LED-FW10

Video Control Server

User Manual V1.0

⚠ Before using this LED video processor, please read this instruction manual carefully and keep it for future reference.

MAGNIMAGE

Document Version：V1.0　Document Release Date：2023/11/5

Statement

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Revision History

Version	Revise Date	Revised Content
V1.0	2023-11-5	First release

Directory

Introduction

Thank you for purchasing our company's LED all-in-one video controller. Hope you can enjoy the excellent performance of this product. The design of this LED all-in-one video controller complies with international and industry standards, but improper operation may still cause personal injury and property damage. In order to avoid the possible dangers caused by the equipment, and to benefit from your equipment as much as possible, please follow the relevant instructions in this manual when installing and operating the product.

Trademark Credit

- VESA is a trademark of the Video Electronics Standards Association.
- HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.
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About the software

It is illegal to modify, decompile, disassemble, decrypt or reverse engineer to the software installed on this product.

Product Features

- Standard multiple input interfaces: HDMI2.0×1、DP1.1×1、DVI×2、3G-SDI ×1、Audio×1
- Support HDMI2.0 loop out
- Support arbitrary image scaling
- Support quick light-up screen, no need computer software connection
- Support single port 4K * 2K/60Hz (HDMI2.0/12G SDI) input
- Support window size & position adjustment and image crop
- Support four-layer full screen
- Support seamless switching between input signals and presets
- Support for custom output resolution
- Support for external independent audio input and output
- Support for custom input of EDID
- Single network port standard load 0.98 million pixels，a single machine can carry maximum width 8192 pixels and maximum height 3840 pixels
- Support template save and load
- Support connection to MAGNIMAGE C-Link series receiver cards
- Support free cable connecting
- Support receiving card serial number calibration, switch on the intelligent serial number to visually check the position of the box
- Support network port communication, establish multiple LAN controllers, and achieve wireless screen adjust
- Support scrolling subtitle function
- Support time task function
- Support multi-machine cascading splicing
- Support for central control
- Support for output freezing
- Support button lock
- Support fiber input and fiber backup

Safety Notice

The input voltage range of the power supply of this product is 100~240V, 50/60Hz, please use the correct power supply.

When you want to connect or unplug any signal cable or control cable, please make sure that all power cables have been unplugged beforehand.

When you want to add hardware devices to this product or remove

hardware devices from this product, please make sure that all signal cables and power cables have been unplugged in advance.

Before performing any hardware operations, power off the LED video processor and discharge static electricity from your body by touching a grounded surface.

Please use it in a clean, dry and ventilated environment, and do not use this product in a high temperature, humid environment.

This product is an electronic product, please keep it away from fire, water and flammable and explosive dangerous goods.

There are high-voltage components in this product, please do not open the case or repair the device by yourself.

If you find any abnormality such as smoke or odor, please Function off the power switch immediately and contact the dealer.

Features

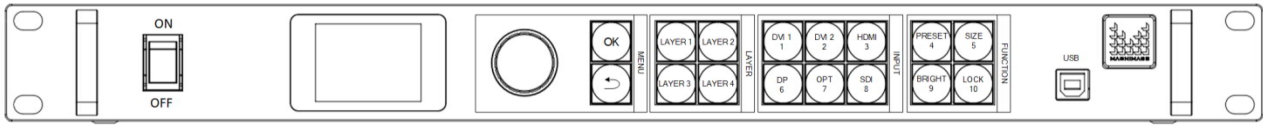
Overview

The video control server is a video controller created by Magnimage, which integrates video processing, splicing, switching and LED screen sending card functions. This series integrates various professional input interfaces, supports up to 4K×2K/60Hz, LED-FW10 single machine can load 8.80 million pixels, and support 10 Gigabit Ethernet ports for output. can be used with the company's support to connect Magnimage C-Link series receiving cards.

The load capacity of all-in-one video controller is twice of the ordinary all-in-one video controller, and supports EDID management and customize output resolution, single controller output max width can be 8192 pixel, up to 120HZ refresh rate. Greatly improved the utilization of output bandwidth. The output image can be scaled point by point according to the actual size of the LED display.

Complete video input interface, including: DVI×2、3G-SDI×1、DP1.1×1(support 4K×1K/60Hz)、HDMI2.0×1（support 4Kx2K/60Hz）、HDMI2.0 Loop ×1（only supports loop out HDMI2.0 input signal source）、support AUDIO(IN and OUT).and it supports network, square port USB and RS232 serial port control, which is convenient for interconnection and control with a variety of video equipment.

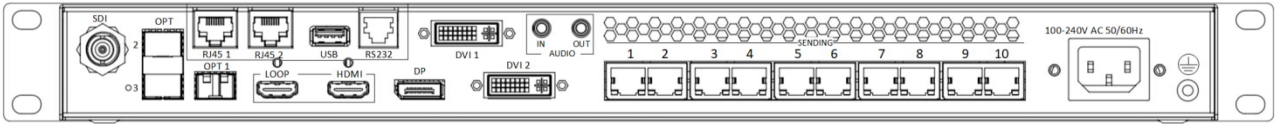
Front Panel



Button Description			
Rotary knob	select menu items and adjust parameters	HDMI1	HDMI input port selection key/template number 3
OK	In the default state, the menu is called out, and the menu status is the confirm button	DP	DP input port selection key/template number 6
⮌	Return button, return to the previous menu	OPT	OPT input port selection key/template number 7
LAYER 1	Layer1	SDI	SDI input port selection key/template number 8
LAYER 2	Layer2	PRESET	Quickly call up the preset template calling interface/template number 4
LAYER 3	Layer3	SIZE	Layer size adjust shortcut key/template number 5
LAYER 4	Layer4	BRIGHT	Large screen brightness adjustment shortcut key/template number 9
DVI1	One click full screen button	LOCK	Key lock/template number 10
DVI2	Quickly call up the template button		

Back Panel

LED-FW10-B



Video Input Port	
DVI1-DVI2	2 x DVI input ports
DP1.1	1 x DP input ports
HDMI2.0	1 x HDMI2.0 input ports
3G SDI	1 x 3G SDI input ports
Audio（in）	1 x Audio input ports

Model	Video Output Port	
LED-FW10-B	Gigabit Ethernet Port	10port， single port load 0.98 million pixels, whole unit load 8.80 million pixels
	HDMI Loop Out	Can loop out HDMI2.0 input source
	Audio（out）	1 x Audio output ports

Technical Specifications

Input Information		
Port	Quantity Of	Resolution Specification
DVI	2	1920×1080/60Hz、3840×1080/60Hz and customized
DP	1	DisplayPort 1.1 、 support 3840 × 1080/60Hz and customized
HDMI 2.0	1	HDMI 2.0、support 3840×2160/60Hz and customized
3G SDI	1	Support HD-SDI， 3G-SDI （Only layer 4 supports SDI
Audio IN	1	It can be connected to external audio and output audio signals with a multi-functional card

Output Information		
Port	Quantity Of	Resolution Specification
Gigabit Ethernet Port	10	Single port load 0.98 million pixels, whole unit load 8.80 million pixels,a single machine can carry maximum width 8192 pixels and maximum height 3840 pixels
HDMI2.0 LOOP	1	Can loop out HDMI2.0 input source
Audio OUT	1	The HDMI 2.0 interface comes with an audio channel that can directly output audio signals through the machine

Control Port	
Ethernet Communication Port	Two-way RJ45 control port, used to connect to the host computer or multi-machine cascade communication
Square USB Port	Used to connect to the host computer
RS232 Port	For central control

Machine Specification	
Input Voltage	100-240V AC~50/60Hz 0.6A
Operating Temperature	0-45℃
Dimensions	482.6×362×44mm (L × W × H)
Net Weight	4.1KG
Power Consumption	50W

Use Menu

Using the product menu system can easily and intuitively set the machine to meet the user's use requirements

The all-in-one video controller uses a full-color LCD display to display the entire user menu. When the user does not operate or the operation times out, the default state will be displayed on the LCD screen. If you use the buttons on the front panel of the machine to set the machine, the LCD screen will display the corresponding menu according to the user's operation to prompt the user to operate better, faster and more intuitively.

The following will combine the button functions and the display of the LCD screen to introduce the menu system of the all-in-one video controller in detail.

How to use the buttons

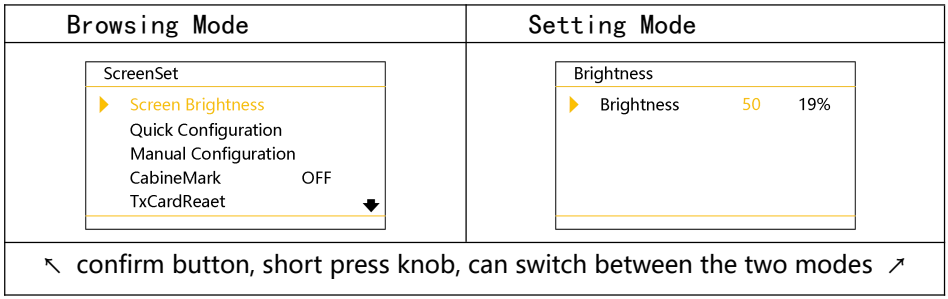
The front panel button of controller divide to 4 areas, MENU、LAYER、INPUT、FUNCTION

MENU Area:

This area contains 2 buttons and a knob that can be pressed: OK, ⮌ button and knob.

Short press the "knob", its function is the same as the confirmation button(OK) ; when press the return button(⮌) , the menu system will return to the previous menu in turn, until it returns to the default state.

In the main menu, the enter button can also used for switch between browsing mode and setting mode, for example:



Under browse mode, Anticlockwise rotate the "knob", the cursor moves up or left; rotate the "knob" clockwise, the cursor moves down or right. When moving the cursor to the item to be adjusted, press the "knob" or the confirm button to enter the setting mode, then turn the "knob" anticlockwise to decrease the current parameter value; turn the "knob" clockwise, Then the current parameter value can be increased. To continue setting other items on this page, please switch back to browse mode. If you want to return to the previous menu, please use the return button; if the adjustment is completed, press the return button to return to the previous menu until the default state.

LAYER Area:

This area contains four buttons:LAYER1、LAYER2、LAYER3、LAYER4; Corresponding to the four active screens, one click full screen button, and layer template button inside the machine.

Press and hold the button for 3 seconds to turn the corresponding layer on or off. The used layer is green, and the current selection is red.

Short press to select the screen.

INPUT Area:

This area contains 6 buttons:DVI1、DVI2、HDMI、DP、OPT、SDI。

The method for selecting signals is to first select the layer in the LAYER area, and then select the corresponding signal.

The current selection is red.

FUNCTION Area:

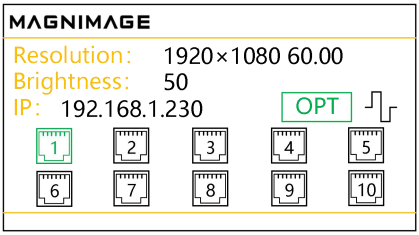
This area contains 4 buttons：PRESET、SIZE、BRIGHT、LOCK。

Button	Default operation of button system
PREST	Quickly call up the preset template calling interface
SIZE	Call out the adjust layer size menu interface
BRIGHT	Shortcut button for adjusting the brightness of the large screen
LOCK	Button lock

Introduction to Default State

After turning on the power of the all-in-one video controller, during the system boot process, the boot interface will be displayed on the LCD screen of the front panel. After the startup is completed, the default state of the current machine will be displayed on the screen, as shown in the figure below:

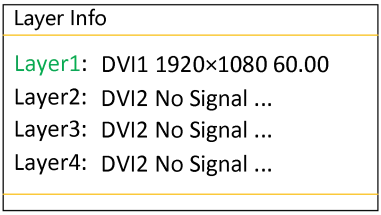
Model LED-FW10-B:



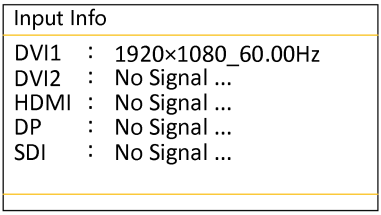
The information in the above figure is explained as follows:

Symbol	Description
Resolution	Current output resolution
Brightness	Current screen brightness
IP	Machine IP address
OPT	OPT If the icon is green, the cable communication is normal. If the icon is gray, the cable is not connected or the communication is abnormal
	The serial number of the network port. If the current network port is connected to a network cable and communication is normal, the network port will turn green to display

In the default state, rotate the button clockwise to see the following image:



You can clearly see the signal source corresponding to the layer and its resolution.Continuing to rotate the knob clockwise, you can see the following image:



You can clearly see the input status and resolution of all signal sources.

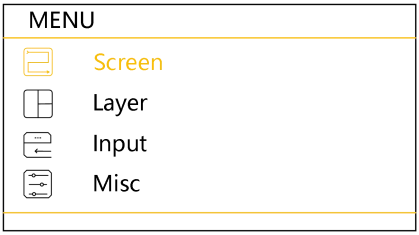
Main Menu Introduction

In the main menu, the user uses the "⮌" buttons and the knob to select and adjust each item. The operation mode is as follows:

Operate	Introduction
Open Main Menu	In the default state, press the rotary knob or slide the "magnimage" in the upper left corner
Select each Item	Rotate the knob to select each item
Adjust Parameter	parameter When the right item is a number or option parameter, rotate the knob
Enter Next Level Menu	When the project has a highlighted box, press the knob or click on the screen
Operate Function	Use knob to select the item to be operated,and press the knob or click on the screen
Return To Previous Menu	press "⮌" button
Confirm Operation	When resetting and other operations, in order to avoid wrong operation,You need to press the knob or click on the screen to confirm the operation

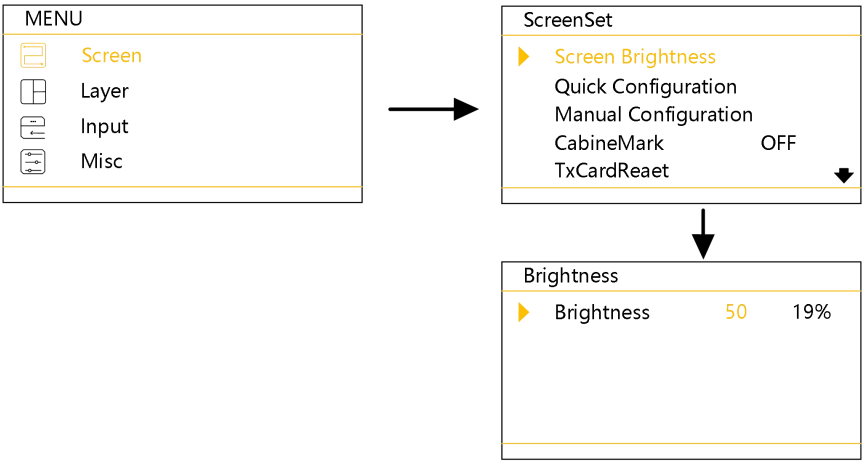
Main Menu

In the default state, press the "knob" button, and the menu system will enter the main menu state. and the LCD screen will display as shown in the figure below:

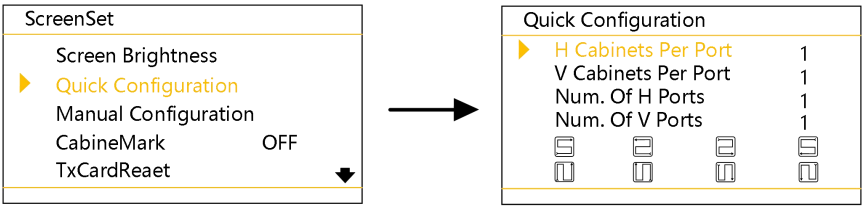


There are 4 menu items in the main menu. Use the knob to select the 4 menu titles listed above. After selecting, press the knob to enter the selected item, and press the "⮌" button to return to the previous menu

SCREEN

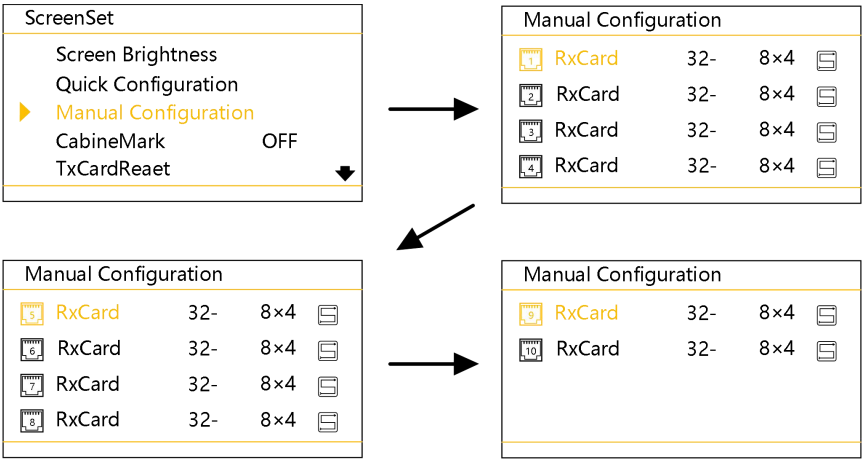


Quick Configuration:

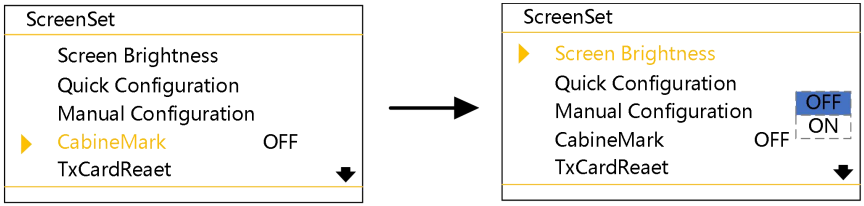


Screen Brightness	Can debug the brightness of the large screen (default value is 50, brightness value range is 0-256)
Quick Configuration	When all the network ports are routed in the same way, light the screen quickly according to the number of cabinets, the connection of the network cable, the arrangement and other information. Through the built-in quick splicing function of the machine, copy and light up multiple sending card screens

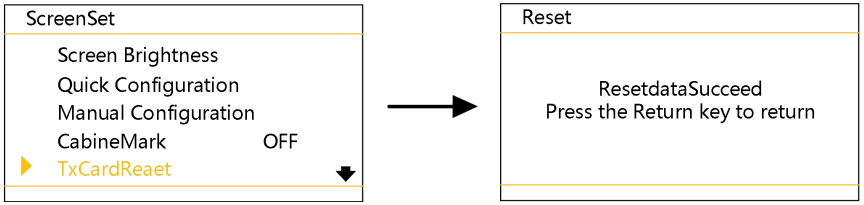
Manual Configuration:



CabineMark:

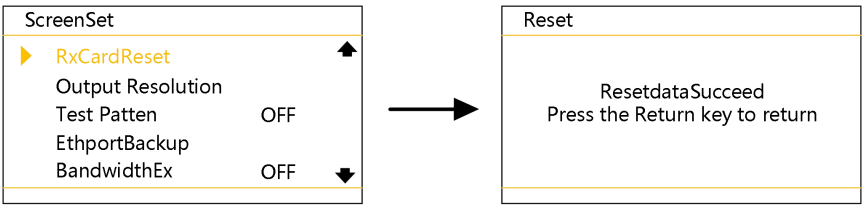


TxCardReaet:

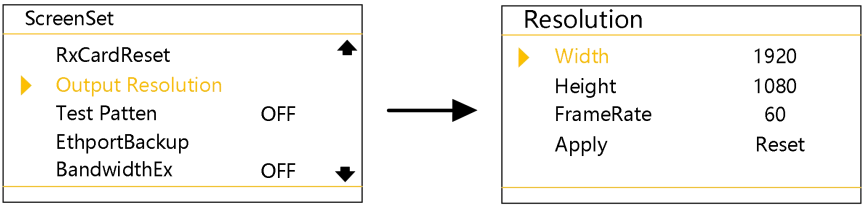


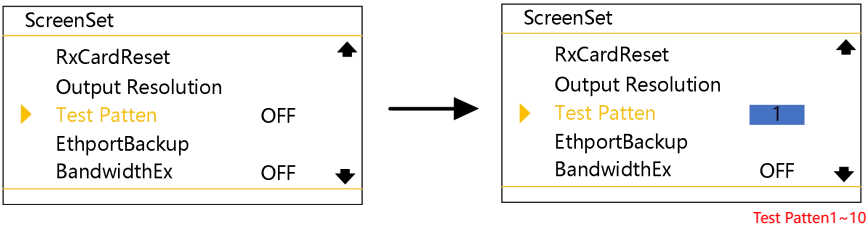
Manual Configuration	Set the corresponding routing method, box width and height quantity, and horizontal/vertical position value of the network cable offset for each network port
CabinetMark	When opening the box marking, the large screen will display the network port number and receiving card number of each box, allowing for a very intuitive connection diagram
TxCardReset	Reset sending card connection screen parameters

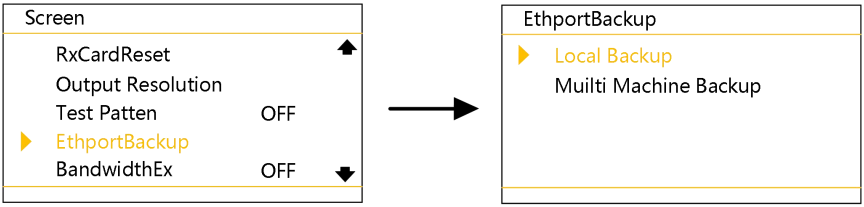
RxCardReset:



Output Resolution:

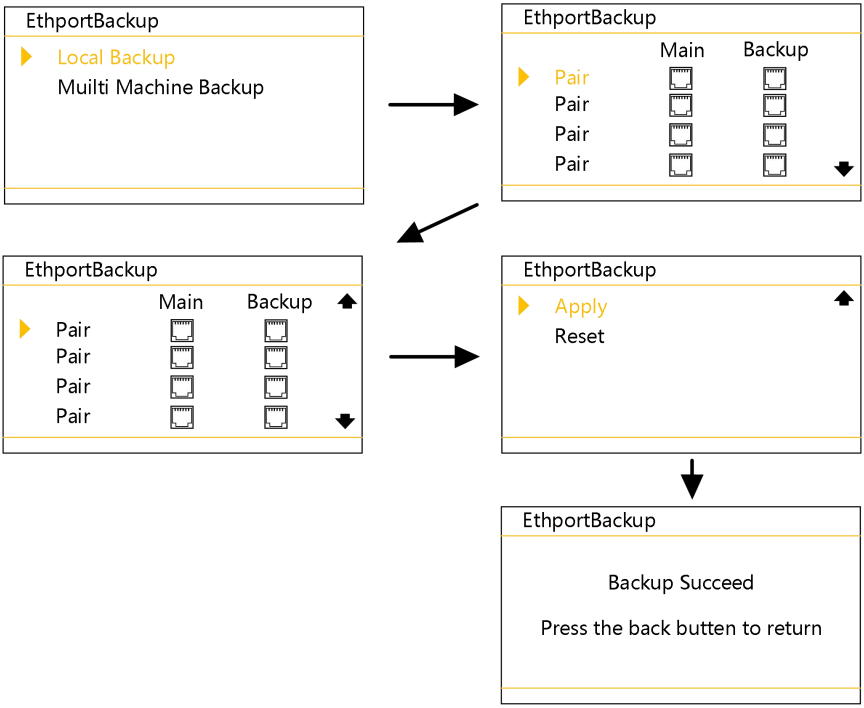




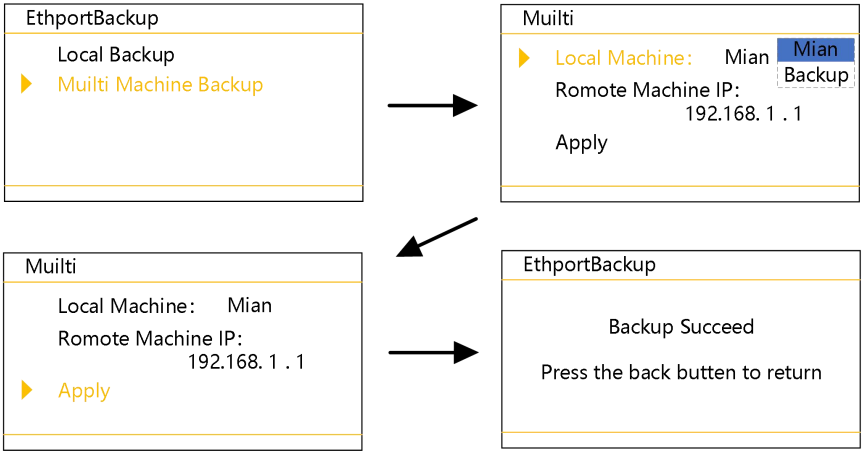


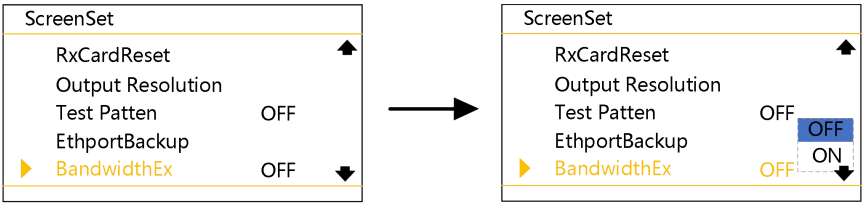
RxCardReset	Reset receiving card parameters
Output Resolution	Customize the output resolution of the machine
Test Patten	Default to off state, test screen 1-10 options

Local Backup:

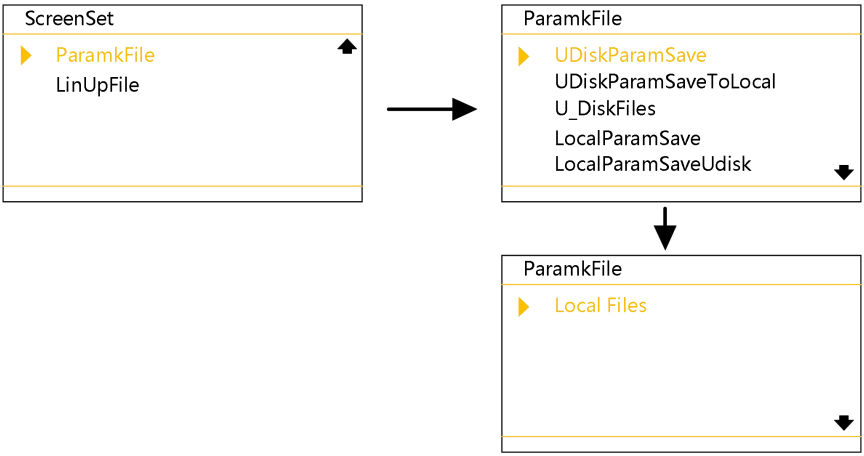


Muilti Machine Backup:





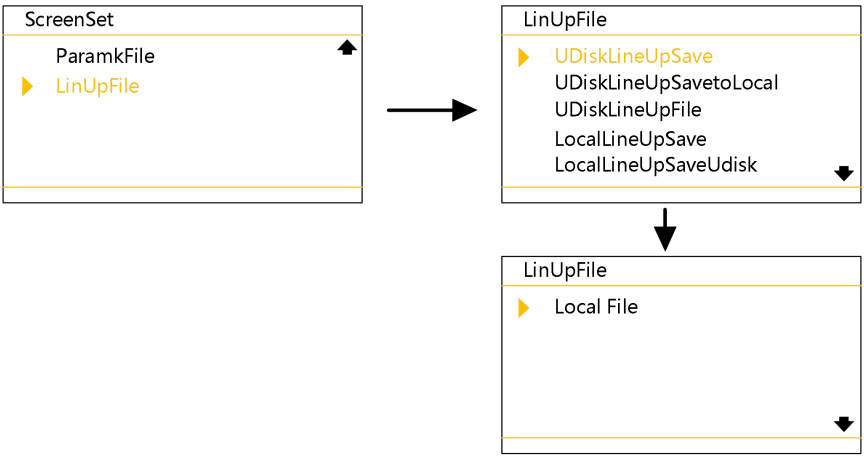
ParamkFile:



Ethport Backup	Local Backup	Single machine can specify any network port for backup.
	Multi-Machine Backup	When multiple machines are in the same LAN, you can choose another machine as the backup or primary machine, and setting the IP address of the other machine can achieve fast backup
BandwidthEx	The default state is off. This function requires the receiving card to support bandwidth expansion in order to be used. After bandwidth expansion, a single network port carries 0.98 million pixels	
ParamkFile (Format: DTR)	UDiskParamSave	Save screen single box parameters to USB flash drive
	UDiskParam SaveToLocal	Save the single box parameters of the screen in the USB flash drive to the machine
	U_DiskFiles	Obtain all screen single box parameter files in the USB flash drive
	LocalParamSave	Save screen single box parameters to the

		machine
	LocalParam SaveUdisk	USB flash drive for saving single box parameter files stored in the machine
	Local Files	Obtain all single box parameter files stored in the machine in DTR format

LinUpFile:

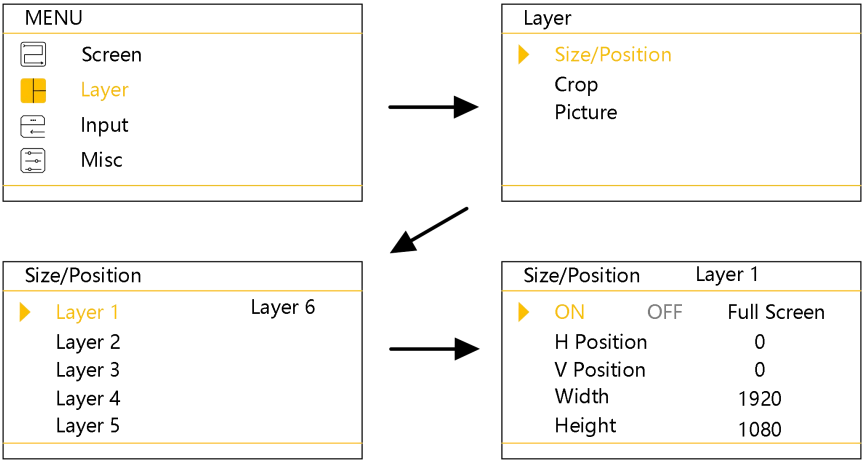


LinUpFile (Format：LMC)	UDiskLineUpSave	Save the display screen connection cable file to the USB flash drive
	UDiskLineUpSavetoLocal	Save the wiring file of the display screen connection in the USB flash drive to the machine
	UDiskLineUpFile	Obtain all display screen connection and wiring files in the USB flash drive
	LocalLineupsave	Save the display screen connection wiring file to the machine
	LocallineUp SaveUdisk	Save the display screen connection and wiring file stored by the machine to a USB flash drive
	Local File	Obtain all display screen connection and wiring files stored in the machine

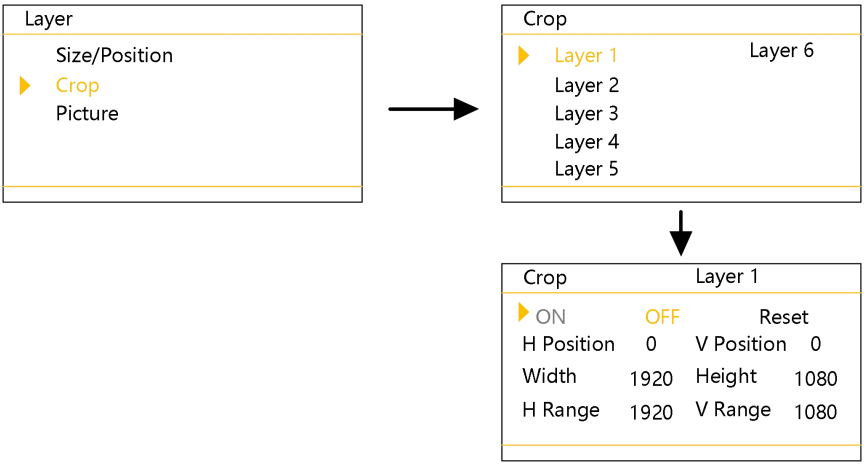
Advert：The single box parameter file and screen file functions require a USB drive to be inserted into the device's USB interface and switched to a USB drive file in the communication settings to be used. If a USB drive is not inserted or the USB communication is modified to a USB drive file, some functions will be grayed out and unavailable.

LAYER

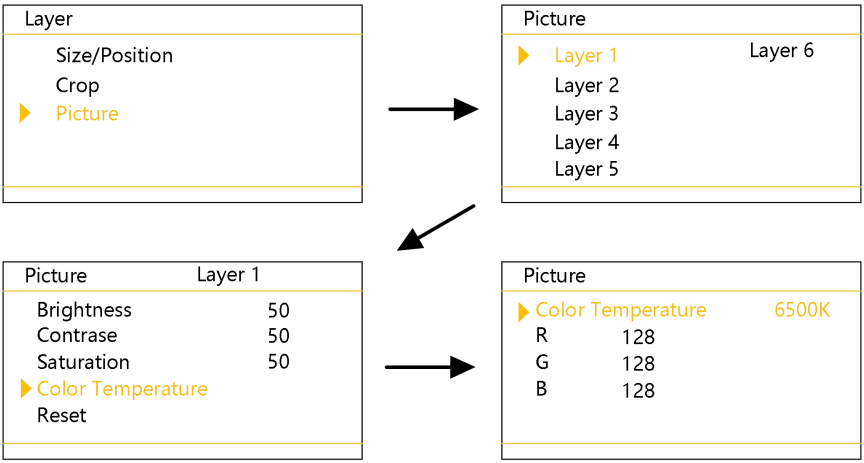
Layer:



Crop:



Picture:

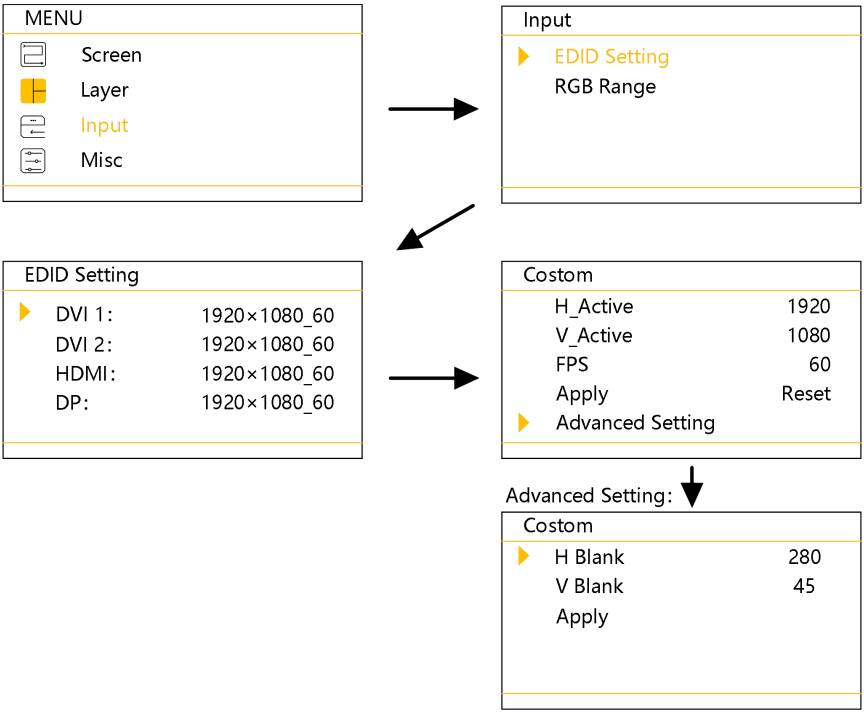


Size/Position	Can change the horizontal position, vertical position, horizontal width, vertical position of each layer	
Crop	Each layer can be independently Cropped without affecting each other, and this Crop is the signal source Crop of the layer	
	Horizontal Position	The maximum value is the difference between "width of horizontal reference" and "horizontal width"
	Vertical Position	The minimum value is 0, and the maximum value is the difference between "height of vertical reference" and "vertical width".
	Horizontal width	The maximum value is the width of the horizontal base
	Vertical Height	The maximum value is height of vertical base
	Horizontal Base	Configure the width of input resolution
	Vertical Base	Configure the height of input resolution
Picture	Brightness	Range 0-100, default value is 50
	Contrase	Range 0-100, default value is 50
	Color Temperature	4000K/5000K/6500K/7500K/8200K/9300K/10000K/11500K/user 9 modes
	Reset	Reset to factory defaults

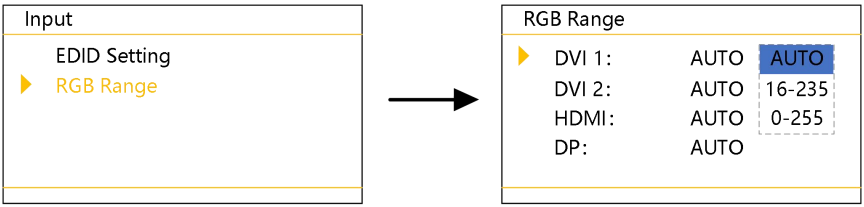
Advert: When splicing multiple machines, it is necessary to turn on the synchronization lock setting in the function settings

INPUT

Input:



RGB Range:



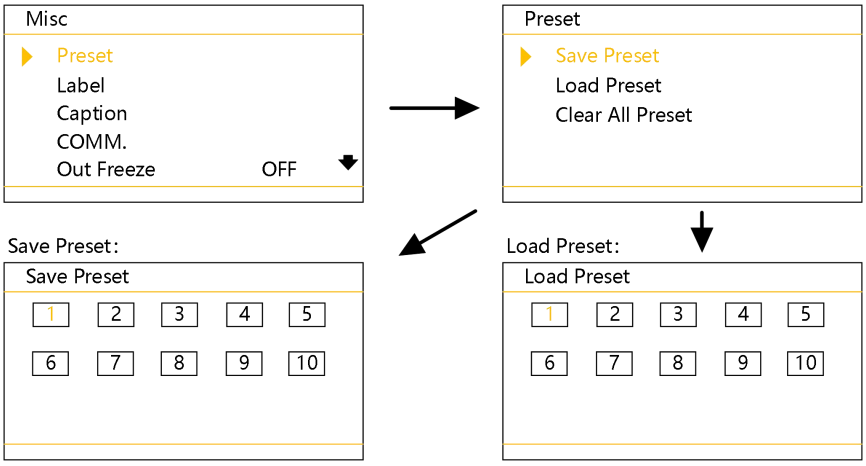
EDID Setting	Optionally set EDID for a certain input
H_Active	Horizontal width
V_Active	Vertical height
FPS	Refresh Rate
Advanced	Adjust BandWidth
RGB Range	Can modify the color range of DVI, HDMI, and DP inputs, divided into

"automatic", "0-255", and "16-235"

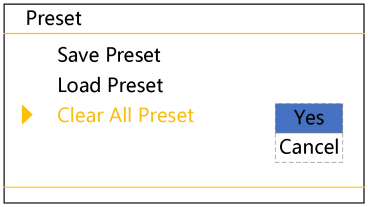
After setting up the EDID, for different computers and graphics card outputs, it may be necessary to restart the computer or unplug the signal cable. In the display settings menu of the computer, select the corresponding resolution.

MISC

Preset:

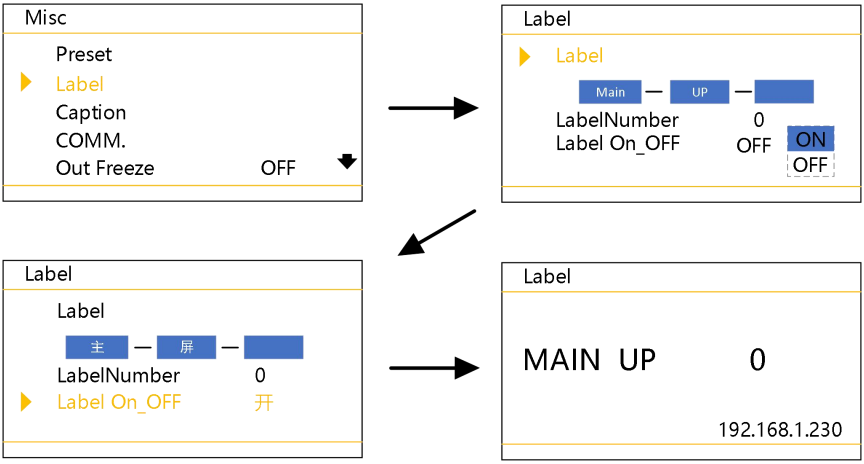


Clear All Preset:



Save Preset	Enter the save preset interface and select and press the knob button to save the preset by rotating the knob
Load Preset	Enter the loading preset interface and select and press the knob button to load the preset by rotating the knob
Clear All Preset	Clear all user saved presets by rotating the knob to select and pressing the knob button to clear the preset

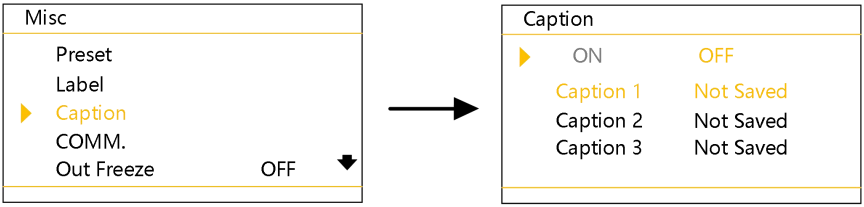
Label:



Machine LCD panel display

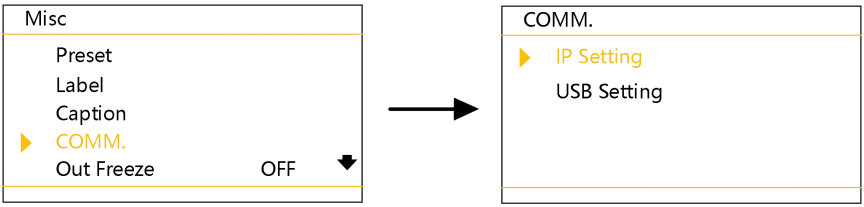
Label	Conveniently mark which areas the machine is carrying, define a serial number for the machine, and enable this function to display on the machine's LCD screen. The default interface becomes this note, as shown in the figure above

Caption:

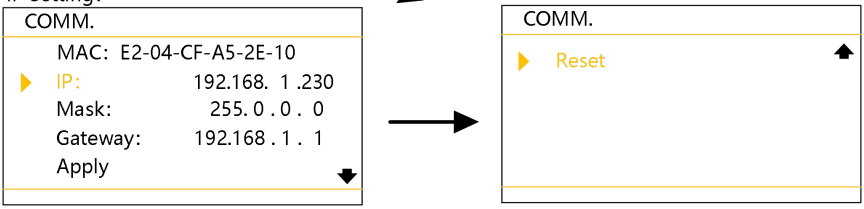


Caption	Can save 3 captions, caption settings need to be set in the upper computer software

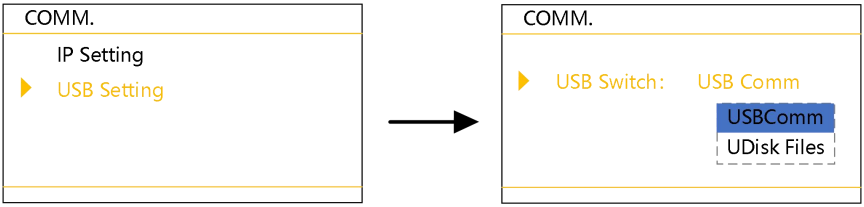
COMM.:



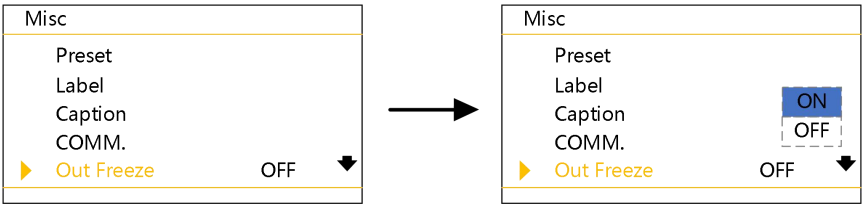
IP Setting:



USB Setting:

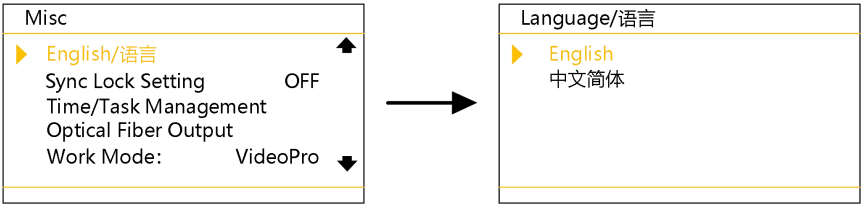


Out Freeze:

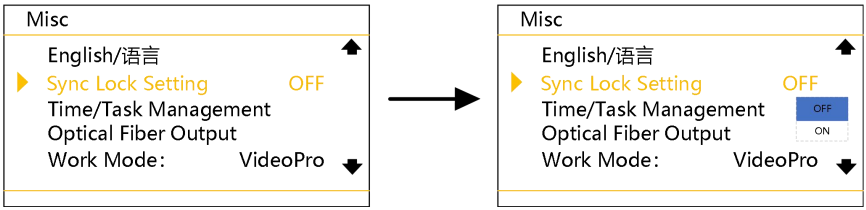


COMM	IP Setting	Can change the IP address of this machine	
	USB Setting	USB COMM	Switch this mode and use square USB communication
		UDisk Files	Switch this mode to upgrade the machine using a flat USB port
Out Freeze	Freeze the current device output screen		

English/语言：

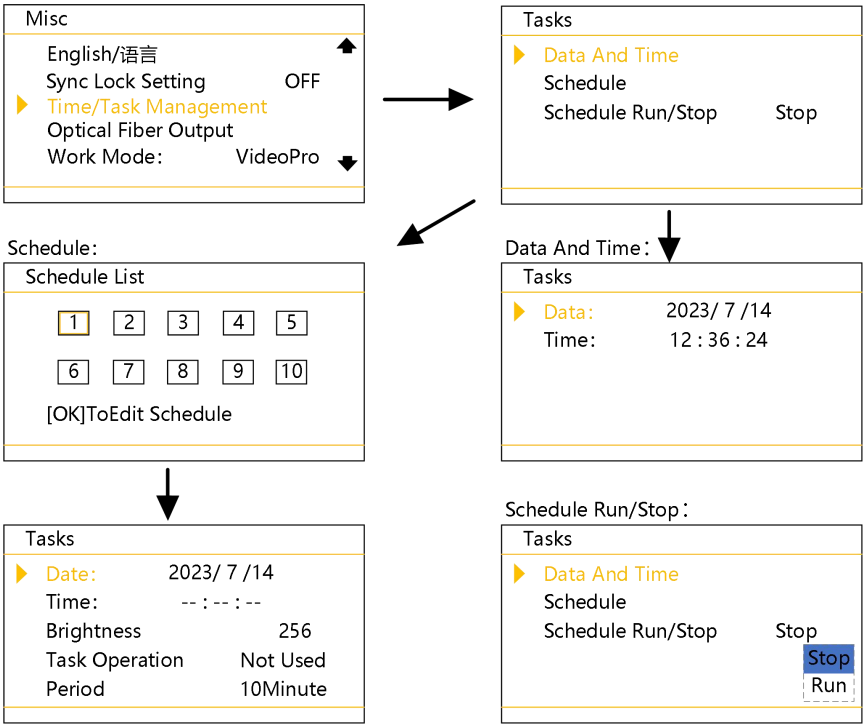


Optical Fiber Output：



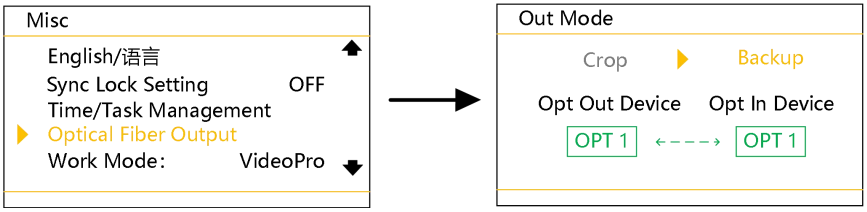
语言/Language	Can switch between English or Simplified Chinese
SyncLock Settings	The default is' off ', and when multiple devices are spliced, the synchronization lock needs to be turned on to synchronize between multiple devices

Time/Task Management:

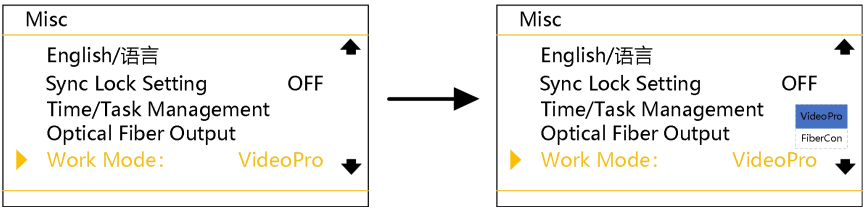


Time/Task Management	Date And Time	Set the time and date of the machine
	Tasks	10 time tasks can be set, which can be edited separately. Select a trigger time, and then select the trigger time point screen brightness or load preset. Task operations include "single time", "daily", and "cycle". For example, when Task 1 is set to 18:00:00 every day, the screen brightness is adjusted to 128, the time is set to 18:00:00, the brightness is set to "128", the task operation is set to "every day", and then the running schedule is returned. Task 1 will display yellow
	Schedule List	Run or stop a schedule

Optical Fiber Output:

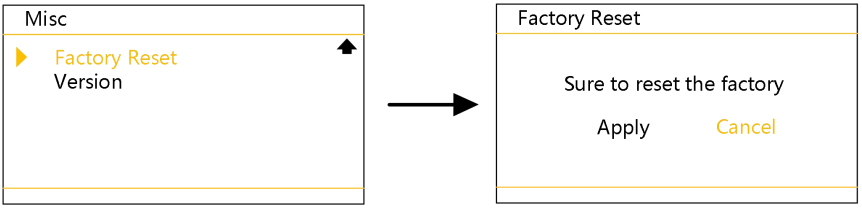


Work Mode:

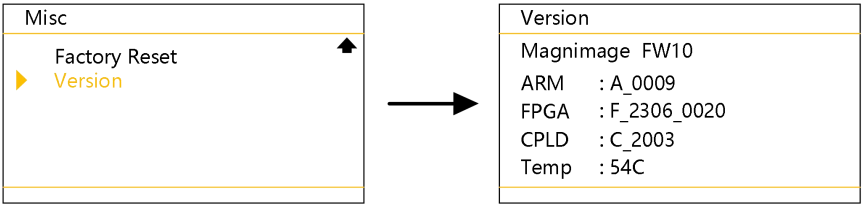


Optical Fiber Output	Supports two optical port working modes: "optical port hot backup" and "optical port copy output", with the default being optical port hot backup mode.
Working Mode	Supports "two in one" and "photoelectric" working modes, and the default is "two in one" mode.

Factory Reset:



Version:



Factory Reset	Restore the machine factory settings
Version Information	Check the ARM, FPGA, CPLD versions and current operating temperature of the machine

Warranty

Machine Warranty Period

- 24 months from the date of the user's purchase invoice;
- If the user's purchase invoice is lost, the 60th day after the production date of this product is the start date of the warranty for this product.

Non Warranty

- Faults or damages caused by abnormal use reasons such as stains or surface scratches caused by machine immersion, collision, or use;
- Dismantling or modification without our company's consent;
- Failure or damage caused by use in a working environment other than that specified by the product (such as excessive temperature, low temperature, or unstable voltage);
- Faults or damages caused by force majeure (such as fires, earthquakes, etc.) or natural disasters (such as lightning strikes, etc.);
- The product has exceeded the warranty period.