MIG-V16 Pro

User manual V1.0

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

MAGNIMAGE

Document version: V1.0 Document release date: March 12,2025

Statement

Revision History

Version	Revise Date	Revised Content
V1.0	2025-3-12	First release

catalogue

Brief Introduction

Thank you for purchasing our company's MIG-V16 Pro Video Switcher. We hope you will fully enjoy the superior performance of this product. The design of this video switcher complies with international and industry standards;But if with improper operation, there will be a personal injury and property damage.In order to avoid the dangerous, please obey the relevant instructions when you install and operate the product.

Brand Royalty

- 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 (high-definition multimedia digital 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

Any acts such as change, decompile, disassemble, decrypt or reverse engineer the software installed in the product are illegal.

Product Features

- 16×4K main output, 4×4K AUX output
- 1 Multi-window preview is supported, and the preview interface can be customized.
- 1 IP monitor output
- 1 HDMI output for real-time console monitor or AUX4 output
- 24 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 48
- Supports 8 pixel-to-piexl background
- Supports HDCP1.4&2.2
- Supports 4 sets of output custom resolution, one group per output card
- Supports input signal EDID management
- Supports image crop, zoom function of layers
- Supports color key, mirror, border, feathering, shadow and other layer effects
- Supports brightness, contrast and color temperature adjustment of the layer
- Supports external synchronization and multi machine cascading splicing
- Supports dual power redundant backup
- Supports AUX output of PGM or PVW images
- Supports the use of MIG-H9 and MIG-H9mini to control MIG-V16Pro standby and start
- Can be used in combination with MIG-H9, MIG-H9mini video console or PC upper computer 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 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, 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-V16 Pro 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
- This product is an electronic product. Please keep away from fire, water 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-V16 Pro is the latest Magnimage high-performance 4K video switcher. 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 with a high-performance scaling engine that supports seamless multi-screen output, delivering clear images with excellent color reproduction, distinct layers, smoothness, 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 input and output images.

MIG-V16 Pro video switch supports a variety of signal source input: 12G-SDI, DP1.2, HDMI2.0, support 4Kx2K/60Hz input, can realize EDID management for the input signal; it can be expanded to 6 input boards at most, and can realize synchronous locking of the input signal to ensure synchronous output of the signal;

When used with MIG-H9 and MIG-H9mini video control panels, a single MIG-H9 or MIG-H9mini panel can control multiple MIG-V16 Pro video switchers. This setup enables seamless transitions between multiple layers and scenes, as well as switching between different images and scenarios. It is widely applied in car shows, commercial events, conferences, product launches, stage performances, and more.

Technical Specifications

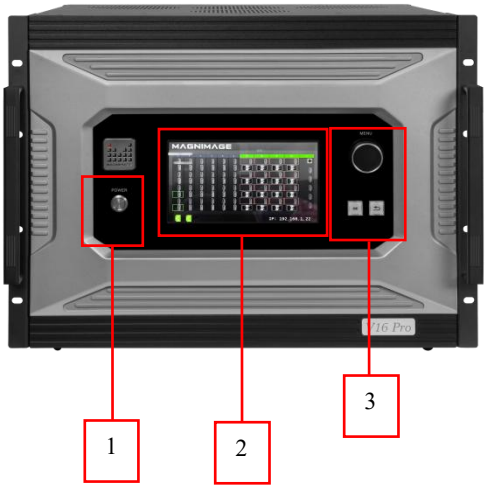
Input Information			
Input Board Type	**Port**	**Quantity**	**Resolution Specifications**
4DP/4HDMI	DP1.2/HDMI2.0	4/4	3840x2160/60Hz, 7680x1080/60Hz and custom
2DP/2HDMI+2SDI	DP1.2/HDMI2.0 +12G SDI	2/2+2	3840x2160/60Hz, 7680x1080/60Hz and custom / 4K SDI backward compatibility
4SDI	12G SDI	4	3840x2160/60Hz 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 custom; Single output limit: 7680 pixels at the widest and 3500 pixels at the highest
Auxiliary output board	AUX output	HDMI 2.0	4	VESA 3840 x 2160/60Hz, 3840 x 2160/50Hz and custom; single output limit: 7680 pixels at the widest and 2600 pixels at the highest
	HDMI/IP monitor output	HDMI/RJ45	1/1	1920×1080/60Hz
	Multiple pre-visualization outputs	HDMI1.3	1	1920×1080/60Hz

Machine Specifications	
Input Voltage	100～240V AC，50/60Hz
Power Consumption	600W
Dimension	482.6×459×354.9mm (L×W×H)
Net Weight	32.6KG
Operating Temperature	0-30℃

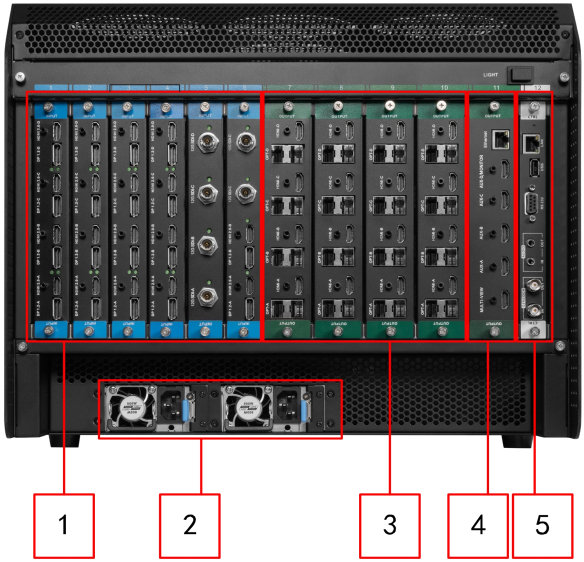
Introduction to Front and Rear Panels

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: Can browse or set menu content, including the confirmation key, return key and shortcut knob;

Back Panel



1. Input area, 4 input board 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

   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: Used for host upgrade

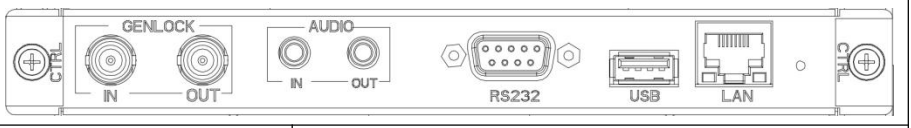
   LAN: Control port, used to connect with MIG-H9, MIG-H9mini console or PC terminal

MIG-V16 Pro Board Introduction

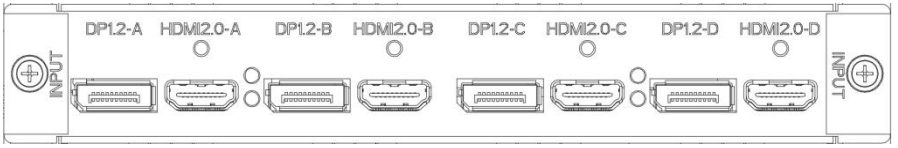
The MIG-V16 Pro video switcher has a rich selection of board resources. The control board is the standard resource, which is the core component of the whole device; the output board is the standard resource, and the input board is optional, which can be matched according to actual needs.

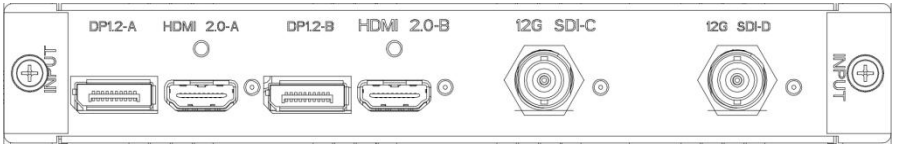
In addition, there are 4 output types of the output board: main output, AUX auxiliary output, multi-preview output, and console monitor output.

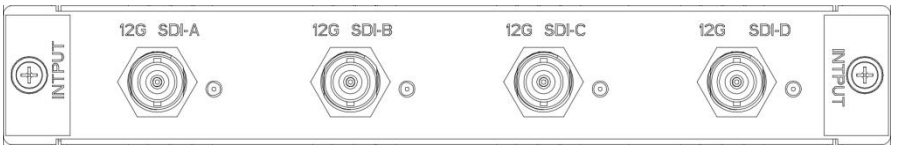
Control Board:

MIG-V16 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 video console or PC terminal

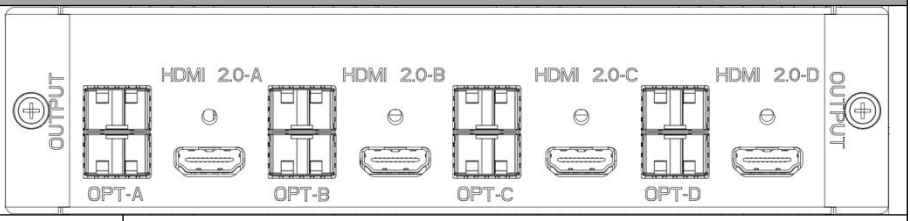
Input Board:

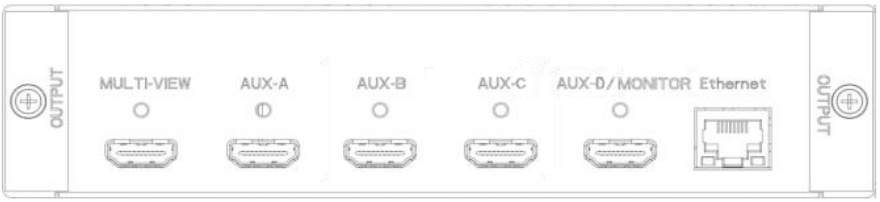
MIG-V16Pro-INHDMI DP (DP1.2x4, HDMI2.0x4 input card)	
	
Signal specifications	DP1.2, HDMI2.0 standard, supports 3840x2160@60Hz, 7680x1080@60Hz, and supports EDID management function
interface specification	FULL SIZE 20 needles and HDMI TYPE-A

MIG-V16Pro-INHDMI DP SDI (DP1.2x2, HDMI2.0x2, 12G-SDIx2 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-V16 Pro-IN SDI (12G-SDI x 4 input card)	
	
Signal specifications	12G SDI, supporting 3840x2160@60Hz downward compatibility;
interface specification	BNC / Mother port

Output Board:

MIG-V16Pro-OUTHDMIOPT	
	
Signal specifications	HDMI2.0 standard, supports 3840 x 2160@60Hz, supports custom output resolution
	10G OPT, supports 3840x2160@60Hz, supports custom output resolution

MIG-V16Pro-OUTAUX		
		
Signal specifications	MULT-VIEW	Multiple preview output ports, 1920x1080@60Hz
	AUX	Auxiliary output port, supports 3840 x 2160 @60Hz, supports custom output resolution
	MONITOR	Video switcher monitor port, 1920x1080@60Hz
	Ethernet	IP monitor

Use Menu

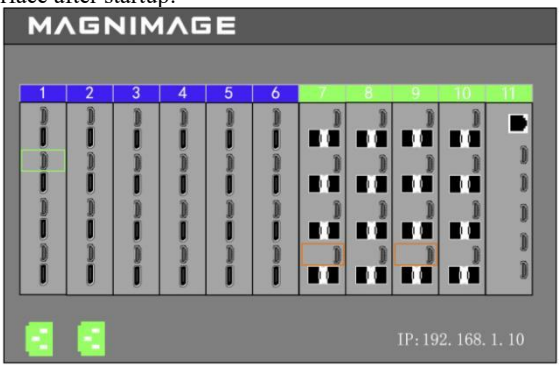
The menu system of the product allows for convenient and intuitive settings of the MIG-V16 Pro video switcher to meet user requirements. The MIG-V16 Pro video switcher features a high-brightness, high-contrast touchscreen LCD screen that displays the entire user menu. When no operation is performed or 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-V16 Pro video switcher menu system in detail.

Introduction to Default State

After opening the power supply of MIG-V16 Pro video switcher, during the system startup process, the LCD screen on the front panel will display the startup interface. After the startup is completed, the current status of the machine will be displayed on the screen, as shown in the following figure:

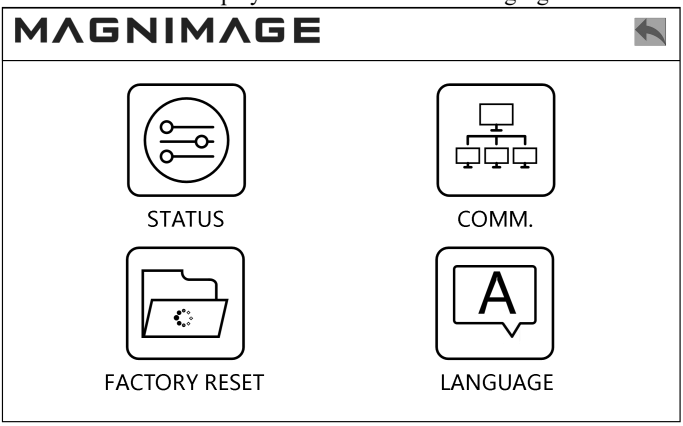
Default state interface after startup:



Input/Output Board	In the board section, blue 1-6 slots indicate input boards and green 7-11 slots indicate output boards
Input Signal Connection	If the input signal is connected and valid, the port is displayed in green box
Output Port Connection	If the output port signal line is connected, the port will be displayed in an orange box
Redundant Power Supply	If the power line is connected and powered normally, the power icon will be displayed in green; if the power line is not connected or powered, it will be displayed in red
IP Address	Displays the current IP address of MIG-V16 Pro video switcher

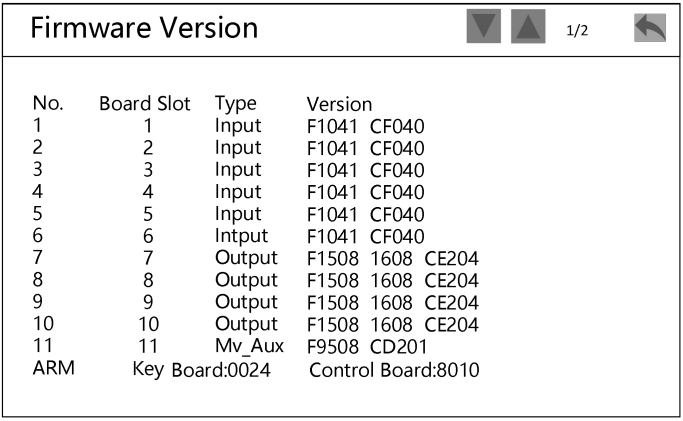
Main Menu

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 following figure:



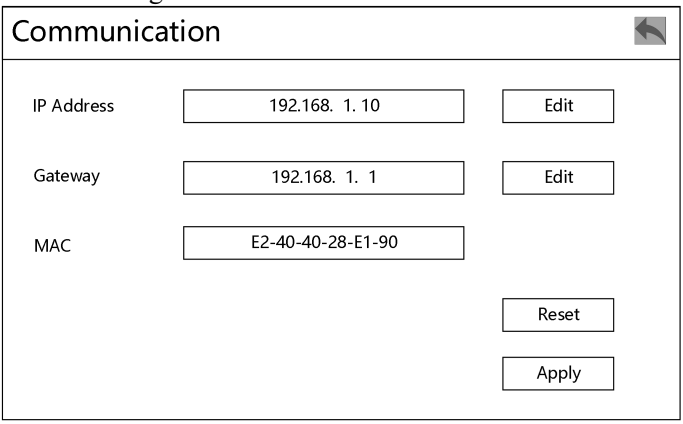
There is one main menu item. Select the four menu titles listed above by touch or knob. After selection, press "OK" to enter the selected item and press "⮌" to return to the previous level of menu.

Status Information:



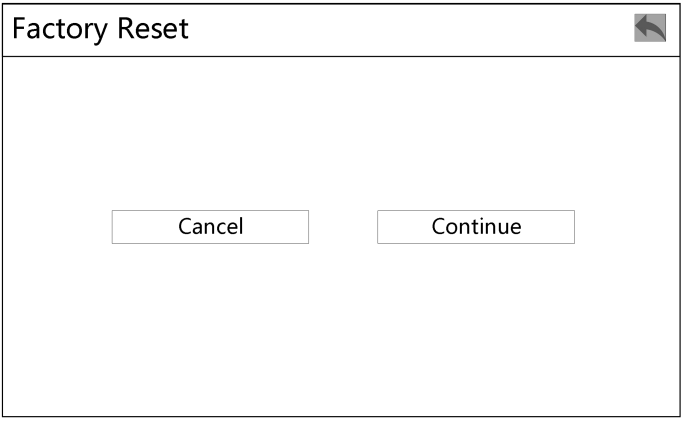
status information	Display the card insertion status of each input slot and the program of input/output and control board cards

Communication Settings:



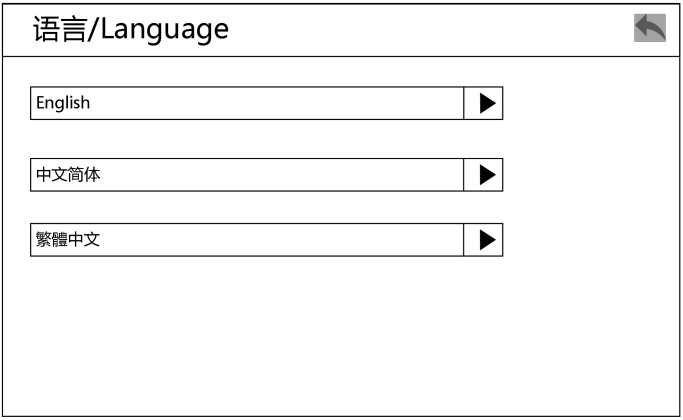
Communication Settings	IP Address	The default IP address of the machine is 192.168.1.10, which can be customized according to user requirements
	Gateway	The default machine gateway is 192.168.1.1, which can be customized according to user requirements
	MAC Address	MIG-V16 Pro video switcher MAC address
	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 60th day after the production date of the product.

Non-warranty

- Faults or damages caused by abnormal use reasons such as stains or surface scratches caused by machine immersion, collision, or use;;
- Disassembly and modification without the consent of our company;
- 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 has exceeded the warranty period.