## Functional overview


## I. PERFORMANCE FEATURES

1. Load lamp: 8 output ports, up to 8192 pixels, each port can control up to 1024 points, support TTL lamp, breakpoint transmission, etc., RGB\RGBW\RGBCW multi-color channel lamp, 8 independent ports can support different channel sequence lamp at the same time.

2. Working mode: computer online, SD card offline, cascaded synchronous control, Madrix (selling jazz).

3. Online dot drawing and 3D layout, wireless network transmission through wireless router, and star structure wiring of switch.

4. Support online fixed parameters and firmware upgrade.

5. Long press OK button to fix the parameters (black dot on the display).

## II. DESIGNERIES

1. Four-color independent algorithm: energy saving and environmental protection, pure color;

2. Asynchronous integrated control: online priority, automatic switching off-line

effect without online signal, and video source backup;

3. Used for all kinds of domestic and foreign irregular screens, multi-screen, building screen, pixel light screen and other complex applications;

4. With Internet control software, it supports Internet remote control;

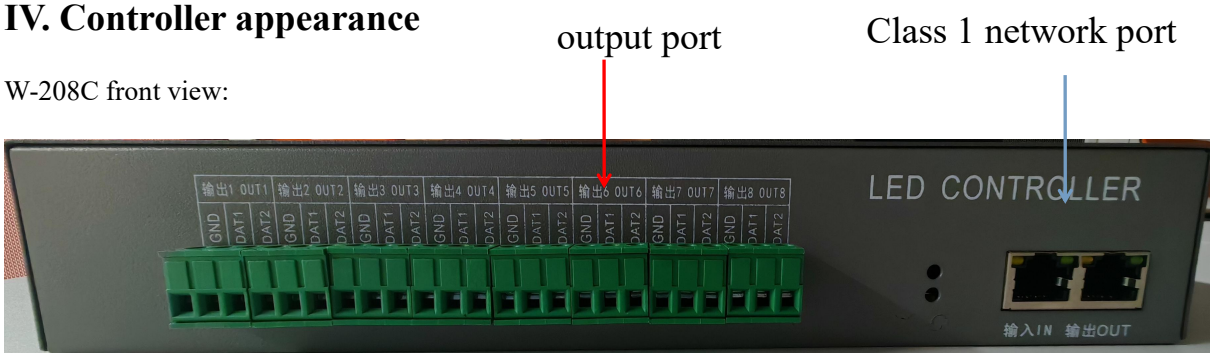
5. Support Windows mainstream 32-bit, 64-bit operating system: Windows 2000, Windows 2003, Windows XP, Windows 7, Windows 8, etc.

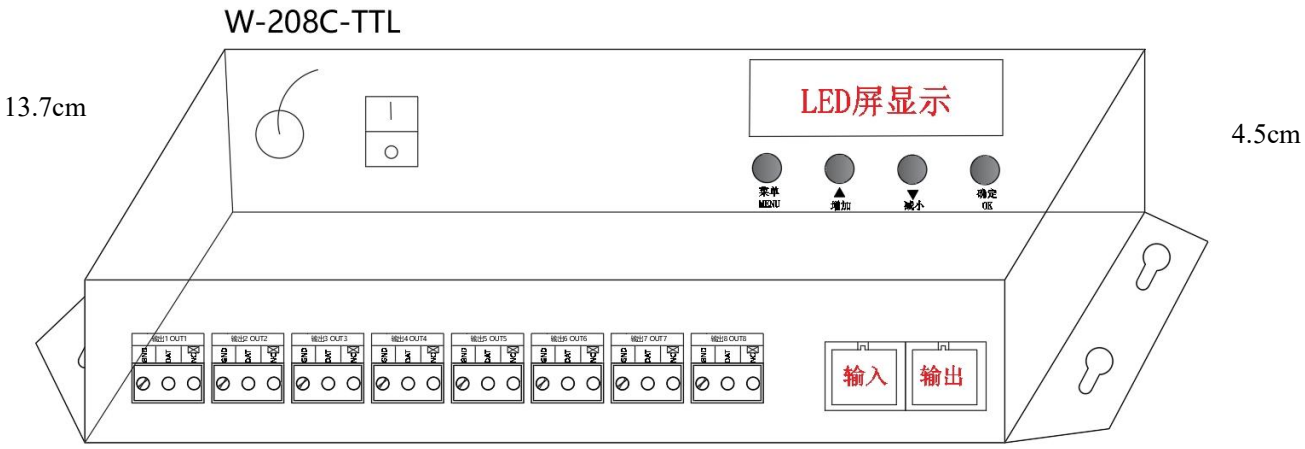
## III. EXPANSIONALITY

1. Can play various formats of video and picture files both synchronous and asynchronous;
2. The playback software has sufficient interfaces to be compatible with other international protocols and supports customer personalized design needs;

## IV. Controller appearance

W-208C front view:



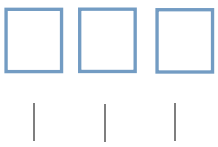



## V. Parameter characteristics:

| | |
|---|---|
| Port load | TTL signal: 1024*8 |
| working voltage ： | AC110V~220V |
| working temperature ： | -20℃--75℃ |
| weight ： | Weight: 1.25kg Net weight: 1.15kg Weight: 1.25kg Net weight: 1.15kg |
| size ： | Outer box: 27.3×17.3×5.4cm This machine: 25×15×4.5cm |

## VI. Output port definition

The W-208C controller uses 83pin terminal interfaces to output signals. The 3Pin terminals are arranged from left to right as follows:



| | ① | ② | ③ |
|---|---|---|---|
| TTL signal | the earth | Data 1 | Data 2 |

① ② ③

Note: Signal end ① is GND, ② is data 1, ③ is data 2, and ②③ is parallel signal.

## 7、Basic operation process: Configure the main control W-100C to use

1、ID number selection:

Step 1: Press the "MENU" button to "d001" and the number flashes

Step 2: Press the "up and down" button to select the ID number

Step 3: Press the "Cycle OK" button to confirm

2、 chip select ：

Step 1: Press the MENU button to "512H" and the number flashes

Step 2: Press the "up and down" button to select the chip model

Step 3: Press the "Cycle OK" button to confirm

Chip list:

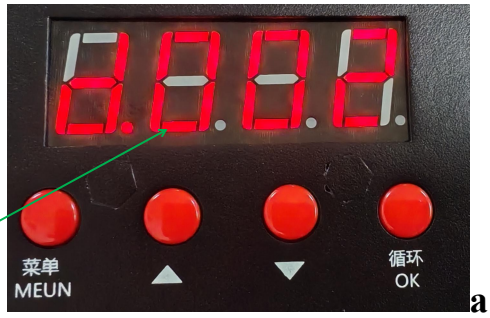
| | | | | |
|---|---|---|---|---|
| UCS1903 | TM1934 | 512 800K | 512 H (500K) | 512 L (250K) |
| TM1814 | UCS2904 | TM1804 | TM1914 | GS8206 |
| P9883 | SM16703P | SK6812 | WS2811 | WS2812B |
| TM1923 | UCS8903 | UCS8904 | HW1603 | UCS5603 |
| UCS8603 | | | | |

3、Fixed sub-control parameters:(it is particularly important to note that there is a lock parameter function on the controller. Long press the "cycle OK" key, and the left digit of the digital screen will light up to represent the lock)

**Method 1: Automatic ID Recognition. The system automatically unlocks all**

**devices with ID W-208C, connects to the main controller W-100C, and assigns sequential ID numbers to sub-controllers while automatically identifying the main controller's chip model. Additionally, the main controller allows independent configuration of sub-controller parameters for direct parameter writing. This solution is applicable to most scenarios.**

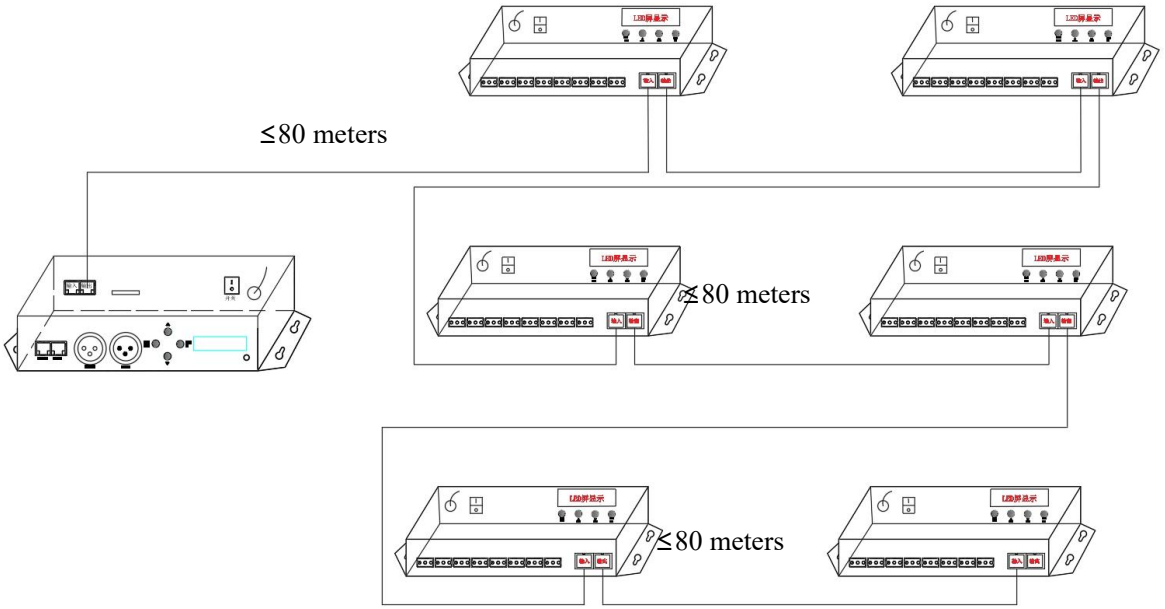
**Method 2: Individual Fixed Control Unit Configuration 1. Disconnect the main control network cable. 2. Locate and select the target control unit with assigned ID and chip model. 3. Hold down the "Cycle OK" button to lock parameters. 4. After completing all parameter configurations, connect to the W-100C output terminal of the main controller. 5. The chip model on the main controller no longer needs to match the control unit (This method is recommended when control units cannot establish proper connections or require customized parameter settings).**

**(This point represents** 

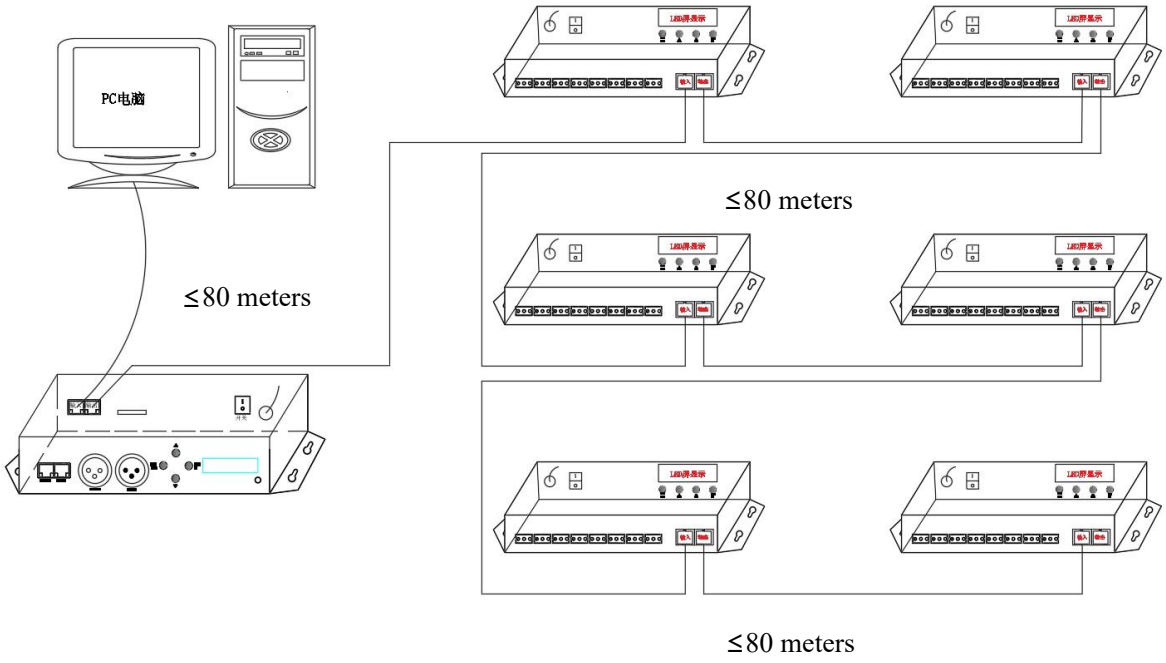
**a lock)**

## 8, controller size diagram

8.1. Main sub-control connection diagram:

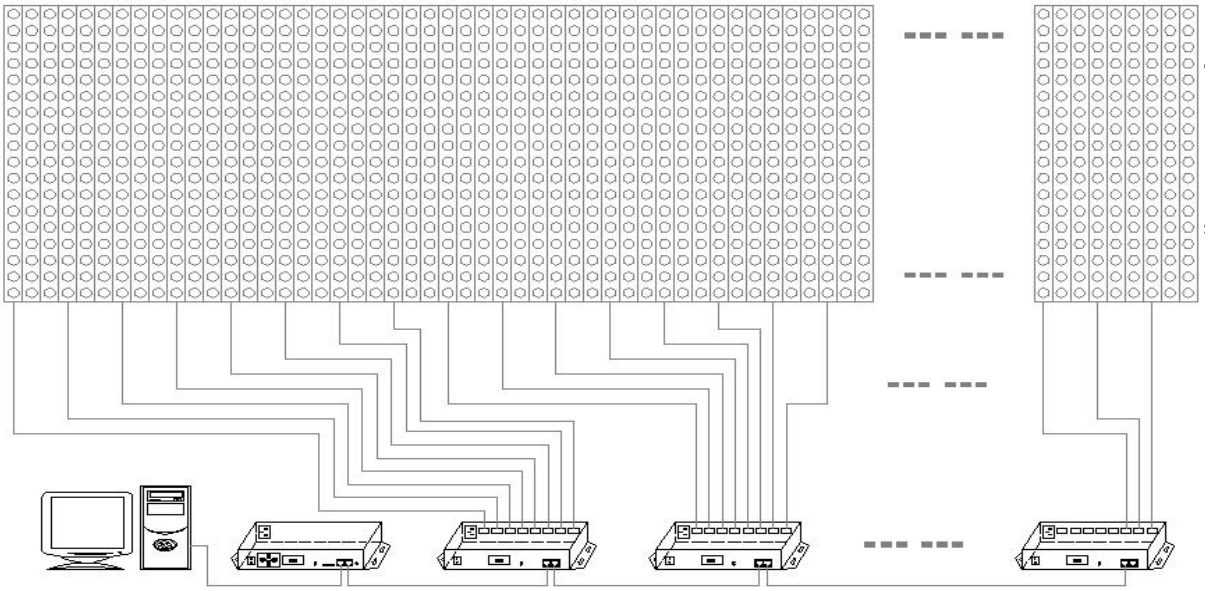



8.2. Connect with the computer and offline master controller (online signal is preferred. When there is no online signal, offline signal is automatically switched), as shown in the figure below:

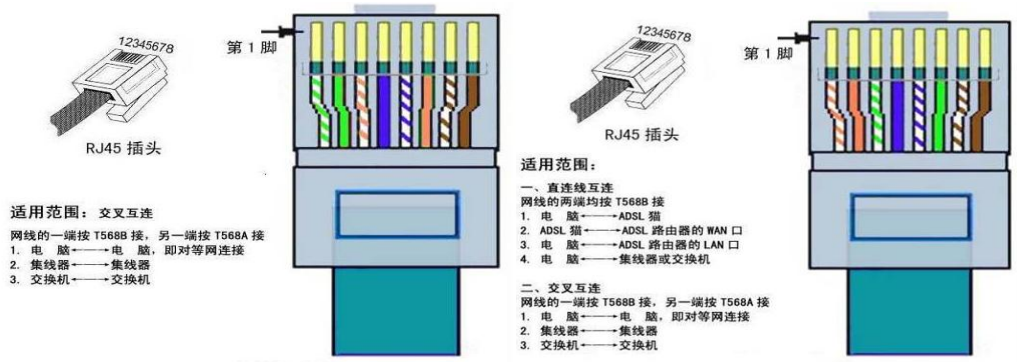


## 8、**Project case description and schematic diagram:**

Taking the 96-point × 18-point dot matrix screen composed of DMX512 point



## X. Network cable production process




Cable making: In practice, there are two methods of making (cross interconnection and straight line interconnection)

We use the "straight line interconnect" 568B, which means we use the same wire order at both ends. The specific wire order is as follows:

1、Orange and white 2, Orange 3, Green and white 4 Blue 5, Blue and white 6, Green 7, Brown and white 8, Brown

**11. Control distance of conventional signals reference table:(only for reference, everything is based on the actual)**

| detailed information | TTL | 4 lines 512 | 5 lines 512 |
|---|---|---|---|
| Distance from controller port to light | 15 meters | 30 metres | 80 meters |
| The distance between the controller and the last light | | 80 meters | 120 metres |
| Distance between lights | 3 metres | 30 metres | 30 metres |
| Distance between controller and amplifier | 15 meters | 35 metres | 80 meters |
| Distance between amplifier and lamp | --- | --- | --- |
| Distance between partitions and controls | 80 meters | | |
| Distance between master and slave | 80 meters | | |

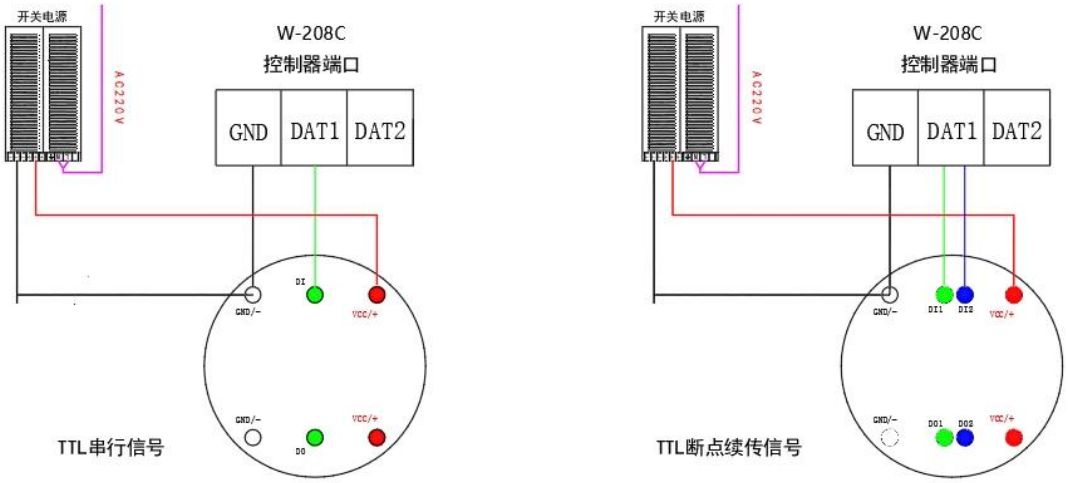
Note: If the distance between the computer and the controller, between the master and the sub-controller, or between the sub-controller and the sub-controller exceeds the specified distance, the signal will be interfered with and cannot be transmitted normally.

Rx ：

1、The distance of the signal amplifier can be extended to 300 meters

2、Using optical fiber instead of network cable can extend the distance to 5 kilometers

## XII. Wiring diagram




## XIII. FAQ:

1. No effect after inserting the SD card?

Answer: a. Check the SD card format b. Check the file format c. Check the SD direction

2、The controller shows normal, and the lamp does not run normally?

Answer: a. Whether the chip selection is normal b. Whether the program is normal

3、No signal when you plug in the wire cap?

Answer: Check whether the wire sequence is normal and whether the network port is normal

4、The signal is unstable and the lamp flickers?

Answer: a. Check whether the power supply has filtering function b. Check whether there is poor contact in the line c. Check whether the controller port is normal d. Check whether the signal line is shielded e. Check whether there are high-power machines and magnetic fields near the controller