MA2000-4K
Video splicing processor
Data Sheet

Shenzhen Micagent Technology Co., Ltd

Introduction

MA2000-4K series is a professional image splicing control device for LCD splicing display, using pure hardware FPGA arrays and DSP high-speed signal processing substrate computing exchange technology, FPGA image high-fidelity interpolation algorithms, does not require any operating system support, safe and stable. Support RS232 serial port, network, tablet PC, provide SDK docking center control and other control methods. Can meet the needs of a large number of pictures and video processing, widely used in: monitoring, command, scheduling systems, public security, fire, meteorology, railroads, aviation and other scenes.

Features

- Pure Hardware FPGA + DSP Architecture – Utilizes a high-speed FPGA array with intelligent multi-phase scaling algorithms for pixel-perfect, low-latency image processing and ultra-sharp visuals with no jagged edges.
- Modular System Design – Supports 3U, 6U, 12U, and 24U chassis with up to 72×72 4K input/output channels, using a card-based structure for easy expansion and maintenance.
- Instant Boot & High Stability – Power on and start within 5 seconds with no OS dependency, ensuring crash-free, black-screen-free operation.
- Hot-Swappable Modules – Input, output, and control cards can be replaced without powering off, ensuring uninterrupted operation.
- Flexible Video Processing – Supports multi-window, picture-in-picture, cross-screen roaming, scaling, and 4K layer composition per display.
- 8K/4K Ultra HD Support – Optional 8K@30Hz input (7680×2160) and full 4K@60Hz in/out; combine 4K displays for up to 16K immersive visuals with no frame loss or distortion.
- Comprehensive Signal Compatibility – VGA, DVI, HDMI, SDI, BNC, DP, CVBS, and IP camera inputs supported.
- Professional Audio Integration – Optional Dante dual-channel audio I/O with HDMI-embedded or 3.5mm analog stereo output for high-fidelity sound.
- IP Camera Decoding & Integration – Supports ONVIF/RTSP/GB28181 protocols; compatible with major brands (Hikvision, Dahua, Uniview, Huawei, etc.); real-time decoding up to 4K.
- Massive IP Decoding Capability – Single IP card decodes up to 72 D1 streams or multiple 4K/1080p channels; scalable for large surveillance deployments.
- Wireless Casting (Optional) – Built-in wireless casting module for PC, smartphone, and tablet; supports split-screen casting and cross-device display.
- Seamless Switching – Millisecond-level transition between sources for smooth, uninterrupted visuals.
- Visual Control Interface – Tablet and PC clients provide real-time preview and feedback.

- Custom Output Mapping – Output ports can be freely assigned to displays, supporting flexible wiring layouts.
- Mobile & Voice Control – Manage systems via mobile app with built-in voice command support.
- Advanced KVM Switching – Multi-channel keyboard/mouse seamless switching and sliding control (optional multi-KVM expansion).
- Dynamic LED Subtitles – Editable vector-based on-screen text with customizable font, color, and animation.
- Scene Presets – Save and recall up to 256 preset layouts, with auto-rotation and scheduling.
- Multi-User Control – C/S control architecture over TCP/IP and RS232, supporting simultaneous multi-user management.
- Flexible Integration – Compatible with third-party control systems via SDK, RS232, Ethernet, or tablet interfaces.
-

Specification

Chassis (Standard)				
Chassis size	3U	6U	12U	24U
Number of Inputs	8	18	36	72
Number of Outputs	10	18	36	72
Dimensions (mm)	480*330*160	480*350*265	485*445*530	485*445*935
Supply Voltage	AC110-400V			
Supply Frequency	50/60Hz			
Operating temperature	-15-60℃			
Main control board	1*RS-232 serial port, 1*10/100 Mbps self-adaptive Ethernet port			
Input signal type	VGA/DVI/HDMI/SDI/BNC/ (DP/miniDP/Ypbpr/CVBS/supports transfer)			
Input maximum resolution	3840X2160@30HZ, 1920X1080P@60HZ, support EDID			
Output signal type	HDMI2.0			
Output maximum resolution	3840X2160@30HZ, 1920X1080P@60HZ			
Display mode	Arbitrary splicing/windowing/picture-in-picture/roaming/overlay/zoom/ cross-screen, etc., supports 2 layer overlay.			
Virtual LED rolling subtitles	Ultra-high-definition point-to-point vector subtitles support dynamic subtitles and static subtitles, and parameters such as display content, fonts, and colors can be edited at will.			
Redundant power supply (optional)	Supports optional redundant power supply chassis			

Service Board (Optional)			
Name	Signal Type	Ports Qty	Description
HDMI input board	HDMI1.3	2	1920x1080/60hz & EDID Management
SDI input board	3G SDI	4	1080i/60hz、1080P/60hz、720P/60hz
DVI input board	DVI-D	4	1920x1080/60hz & EDID Management
DP(adapter) input board	DPI. 1	2	3840x2160/30hz & EDID Management
4K30 HDMI input board	HDMI2.0	2	3840x2160/30hz & EDID Management
4K60 HDMI input board	HDMI2.0	1	3840x2160/60hz & EDID Management
8K30 HDMI input board	HDMI2.0	1	7680x2160/30hz & EDID Management
VGA input board	RGBHV	4	1080P/60hz
IP Decoder board	H.264/H.265	4	4K、1080P、720P、D1
BNC input board	Analogue coaxial	4	D1
Wireless screen casting board	RJ45	4	Simultaneously supports 4 cell phones and computer mixed casting
Information Release board	RJ45	4-9	Supports 4-9 applications to capture and push PPT, documents, web browsers, software, local videos and images.
HDMI output board	HDMI1.0	2/4	1920x1080/60Hz. 1440x1440/60Hz &Customized
4K HDMI output board	HDMI2.0	2	3840x2160/30Hz. 1920X10B0/60hz. 2560X816/60Hz. 1440X1440/60Hz &Customized
DVI output board	DVI-D	2/4	1920X1080/60Hz.1440X1440/60Hz & Customized
Preview board	H.265	2	Signal preview display back

System Diagram