

SPI Controller

Model No.: MR-228AH

Feature

- MR-228AH Support TTL Serial Zero Code Protocol a and Multi-Chip Selection;
- MR-228AH Outputs TTL Level Signals (4 Channels) and Differential Signals (2 Channel);
- MR-228AH Support infinite Cascad Transmission Without any Cascade Number Limit;
- Support 32~65536 Grayscale 16Bit, Support 262144 Grayscale, Restore image Details;
- Independent Brightness Control of 3 Primary Colors, Easy to Adjust White Balance;
- Support R, RB, RGB, RGBW, RGBWY, and Multi-Color Mixing Control;
- Accurate Gamma Correction Algorithm, in Line With Human Visual Sense;
- Support 120Hz Frame Rate to Ensure High-definition Display and 3D Requirements;
- Using Ethernet Interface and UDP Protocol, The Distance is 100 Meters;
- The LCD Display Module Displays the Controller Parameters and Status in Time;
- Support The Device ID Number Data Flow Sequence and Fixed Arrangement;
- Two RJ45 Ports, Support Mixed Cascading; Automatic Software Display Status;
- A Variety of Chip Control is Integrated, and we Change the Control Chip Type, Clock Frequency, Duty Cycle, Gray Scale Level and Other Parameters Through Software Setting;
- Support IP Grouping Function, use Switch Parallel Scheme;
- 8-Port Output, Unlimited Number of Single-Port Load Points, Self-test;
- Support Dual backup, a Controller is Broken or a Disconnected Display is Not Affected;
- Support Device Port Anti-interference and Leakage Design;
- Support Overcurrent and Overvoltage Protection, Can run for a Long Time;
- Equipment Network Port, Port Output, Surge Protection: 1.5KV;
- Support Severe Working Environment -40°C~80°C, Normal Operation Without Failure;
- Network Adaptive or Mandatory 100M Can be Set to Support More Loading;
- Support Online one-key Upgrade of device Firmware.



Design Concept

1. 1000Mbps/ 100Mbps Optional, Adapt to Different Project Schemes;
2. Two-way Redundancy of The System Signal, Doubled Stability;
3. 4 Color Algorithm: Energy Saving and Environmental Protection, Pure Color;
4. Integrated Control, Online Priority, Automatic Switching Offline Effect Without Signal;
5. Self-developed Playback and Wiring Software, More Adaptable;
6. Use Complex Applications Such as Various Lighting Screens;
7. Use The Switch Parallel Scheme and Improve The Stability of The System;
8. Add Fiber Optic Modules, The System Can Transmit Fiber Optic Signals;
9. Add a Wireless Bridge for Wireless Signal Transmission;
10. With Internet Control Software, Support Internet Remote Control;
11. The System Supports Automatic, Timed and Holiday Preset Playing;
12. Support Mainstream 32Bit and 64Bit Systems: Win 7, Win 8 Win 10 and so on;

Extensibility

1. Can Play Video and Picture File Content in Various Formats;
2. All Current Windows Systems and Multiple Languages Can be Installed;
3. Leave The Interface for Compatibility With International Common Protocols
4. Expandable and Compatible With Third-Party Software and Devices;
5. Market, Support Serial LED Driver Chips, Such as MBI, MY, UCS, MR, TM, SM, GS, etc.

Controller Appearance

MR-228AH Front view



MR-228AH Rear view:



① Power Switch ② LCD Display ③ Power Lights ④ Signal Lights ⑤⑥ Self-adapting Network Interface ⑦ DMX OutPut Port ⑧ Power Interface

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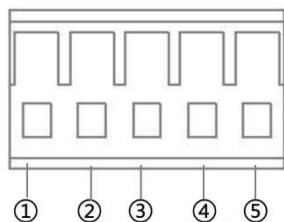
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Output port definition

MR-228AH controller uses 8 5pin terminal interfaces to output signals. 5Pin terminals are sorted from left to right ,as below::

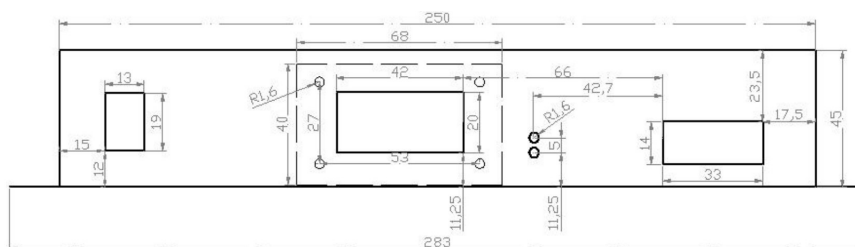


	①	②	③	④	⑤
TTL Signal	Ground	DATA	Latch	Clock	Enable
	GND	DATA	LE	CLK	OE
Differential Signal	Ground	DATA	Latch	Clock	Enable
	GND	DATA+	DATA-	CLK+	CLK-

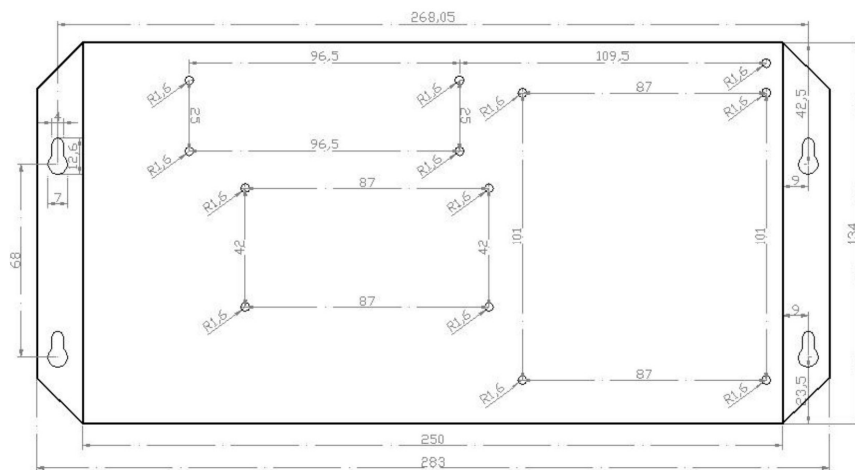
Note: MR-228AH Supports TTL Signal and Differential Output.

Mechanical Dimensions

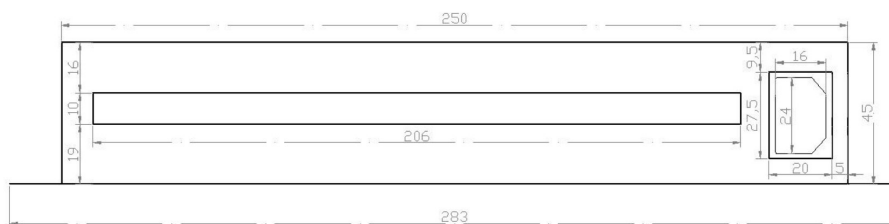
MR-228AH Front view



MR-228AH Vertical view



MR-228AH Rear view



Remark: Above Three Views The Size Unit is mm.

Basic Parameter

Product Name	Standard TTL sub-controller	Product Model	MR-228AH
Rated Voltage	AC 100V ~ 240V±15%Vac50/60Hz	Rated Power	≤15W
Protocol	RJ45X2CH, Standard UDP/TCP protocol	Network Rate	100MB/1000MB self-adaption
Output Port	8-Port output (standard TTL output)	Relative Humidity	≤95% (Not condensation)
Temperature	-40°C ~ 80°C	Dimension	283mm*134mm*45mm
Hole Spacing	268mm; 68 mm	Protection Class	IP20
Installation Method	Installation method of fixed hole position (as above)	Weight	1.48kg
Shell Material	Iron quality (powder spraying process)	Accessories	AC power ×1/ warranty card×1/Bubble cotton paper box ×1

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Install and Use

Online mode (Connected With Computer)

MR-228AH Controller Connect With The Computer Ethernet Port, as Shown Below:



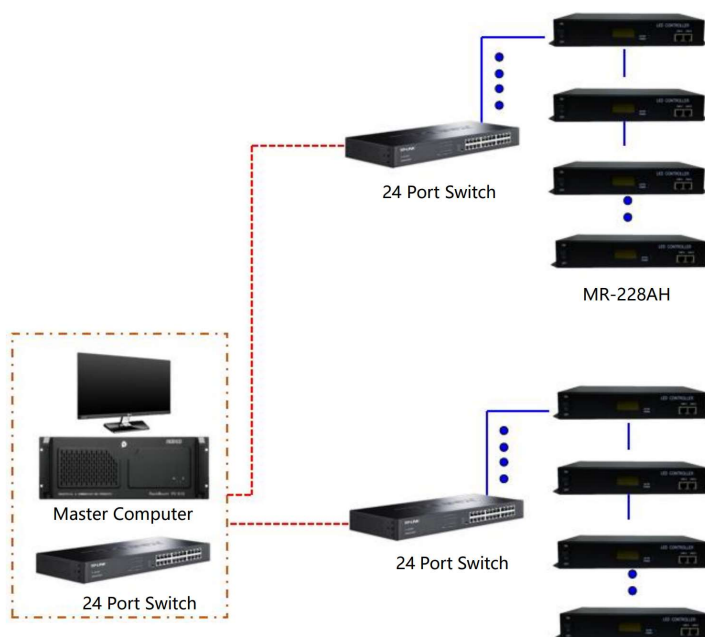
Offline Mode

MR-228AH Connect With the Offline Master Controller, as Shown Below:



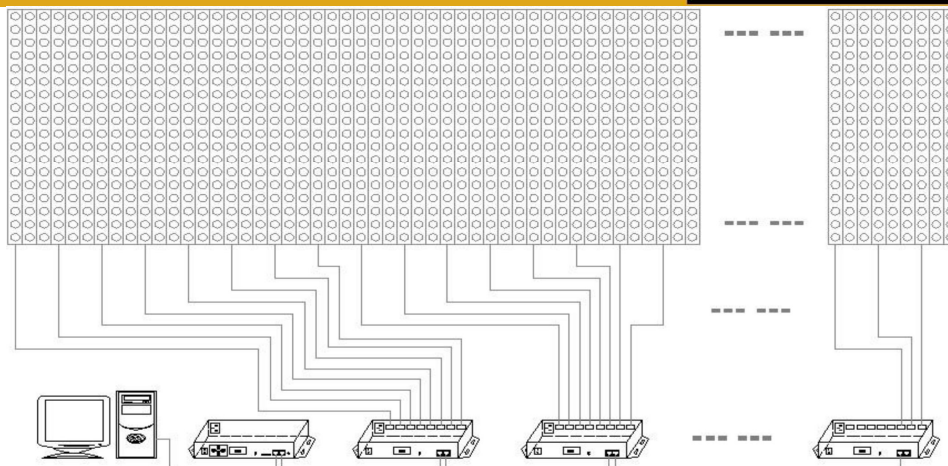
Integrated synchronous and Asynchronous Mode

Connect With the Computer and The Main Control (Online Priority. No Signal Switch Offline), as Shown in The Following Figure:



Engineering Case Description and Sketch Map

For Example in DMX512 Point Light Source Composed of 96 Points × 18 Dots Matrix Screen, Use MR-228AH Controller, The Wiring is Arranged in The Vertical S Type, Controller for Each OutPut Port to Control 3 lines Point Light Source, Totally Need of 32 DMX512 interfaces. The Following Diagram for Example: of 32 DMX512 interfaces. The Following Diagram for Example:



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Cat.5e Twisted Pair Application Notes

568B: orange-white/orange/green-white/ blue/blue-white/green/brown-white/brown

568A: green-white/green/orange-white/blue/blue-white/orange/brown-white/brown

Equipment and Equipment Cable, [Cross]: One end is 568B, and One end is 568A.

Device and Switch Cable, [Crossover]: One end is 568B, and One end is 568A.

Equipment and Computer Cable, [Straight]: One end is 568B, and One end is 568A.

Note: Follow The Requirements, Do Not Define The Network Cable Sequence by Yourself.

**Wire and connecting method from lights to controller**

1. If the distance between controller output port to the lamp is too far , recommended to use super-five types of shielding network cable connection, the best method is : [Single line chip]
 Orange wire in the network cable : connect to DATA(data wire)
 Note: All remaining unused wires must be connected to GND (ground) [Double-line chip]
 Orange wire in the network cable : connect to DATA(data line)
 Green wire in the network cable : connect to CLK (clock line)
 Note: All remaining unused wires must be connected to GND (ground)
 [Differential output]
 Orange wire in the network cable : connect to DATA+ (Data line positive)
 Orange-white wire in the network cable : connect to DATA- (Negative data line)
 Note: All remaining unused wires must be connected to GND (ground)
2. Wires wrapped together to connect the signals at the same time , such as orange and orange-white connect to the data at the same time.

Controller Connect to Ground Application Notes

MR-228AH controller using metal case, rated supply voltage is AC100V-240V. Therefore, it is necessary to ensure the effective grounding of the controller equipment and the effective grounding of the metal outer box.

And the output port of the controller is exposed to the metal contact surface, therefore, according to the requirements of safety regulations, to ensure safe use of the operator, signal output port GND signal must be effectively grounded.

