

# ART-NET lighting control system



GC-ARTNET is a light controller based on ART-NET protocol. Support international standard ART-NET 3, and backward compatible with ART-NET, ART-NET 2. The controller provides standard 8 sets of DMX512 output and 2 RJ45 network interfaces. GC-ARTNET converts network packets into standard DMX512 signals and various SPI signals.

GC-ARTNET adopts FPGA as the core processor and is equipped with gigabit network transmission interface. The strong data computing ability of FPGA combined with the transmission rate of gigabit network, Receive DMX512 packets from the network, And extend the decoding output, Can support LED lighting market widely used single - wire, dual - wire drive IC, Such as: TM1812, UCS2903, TLS3001 and so on. An output port can also be extended to support 1020 points. The output electrical standard includes RS485 and TTL.

GC-Artnet provides a one-button parameter setting tool, Can quickly set the IP address, Port address and other system parameters. The system can support various ART-NET lighting application software at home and abroad, with the use of software, widely used in stage, bar, KTV, TV recording hall, all kinds of theme exhibition hall and all kinds of landscape lighting projects.

## **The performance characteristics**

- FPGA core processor, gigabit network transmission technology
- Based on the international standard ART-NET 3 protocol, it can be backward compatible with ART-NET and ART-NET 2 protocols
- ART-NET network terminal network cable cascading, can use HUB branch parallel, can also be a single network series
- Support optical fiber, switch and other standard network equipment, to meet the needs of various applications
- Support ART-NET unicast and ART-NET broadcast mode
- Data optimization and reorganization, provide 8 channels of data output, can support DMX512, TTL, SPI and other lighting industry in all kinds of lighting signal types
- Provide special parameter setting tools, one key set IP address, Port address and other system parameters
- Eight outputs, each can output 6 DMX fields, namely 1020 pixel points, support single-wire, dual-wire driver IC, such as: WS2811, UCS2903, TM1812, TM1814, DMX512
- Up to 16bit gray level dimming can be supported
- With the use of software, various kinds of landscape lighting, 3D meteor, music synchronization and other effects can be achieved

## Specification

Power input: AC 90~240V

Power consumption: 5 W

Input signal: Artnet network package

Network interface: 1Gbps gigabit network (568B)

Output signal: DMX512, TTL, SPI

Output interface: 8 sets of 3 PIN terminals (①GND, ②DA/D+, ③D-)

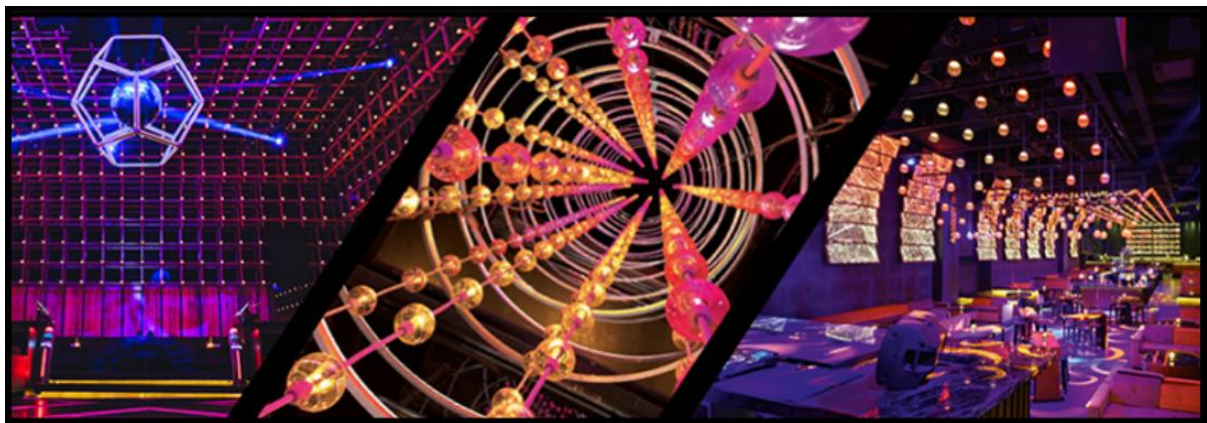
Output port: 8 port

Output data: 8 x 1020 pixels

Operating temperature: -20℃-65℃

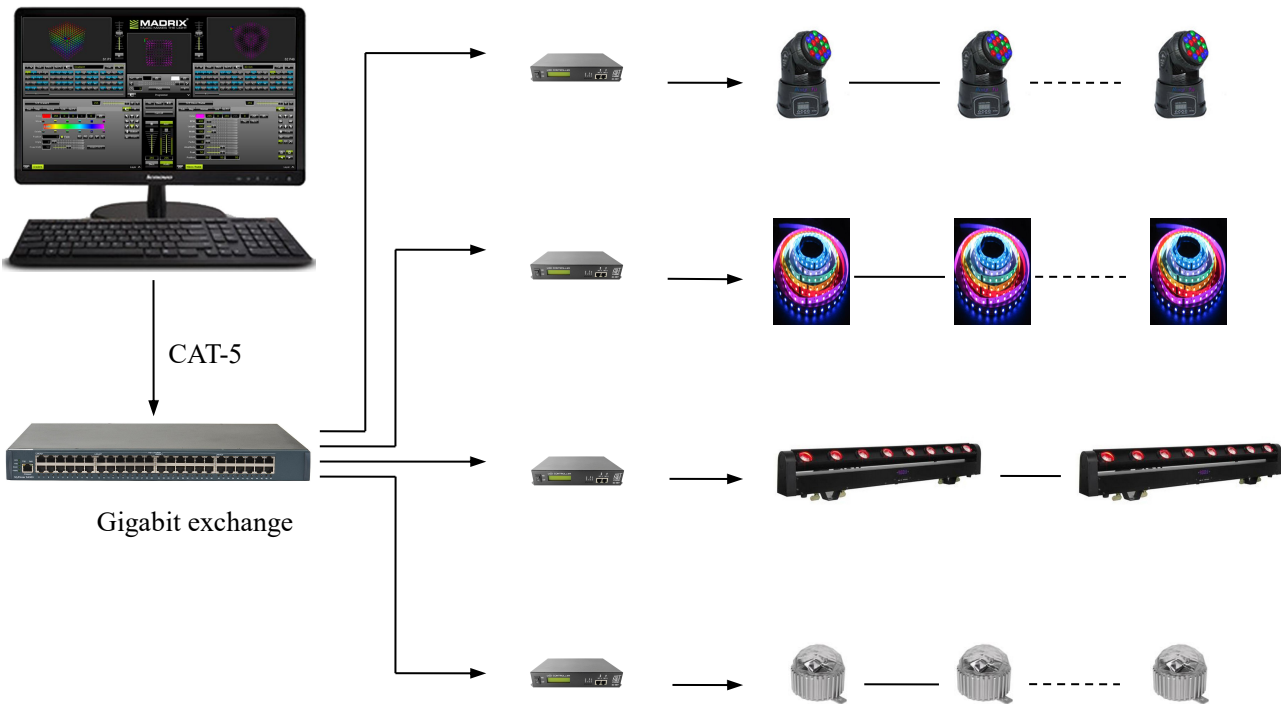
Product size: L234×W165×H42mm

Weight (gross weight) : 1.4kg

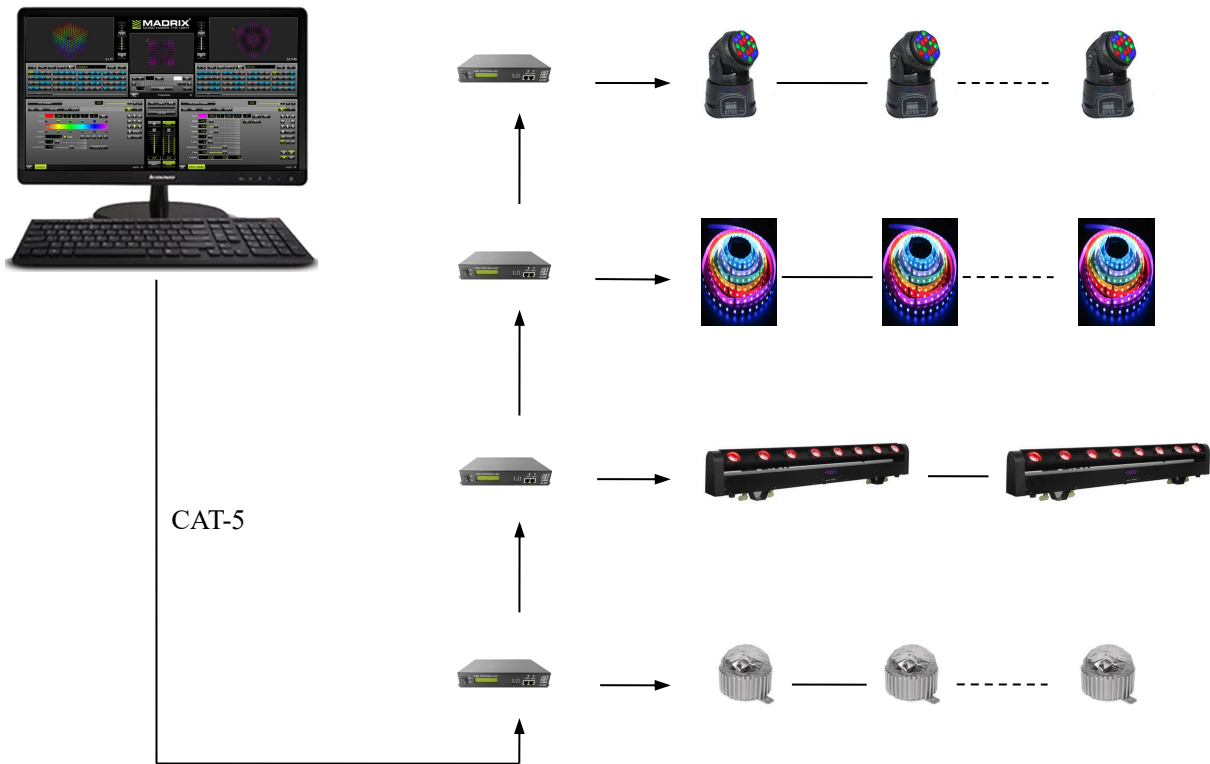


System connection diagram

Branch connection of switch

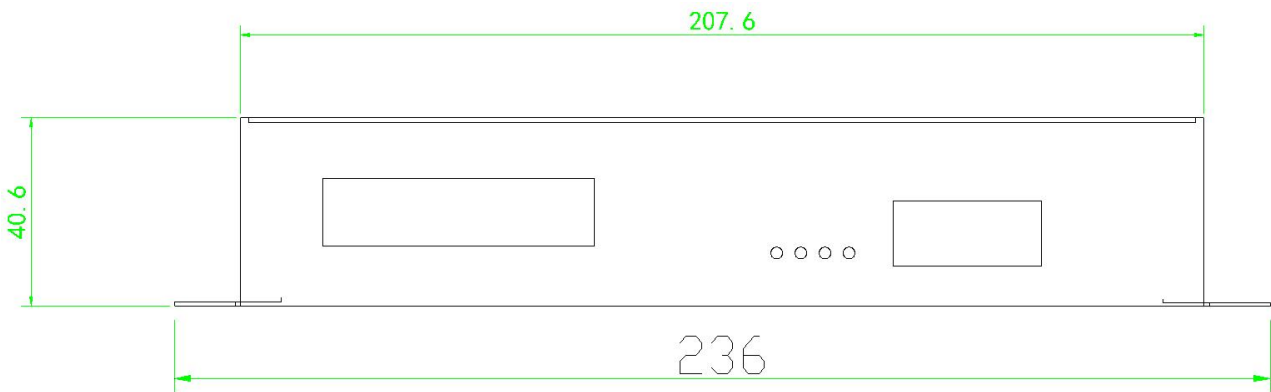


Single way serial cascade

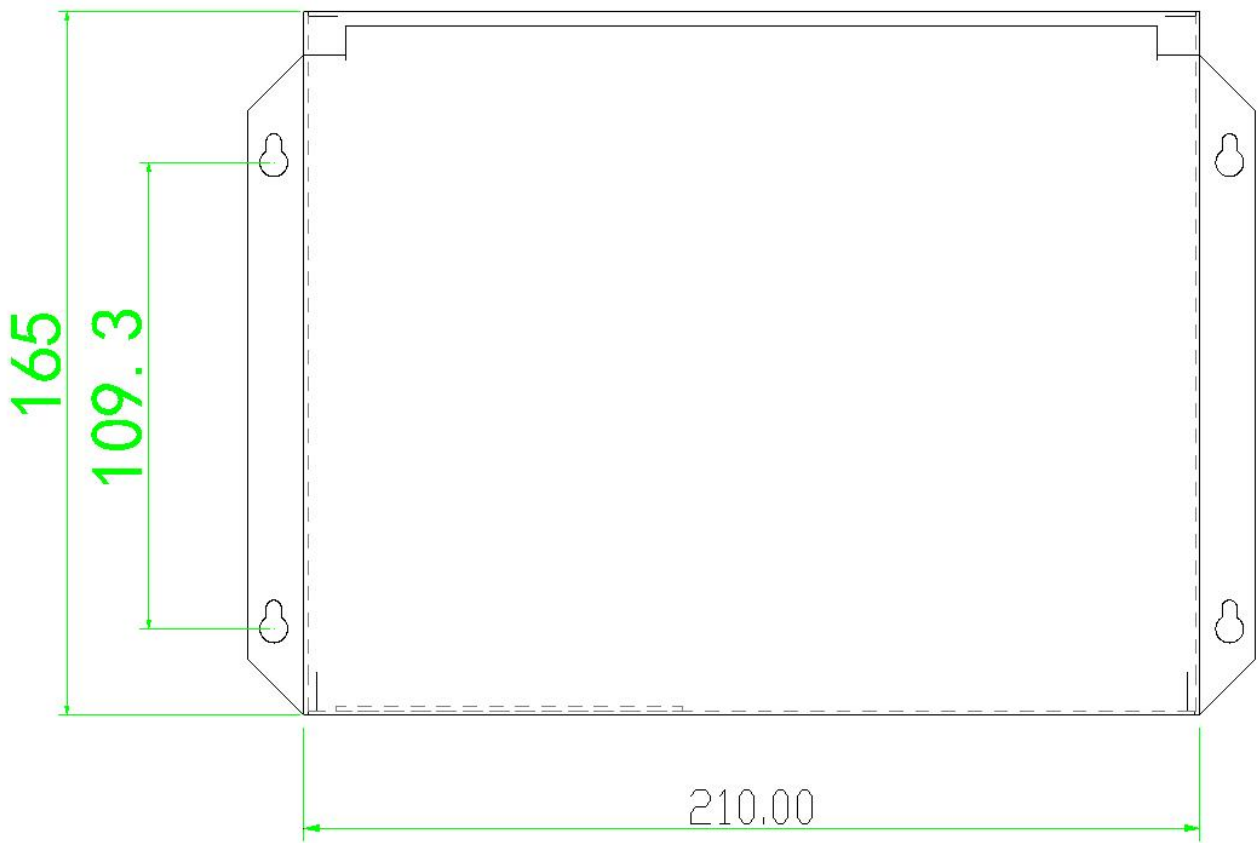


**Controller dimension drawing (unit mm)**

Positive view

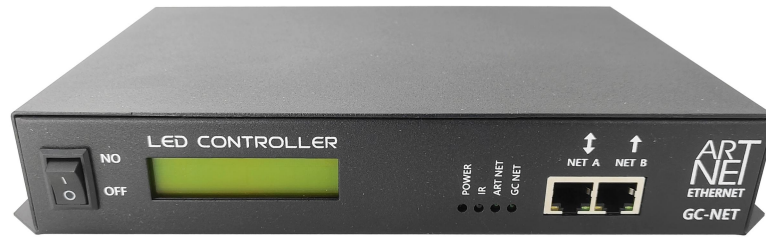


Top view, installation hole bitmap



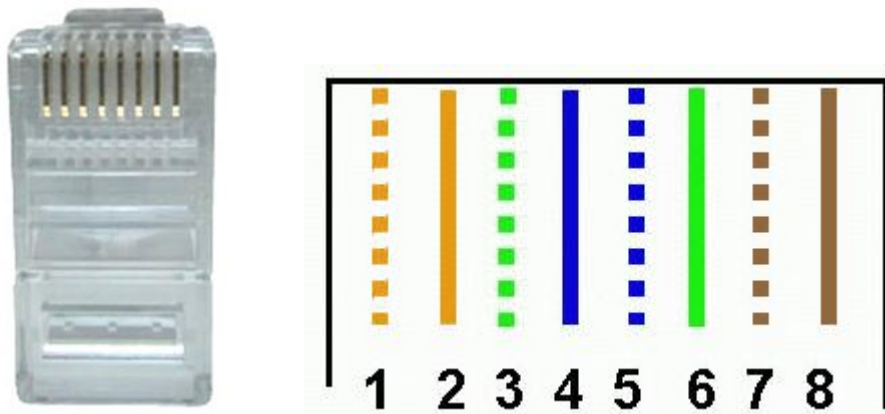
## Controller wiring instructions

Input port



Instructions:

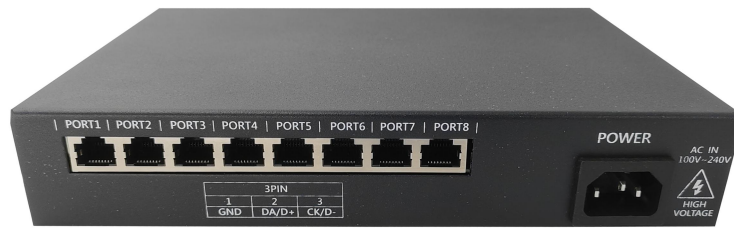
- 1、The cable pressing method must follow 568B pressing method: facing the copper sheet side, from left to right: orange white, orange, green white, blue, blue white, green, brown white, brown.
- 2、Computer to sub-control, sub-control to sub-control, network cable distance shall not exceed 80 meters, in case of more than 80 meters, use gigabit switch or no-load sub-controller as signal repeater.
- 3、Because the system uses full gigabit network, in order to ensure the communication quality of the system, it is suggested to use pure copper network cable.



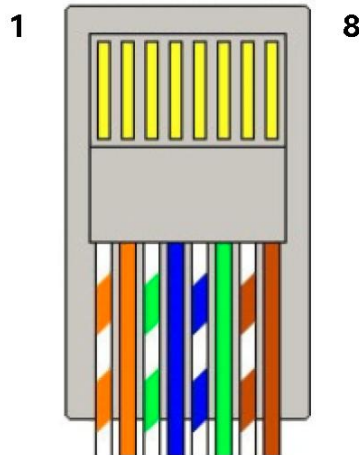
Crystal head line sequence



Output port



Output port wiring instructions



- 1: D+ : DMX512 signal line A/D+
- 2: D - : DMX512 signal line B/D -
- 3: GND
- 4: TTL&SPI: IC: 2811、16703、1934 ~
- 5&6: NC
- 7&8: GND

Controller network cable connection



**NET IN NET OUT**

**Computer network card must be gigabit**

## Setup Software Description

Open the software Artnet Setting

**If the tool cannot be opened, please install winpcap first.**

The screenshot shows the 'Art-Net Setting V3.41' window. Red boxes and arrows highlight specific settings:

- Local Network:** IP: 192.168.1.220 (Annotated: **Select computer IP**)
- Device Information:** Short name: GC-6808S, Long name: GC-6808S 8PORT DMX512SPT, Num of port: 4, IP: 192.168.1.10. A **Read** button is present. (Annotated: **Read back parameters**)
- Device:** IP: 192.168.1.10, Network Speed: Auto. (Annotated: **Setting the Device IP Address**)
- DMX Output Setting:** Radio buttons for 'The same number of universe per port contains' (selected) and 'Customize'. A dropdown menu shows '6' Dmx Universe. (Annotated: **6 universes per port**)
- Table of Port Settings:**

Port	Universe	Start	contains	Dmx Universe	End
Port1	(Universe)	1	contains 6	Dmx Universe	6
Port2	(Universe)	7	contains 6	Dmx Universe	12
Port3	(Universe)	13	contains 6	Dmx Universe	18
Port4	(Universe)	19	contains 6	Dmx Universe	24
Port5	(Universe)	25	contains 6	Dmx Universe	30
Port6	(Universe)	31	contains 6	Dmx Universe	36
Port7	(Universe)	37	contains 6	Dmx Universe	42
Port8	(Universe)	43	contains 6	Dmx Universe	48
- RGB Sorting:** Radio buttons for RGB (selected), RBG, GRB, GBR, BRG, BGR.
- RGBW Mode:** ☐ Enable RGBW Mode, ☐ RGBW, ☐ WRGB.
- IC Select:** IC Type: SPI&TTL (Annotated: **Setting the output IC**)
- Buttons:** DMX Test, Setting (Annotated: **A key set**)

- **Multiple devices in series, IP address and universe, will be automatically cascaded distribution.**
- After setting the parameters and configuring the sub-controller, the LCD display of the sub-controller will be updated immediately to view the parameters of the machine.



## LCD parameter display of controller



192.168.001.020

Controller IP address, The IP address must be the same network segment as the computer.



Net: ART-NET

Controller Network Mode: ART-NET.



IC: TM1812

Controller outputs IC signal, TM1812 stands for regular SPI.



Univ/Port: 6

Each port of the controller outputs 6 universes.



Univ: 001-048

The output universe serial number is 1-48.



TEST: STOP

Controller internal test mode, stop.



NetSpeed: Auto

Automatic adaptation of network speed.



REV: F2.07+M6

Controller version number.