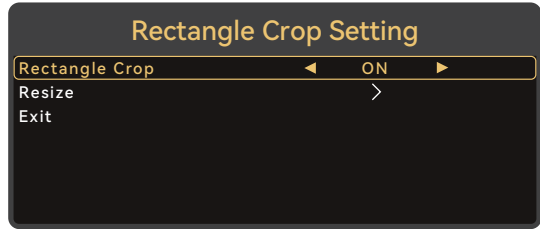
Underexposure:

-7 - 50

Overexposure:

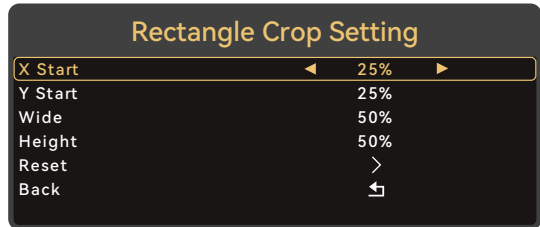
50-100

Rectangle Crop Setting



Rectangle Crop:

On / Off



X Start:

0%-99%

Y Start:

0%-99%

Wide:

1%-100%

Height:

1%-100%

Reset:

Press the "Knob" to reset Rectangle Crop

Audio Meters Setting



Audio Meters:

On / Off

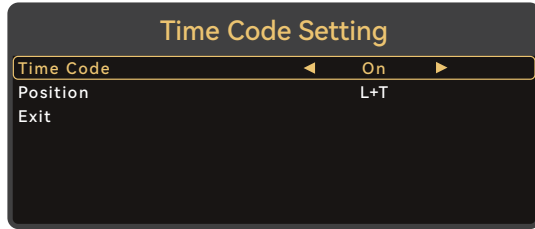
Audio Channel:

2 Channel / 8 Channel

Position:

Top / Division / Bottom

Time Code Setting



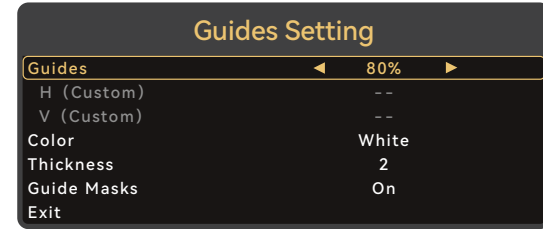
Time Code:

No / Off

Position:

L+T / M+T / R+T / L+C / R+C / L+B / M+B / R+B

Guides Setting



Guides :

Off / 80% / 90% / 1:1 / 16:9 / 9:16 / 15:9 / 4:3 / 1.5:1 / 1.85:1 / 2:1 / 2.35:1 / 2.39:1 / Custom

H (Custom) :

1~100% (Adjustable when the Guides is set to "Custom")

V (Custom) :

1~100% (Adjustable when the Guides is set to "Custom")

Color:

White / Red / Green / Blue / Black

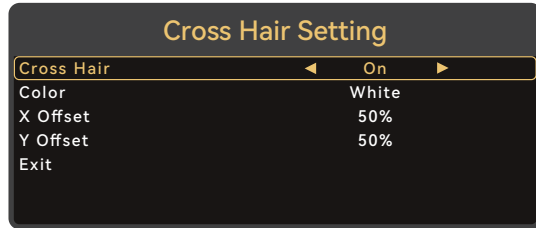
Thickness:

0-50

Guide Masks:

On / Off

Cross Hair Setting



Cross Hair:

On / Off

Color:

White / Red / Green / Blue / Black

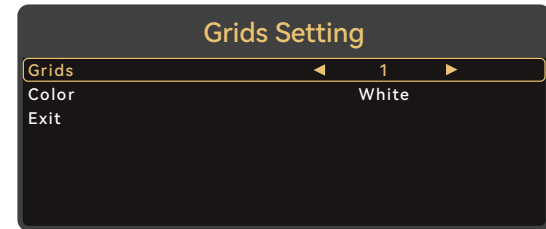
X Offset:

0%-100%

Y Offset:

0%-100%

Grids Setting



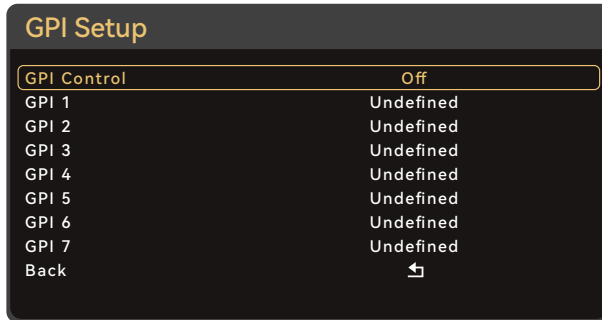
Grids:

Off / 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9

Color:

White / Red / Green / Blue / Black

GPI Setup



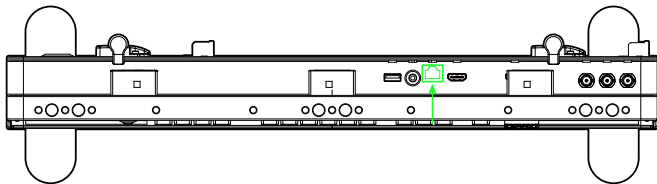
GPI Control:

On / Off

GPI 1 / 2 / 3 / 4 / 5 / 6 / 7:

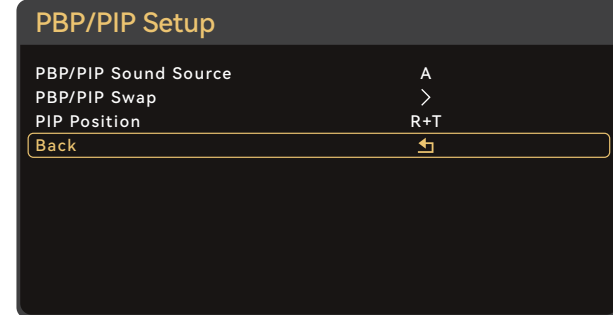
Use the "Knob" to switch software functions.

Guide 1	Input SDI 2	Y [Tally]	3D LUT	Audio Meters
Guide 2	Input HDMI	Red [CheckF]	Waveform	Time Code
Cross Hair	Anamorphic	Green [CheckF]	False Color	Rectangle Crop
Grid	R [Tally]	Blue [CheckF]	Peaking	Backlight
Input SDI 1	G [Tally]	Mono [CheckF]	Zebra	



(GPI Interface)

PBP/PIP Setup



PBP/PIP Sound Source:

A / B

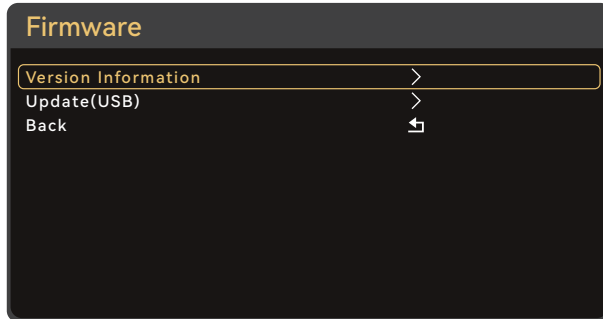
PBP/PIP Swap:

In dual-screen mode, use the "knob" to switch the screens left and right.

PIP Position:

R+T / L+B / R+B / L+T

Firmware



Version Information:

Check the firmware version according to the popup window.(Refer to picture 6)

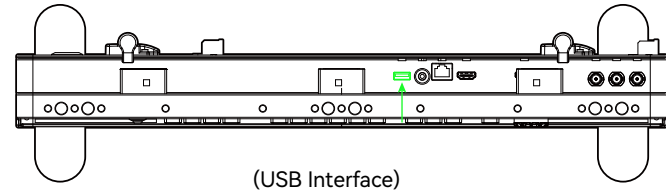


(Press to confirm)



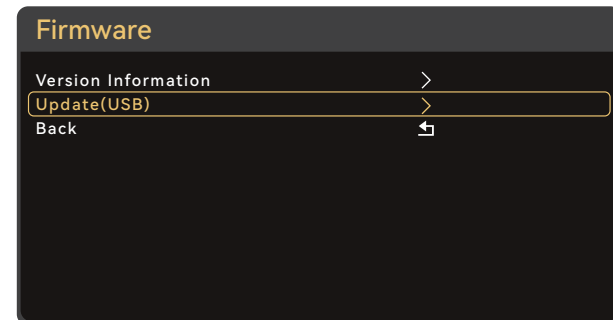
(Picture 6)

Update(USB)

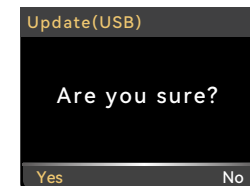


Save the upgrade file (MT22DS.bin) to the root directory of the U-disk, then insert the U-disk into the USB port of the MT22DS.

Use the "Knob" to find the "Software Upgrade (USB)" option in the "Firmware" section to upgrade the firmware. (Refer to picture 7)



(Press to confirm)



(Picture 7)