MIG-V12 Pro

User manual V1.0

⚠ Before using the 4K video switcher, please read this manual carefully and keep it for future reference.

MAGNIMAGE

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Statement

Revision History

Document Version	Release Time	Update Instructions
V1.0	2025-3-12	First release.

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Brief Introduction

Thank you for purchasing our MIG-V12 Pro video switcher. We hope you can fully enjoy the excellent performance of this product. This video switcher is designed in accordance with international and industry standards, but improper operation may still cause personal injury and property damage. To avoid potential dangers associated with the equipment and maximize its advantages, please follow the relevant instructions in this manual when installing and operating the switcher.

Trademark Credit

- VGA and XGA are registered trademarks of IBM.
- VESA is a trademark of the Video Electronics Standards Association.
- HDMI, HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.
- Even if the company or product trademark is not specifically stated, the trademark has been fully recognized.

About Software

The software installed on this product can not be modified, decompiled, decrypted or reverse engineered. All the above behaviors are illegal.

Product Features

- 8 *4K main output and 4*4K AUX output.
- 1 Multi-window preview is supported, and the preview interface can be customized.
- 1 HDMI output, can be used for console real-time display or AUX output.
- 16 mixed matrix input, a variety of 4K input cards can be selected.
- Supports 4Kx2K/60Hz RGB4:4:4 input.
- A single board supports up to 12*4K layers.
- The maximum number of layers is 24.
- Supports 8 pixel-to-piexl background.
- Supports HDCP1.4&2.2.
- Supports 2 groups of output custom resolutions, one group per output card.
- Supports input signal EDID management.
- Supports image crop and zoom function of layers.
- Supports color key, mirror, feathering, shadow and other layer effects.
- Supports layer border, brightness, contrast and color temperature adjustment.
- Supports external synchronization and multi-machine cascading.
- Support dual power supply redundancy backup.
- Supports AUX output of PGM or PVW images.
- Supports IP monitor.
- Supports the use of MIG-H9 and MIG-H9mini event controller to control the on/off of the video switcher MIG-V12Pro.
- It can be used with MIG-H9, MIG-H9mini event controller or PC terminal software control.

Safety Notice

- The input voltage range of this product's power supply is 100~240VAC, 50/60Hz. Please use the correct power supply.
- When you want to connect or remove any signal line or control line, make sure that all power lines have been unplugged in advance.
- When you want to add hardware devices to this product or remove hardware devices from this product, make sure that all signal lines and power lines have been unplugged in advance.
- Before performing any hardware operations, turn off the power of the MIG-V12 video switch and release your static electricity by touching the ground surface.
- Please use in a clean, dry and ventilated environment. Do not put this product into high temperature, humidity and other environments for use.
- This product is an electronic product. Please keep away from fire source, water source and inflammable and explosive dangerous goods.
- There are high pressure components in this product. Please do not open the chassis or repair this equipment by yourself.
- If you find smoke, odor and other abnormal conditions, please immediately turn off the power switch, and contact the dealer.

Function Introduction

Summary

MIG-V12 Pro is the latest high-performance 4K video switcher launched by Magnimage. It features a hardware architecture based on large-capacity high-speed FPGA and high-speed digital bus matrix, with internal RBG 24bits/60Hz processing. Additionally, it comes equipped with a powerful scaling engine that supports seamless multi-screen output, delivering clear images with high color accuracy, distinct layers, smooth performance, and no lag. The system supports mixed matrix input and customizable selection of various 4K input modules, including 4Kx2K/60Hz RGB4:4:4 input/output, enabling real-time preview of both input and output images.

MIG-V12 Pro video switch supports a variety of signal source input: 12G-SDI, DP1.2, HDMI2.0, supports 4Kx2K/60Hz input, can realize EDID management of the input signal, can be expanded to 4 input boards at most, and can realize synchronous locking of the input signal, ensuring synchronous output of the signal.

When used with MIG-H9 and MIG-H9mini event controller, a single MIG-H9 or MIG-H9mini event controller can control multiple MIG-V12 Pro video switchers. It supports fade-in and fade-out transitions between layers, as well as switching between multiple scenes and images. This setup is widely used in auto shows, commercial settings, conferences, product launches, stage performances, and more.

Technical Specifications

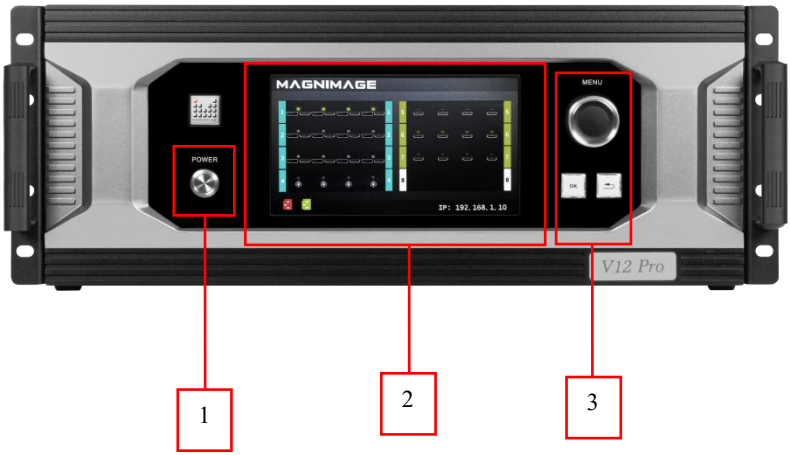
Input Information			
Input Board Type	**Port**	**Quantity**	**Resolution Specifications**
4DP/4HDMI	DP1.2/HDMI2.0	4/4	3840x2160/60Hz, 7680x1080/60Hz and customized
2DP/2HDMI+2SDI	DP1.2/HDMI2.0 +12G SDI	2/2+2	3840x2160/60Hz, 7680x1080/60Hz and customized / 4K SDI backward compatibility
4SDI	12G SDI	4	3840x2160/60Hz downward compatibility

Output Information				
Board Type	**Interface Type**	**Port**	**Quantity**	**Resolution Specifications**
Main Output Board	4HDMI +4OPT	HDMI2.0 +10G fiber	4+8	VESA 3840 x 2160/60Hz, 3840 x 2160/50Hz and customized, The maximum output limit is 7680 pixels for a single port and 3500 pixels for the highest
Auxiliary Output Board	AUX Output	HDMI 2.0	4	VESA 3840 × 2160/60Hz, 3840 × 2160/50Hz and customized,single output limit is up to 7680 pixels and maximum is up to 2600 pixels
	HDMI/IP monitor Output	RJ45/ HDMI2.0	1/1	1920×1080/60Hz
	Multiple Pre-monitoring Outputs	HDMI1.3	1	1920×1080/60Hz

Machine Specifications	
Input Voltage	100～240V AC，50/60Hz
Power Consumption	520W
Dimension	482.6×470.5×184.2mm （L×W×H）
Net Weight	17KG
Operating Temperature	0-30℃

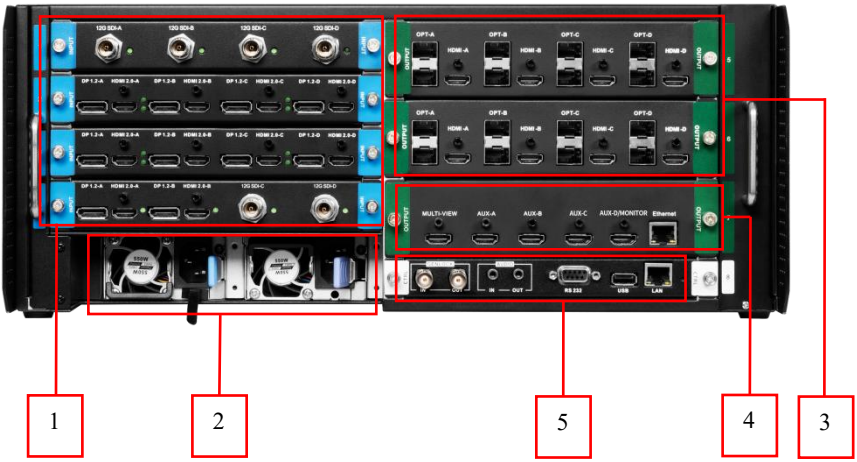
Introduction to Front and Rear Panels

Front Panel



1. POWER: Power standby button.
2. Touch screen: display the current working status of the machine, can browse input information, firmware version, etc..
3. MENU: You can browse or set the menu content, including confirmation key, return key and shortcut knob.

Back Panel Introduction



1. Input area, 4 input cards, optional for a variety of 4K input interfaces.
2. Redundant power input port.
3. Output area, 8 HDMI2.0 & 8 group OPT port output.
4. MULTI-VIEW: Multiple preview window ports.

   AUX/MIONITOR: HDMI monitor port and AUX4 mode are selected from two options

   AUX1-AUX3: 3*AUX output ports.

   Ethernet: IP monitor.
5. GENLOCK IN&OUT：

   Genlock Input/output ports.

   AUDIO IN&OUT: Audio input/output port (not yet available).

   RS232: RS232 control port.

   USB: For host upgrade.

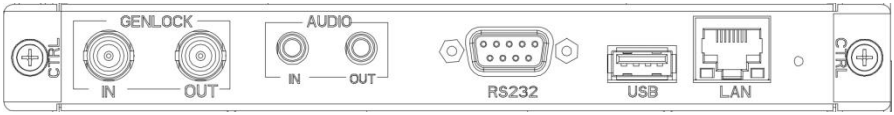
   LAN: Control port, used to connect with MIG-H9, MIG-H9mini event controller or PC terminal.

MIG-V12 Pro Board Introduction

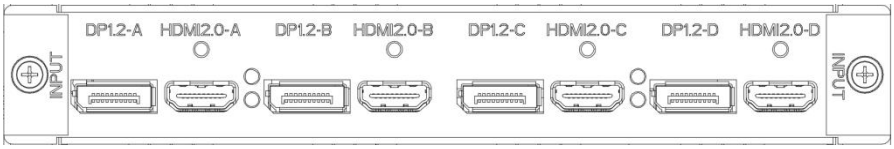
The MIG-V12 Pro video switcher has a rich selection of board resources. The control board is the standard resource, which is the core component of the whole device. The output board is the standard resource, and the input board is optional resources, which can be matched at will according to actual needs.

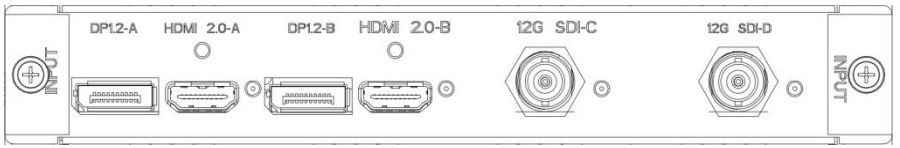
In addition, there are four output types of output cards, namely: main output, AUX auxiliary output, multi-preview output, and console monitor output.

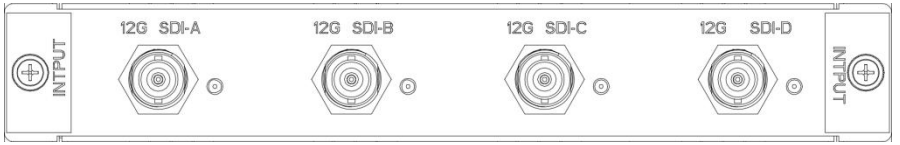
Control Board:

MIG-V12 Pro-Control	
	
GENLOCK IN&OUT	Genlock Input/output ports.
RS232	Control interface.
USB	USB interface for video switcher hardware program upgrade.
LAN	Network control interface, used to connect with MIG-H9, MIG-H9mini event controller or PC terminal.

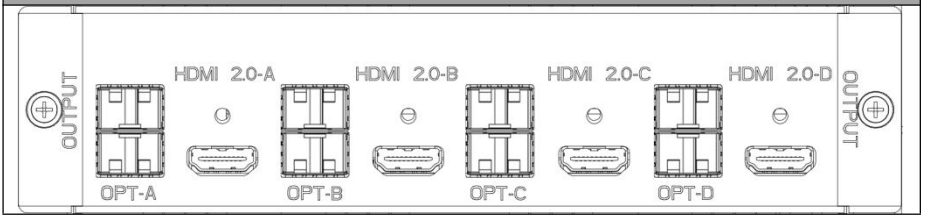
Input Board:

MIG-V12Pro-INHDMI DP (DP1.2*4, HDMI2.0*4 input card)	
	
Signal Specifications	DP1.2, HDMI2.0 standard, supports 3840x2160@60Hz, 7680x1080@60Hz, and supports EDID management function.
Interface Specification	FULL SIZE 20 Needle and HDMI TYPE-A

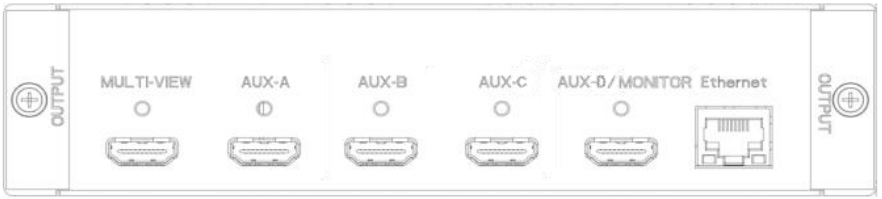
MIG-V12Pro-INHDMI DP SDI (DP1.2*2, HDMI2.0*2, 12G-SDI*2 input card)	
	
Signal specifications	DP1.2, HDMI2.0 standard, support 3840x2160@60Hz, 7680x1080@60Hz, support EDID management function; Compatible with 12G-SDI and below;
interface specification	FULL SIZE 20 Needle, HDMI TYPE-A and BNC/mother interface

MIG-V12 Pro-IN SDI (12G-SDI * 4 input card)	
	
Signal Specifications	12G SDI, supporting 3840x2160@60Hz downward compatibility.
Interface Specification	BNC / Mother port

Output board:

MIG-V12Pro-OUTHDMIOPT


Signal	HDMI2.0 standard, supports 3840 x 2160@60Hz, supports custom output resolution.
Specifications	10G OPT, supports 3840x2160@60Hz, supports custom output resolution.

MIG-V12Pro-OUTAUX		
		
Signal Specifications	MULT-VIEW	Multiple preview output ports, 1920x1080@60Hz.
	AUX	Auxiliary output port, supports 3840 x 2160 @60Hz, supports customized output resolution.
	MONITOR	Video switcher monitor port, 1920x1080@60Hz.
	Enthernet	IP monitor.

Use Menu

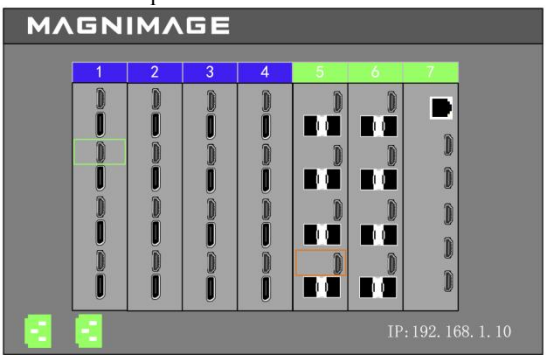
The menu system of the product allows for convenient and intuitive settings of the MIG-V12 Pro video switcher to meet user requirements. The MIG-V12 Pro video switcher features a high-brightness, high-contrast touchscreen LCD screen that displays the entire user menu. When no operation is performed or when the operation times out, the LCD screen will display a non-menu state. If you use the buttons on the front panel to set the device, the LCD screen will show the corresponding menu based on your actions, guiding you through the process more quickly and intuitively.

The following will combine the key function and LCD screen display, to introduce the MIG-V12 Pro video switcher menu system in detail.

Introduction to Default State

After opening the power supply of MIG-V12 Pro video switch, during the system startup process, the LCD screen on the front panel will display the startup interface, and after the startup is completed, the current state of the machine will be displayed on the screen, as shown in the following figure:

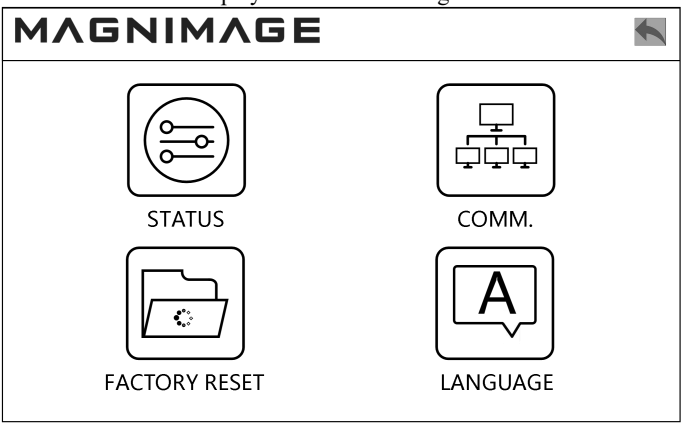
Default state interface after startup:



Input/Output Board	The blue 1-4 slots indicate the input board, and the green 5-7 slots indicate the output board.
Input Signal Connection	If the input signal is connected, a green dot appears on the left side of the port.
Output Port Connection	If the output port signal line is connected effectively, a green bar appears above the port.
Redundant Power Supply	If the power line is connected and the power supply is normal, the power icon will be displayed in green; if the power line is not connected or the power supply is not powered, it will be displayed in red.
IP Address	Displays the current IP address of MIG-V12 Pro video switcher.

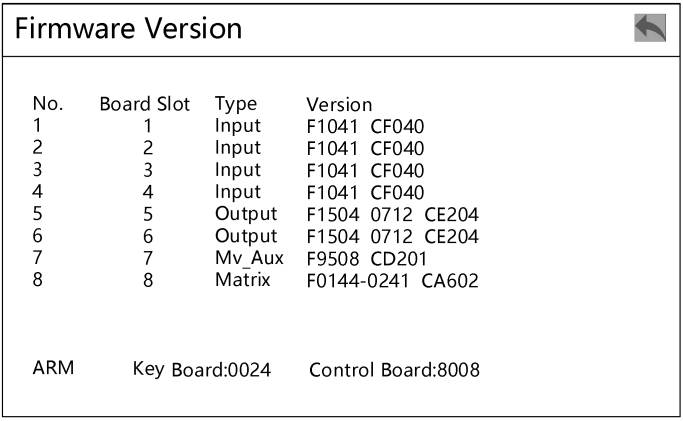
Main Menu

In the non-menu state, press the "OK" key, the menu system will enter the main menu state, and the LCD screen will display as shown in the figure below:



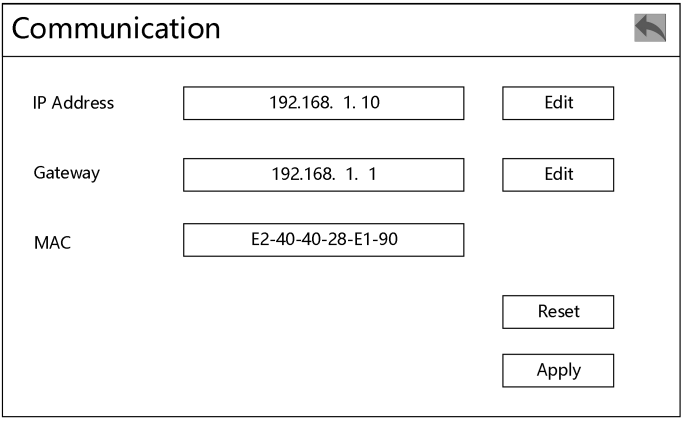
There is one main menu item. Select the four menu titles listed above by touch or knob. After selection, press the "OK" key to enter the selected item, and press the "⮌" key to return to the previous level menu.

Status Information:



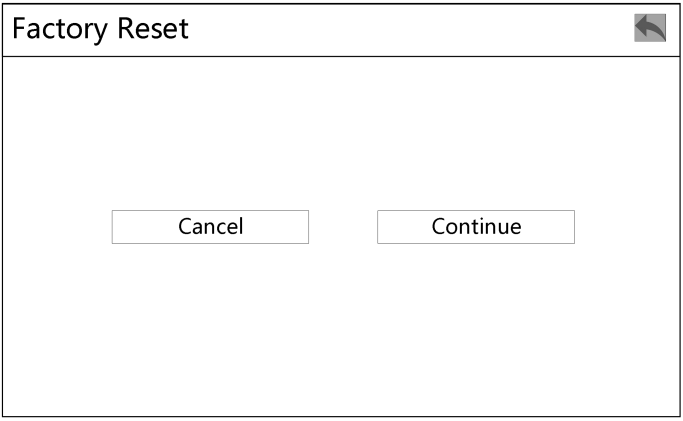
Status Information	Display the card insertion status of each input slot and the program of input/output and control board cards.

Communication Settings:



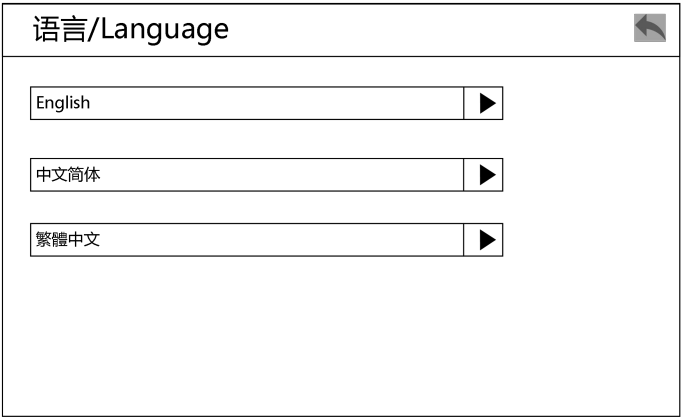
Communication Settings	IP address	The default IP address of the machine is 192.168.1.10, which can be customized according to user requirements.
	Gateway	The default machine gateway is 192.168.1.1, which can be customized according to user requirements.
	MAC Address	MIG-V12 Pro video switch MAC address.
	Edit	To edit the IP address and gateway, you need to operate with a knob.
	Reset	Restore the network Settings to their default state.
	Apply	Apply the current user-defined communication Settings parameter modification.

Factory Reset:



Factory Reset	Restore the machine to its factory default settings.

LANGUAGE：



English	Set the display language of the menu system to English
Chinese Simplified	Set the display language of the menu system to Simplified Chinese
Traditional Chinese	Set the display language of the menu system to Traditional Chinese

Warranty Statement

Machine Warranty Period

- 24 months from the date of purchase invoice.
- If the user loses the purchase invoice, the warranty starts on the 60 days after the production date of the product.

Non-warranty

- Machine water immersion, collision, stains or surface scratches caused by other non-normal use.
- Disassembly and modification without our company′ s consent.
- Failure or damage caused by use in the working environment specified by the non-product (such as high or low temperature or unstable voltage, etc.).
- Failure or damage caused by force majeure (such as fire, earthquake, etc.) or natural disasters (such as lightning strike, etc.).
- The product is out of warranty.