SKYDANCE DMX512 Series Strip Light Control System Installation Guide

Contents

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SKYDANCE DMX512 Series Strip Light Control System

Specifications

- **Product Name:** DMX512 Series
- **Installation Guide:** Included
- **General:** LVD
- **Accessories:** DMX512 master, Signalamplifier optional, DMX512 decoder, Switching power supply
- **Light Source:** Spotlight, Downlight, LED strip

Product Usage Instructions

Switching Power Supply Usage

1. Select a power supply based on voltage and power requirements.
2. Ensure power voltage standards match the load voltage standards.
3. Load total power should be ≤ 80% of the switching power supply rated power.
4. Consider using glue glue-filling switching power supply for noise-sensitive areas.

DMX512 System Setup Refer to the DMX512 System Diagram for proper setup involving decoders, dimmers, and controllers.

Product Application

- **Constant Voltage LED Decoder:** Suitable for dimming and color control of single-zone or multi-zone lighting.
- **Constant Current LED Decoder:** Ideal for constant current LED strips, downlights, and spotlights.
- **High Voltage LED Strip Decoder:** Designed for DC 220V high voltage LED strips.

System Wiring

The DMX512 system allows connection to up to 32 decoders. Ensure proper signal wire length for optimal performance.

Frequently Asked Questions

Q: Can I use the DMX512 system with multi-pixel colorful SPI LED strips?

A: The system is not suitable for multi-pixel colorful SPI LED strips. It is recommended for other constant voltage or current LED fixtures.

Q: How many decoders can be connected to the DMX512 system?

A: The system allows connection to up to 32 decoders for expanded lighting control.

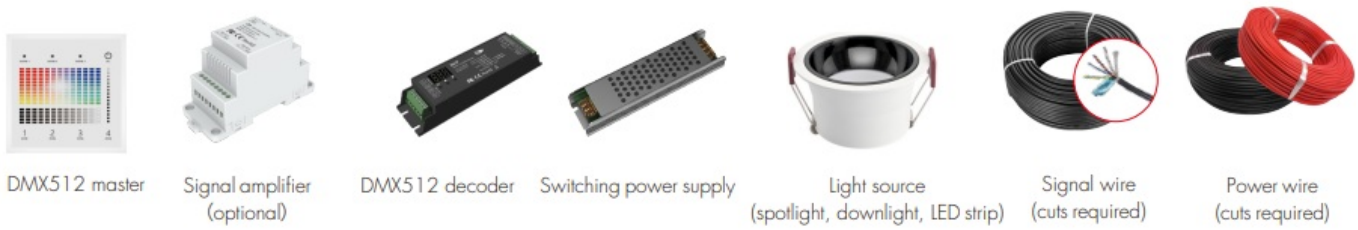
Q: What is the recommended setup for noise-sensitive areas?

A: Consider using a glue-filling switching power supply in places with noise requirements for optimal performance.

General

- Skydance DMX512/RDM series products are compatible with DMX512, DMX512 (1990), DM512-A, RDMV1.0 (E1.20 – 2006 ESTA Standard) international standard protocols, including RF DMX master, panel DMX master, DMX constant voltage or constant current decoder, signal converter and signal amplifier, providing a complete DMX lighting control solution.
- Including single color, color temperature, RGB, RGBW, RGB+CCT, and other light types, suitable for light controls of constant current, constant voltage, DMX512 colorful, SPI colorful, 0/1-10V, triac, and other lamps and lanterns.

Accessories



Switching power supply

1. The selection according to the voltage standards and total power of the load, and the power voltage standards must be the same as the load voltage standards, and the load total power should be less than or equal to 80% of the switching power supply rated power.
2. When the constant voltage controller is used in places with noise requirements, it is recommended to use the glue-filling switching power supply, because it's PWM dimming, current transients make the switching power supply emit noise, and the volume of noise depends on the manufacturing process of the transformer, and the gluing power supply can effectively limit the generation of noise due to the sealing of the transformer gap with glue.

Power wire

1. The selection of wire should be based on the load current and refer to the electrician's manual, ensure that the working current is within the safe load capacity of the wire, otherwise, there is a risk of overheating and burning or accelerated aging.

DMX512 signal wire

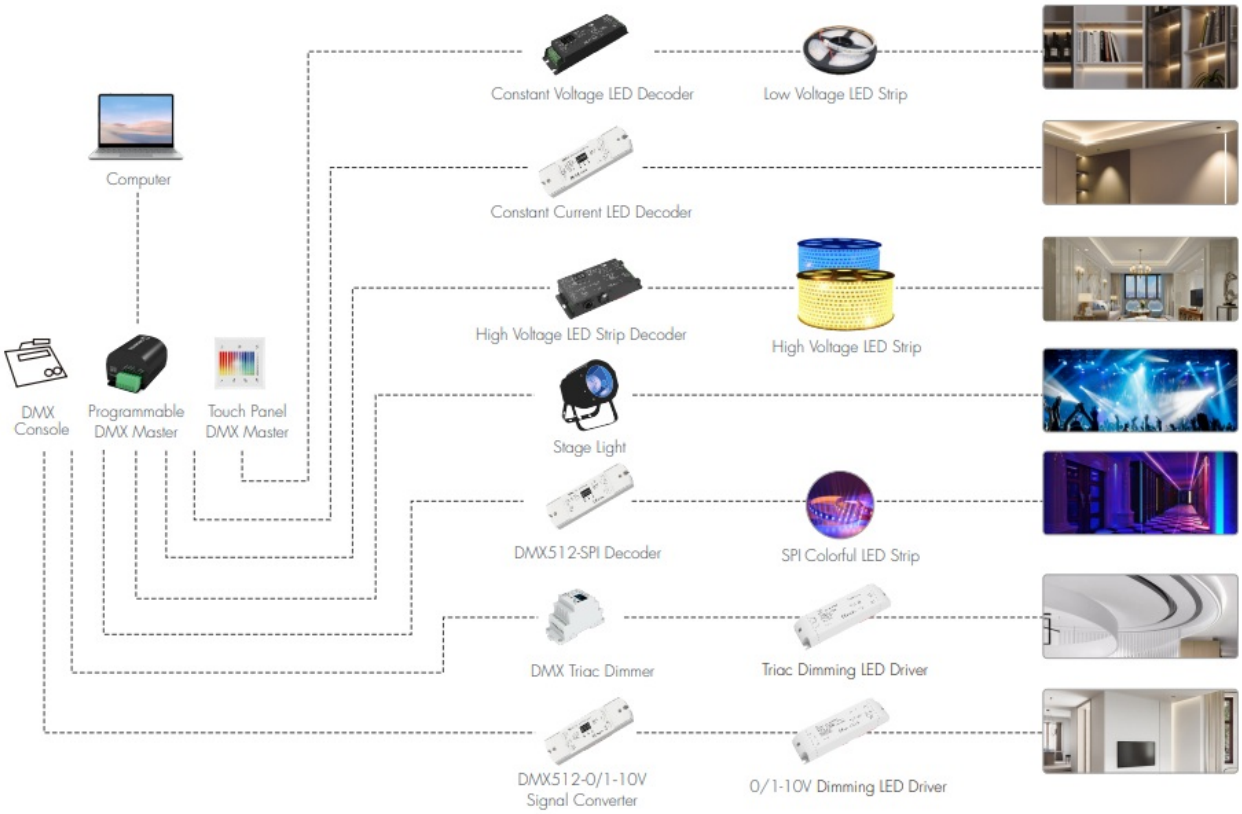
1. The signal wire must use the internationally recognized shielded twisted pair wire or super category 5 network

wire, whose diameter is 0.3mm² or more, when using category 5 cable, D+ and D- signal wire must be on the same twisted pair to reduce common mode interference.

2. DMX wiring should be separated from other strong and weak power, separate casing wiring, so as not to be interfered with by other signals.

System Diagram

DMX512 System Diagram

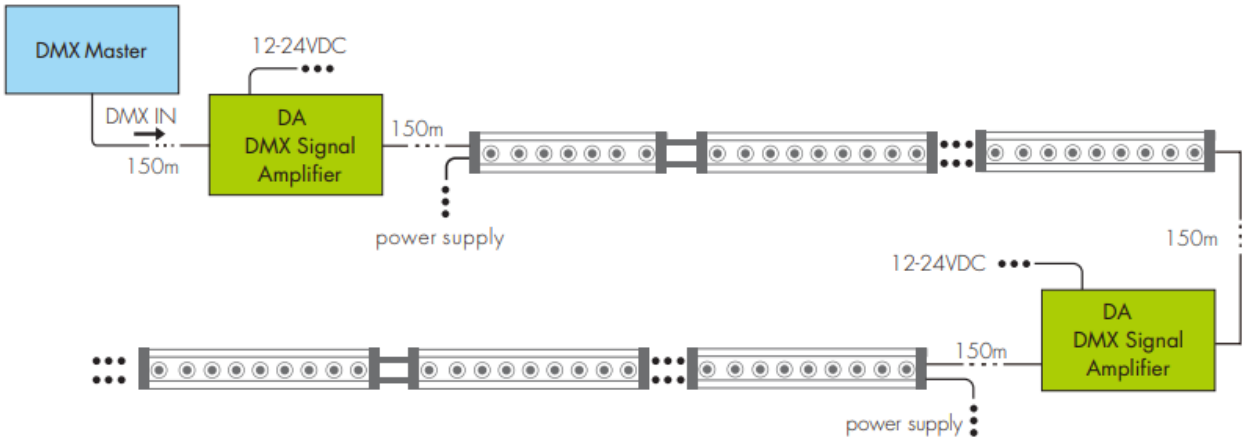


DMX512 Product Application and Selection

DMX512 Master Panel	Use with constant current or constant voltage LED decoder, suitable for the dim ming and color control of the single-zone or multi-zone lighting, not suitable for multi-pixel colorful SPI LED strips.
DMX512/RDM Constant Volt age Decoder	Suitable for low voltage LED strips, light bars, and other constant voltage lamps and lanterns.
DMX512/RDM Constant Curr ent Decoder	Suitable for constant current LED strips, light panels, downlights, spotlights, and other constant current lamps and lanterns.
DMX512/RDM High Voltage LED Strip Decoder	Suitable for DC 220V high voltage LED strips.
DMX512/RDM SPI Decoder	Suitable for multi-pixel colorful SPI LED strips.
DMX512/RDM 0/1-10V Signa l Converter	Suitable for 0/1-10V dimming constant voltage or constant current LED driver a nd light fixture.
DMX Triac Dimmer	Suitable for triac dimming constant voltage or constant current LED driver and li ght fixtures.
DMX512 Signal Amplifier	DMX signal isolation and amplification for system expansion or isolation from int erference.

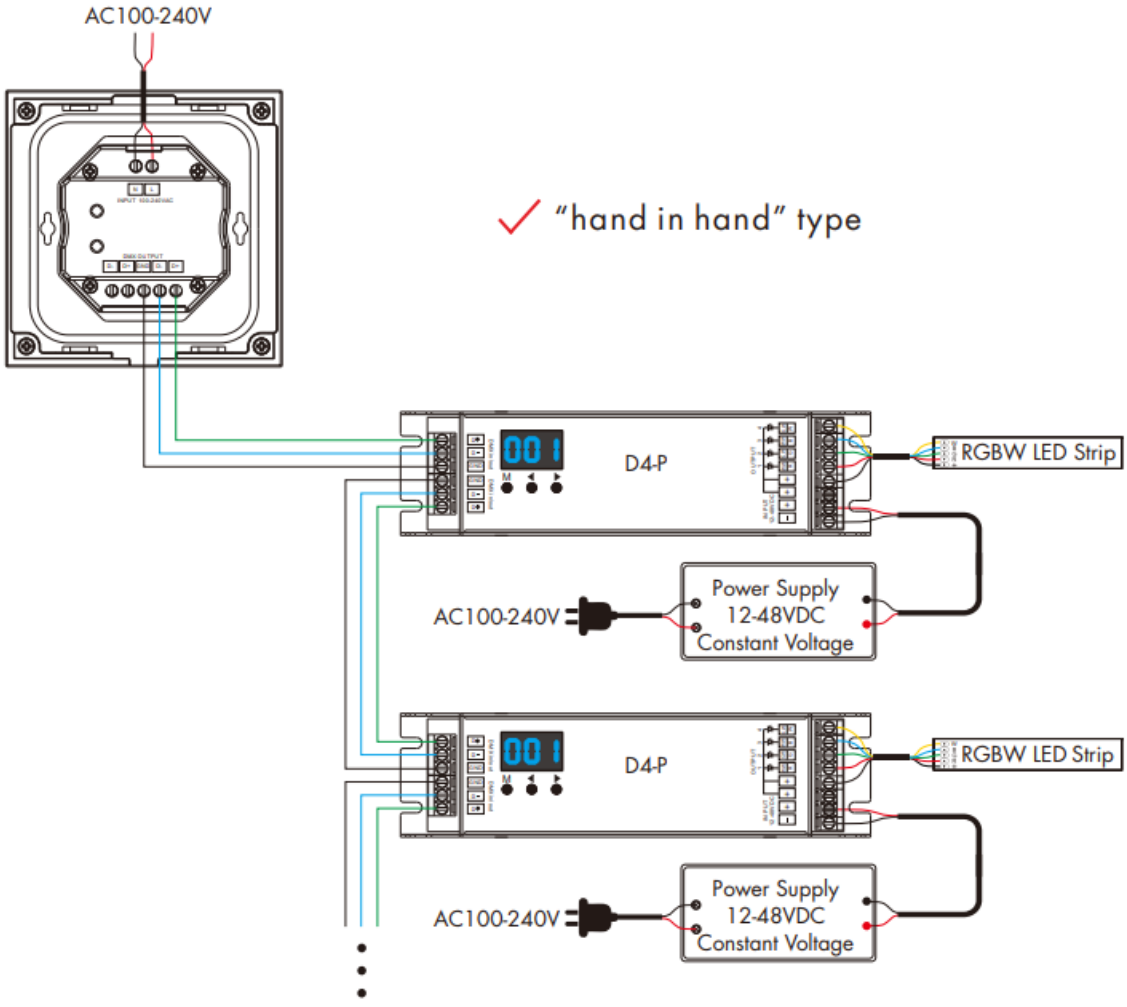
DMX512 System Wiring

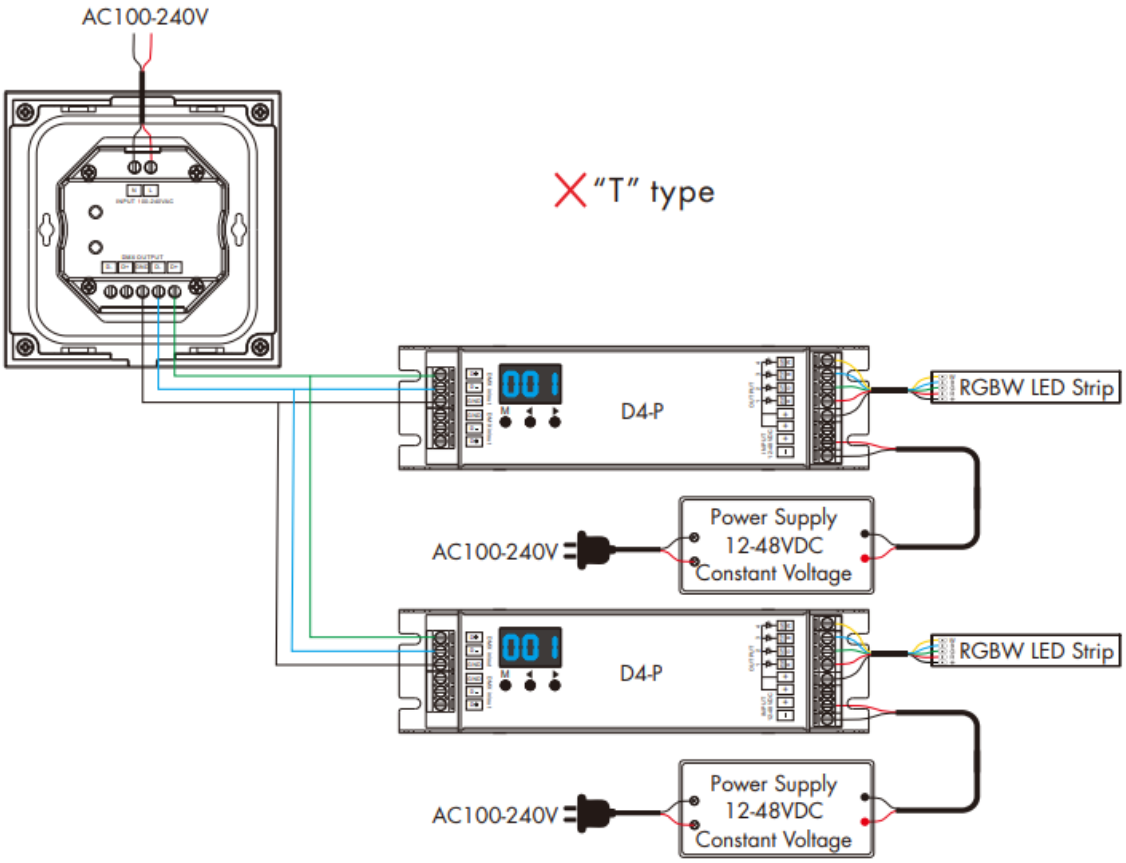
1. DMX512 system allows connecting to up to 32 decoders, the length of the signal wire <150 m, when exceeded 32, a signal amplifier should be added behind the 32nd decoder or 150 meters of the signal wire.
    - **Example of long-distance DMX signal transmission:**



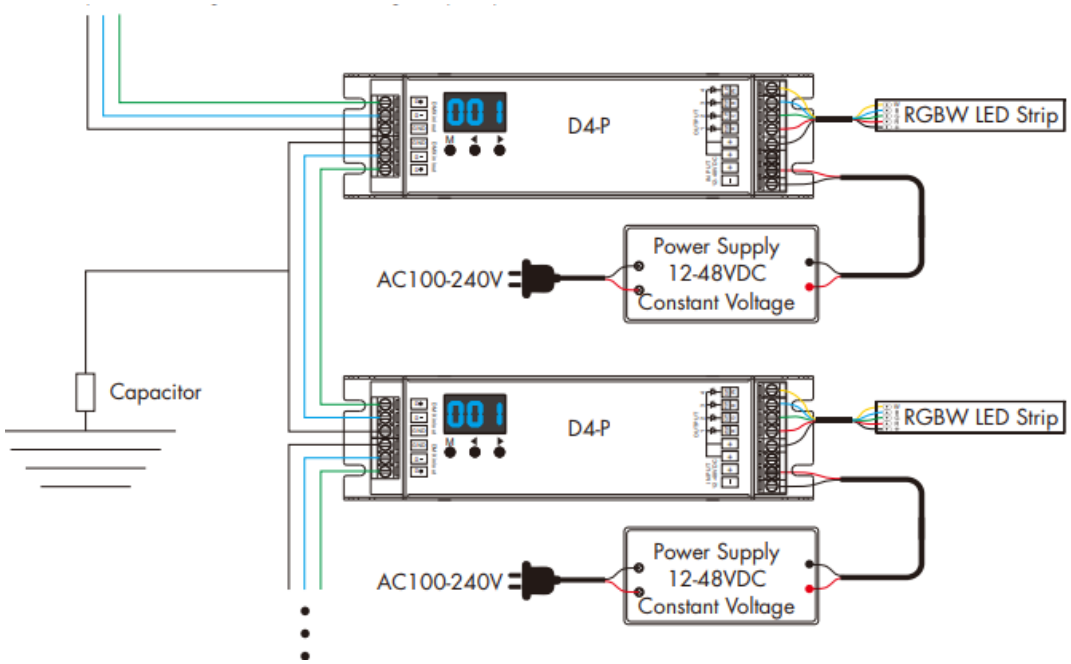
2. The end of the DMX signal wire (i.e., the D+ and D- terminals of the last decoder on each DMX link) should be connected in parallel with a 120Ω terminating resistor to match the impedance to prevent signal reflection.

3. DMX512 signal wire adopts a “hand in hand” type bus structure, forbidding the use of a “star” connection and a “T” connection.

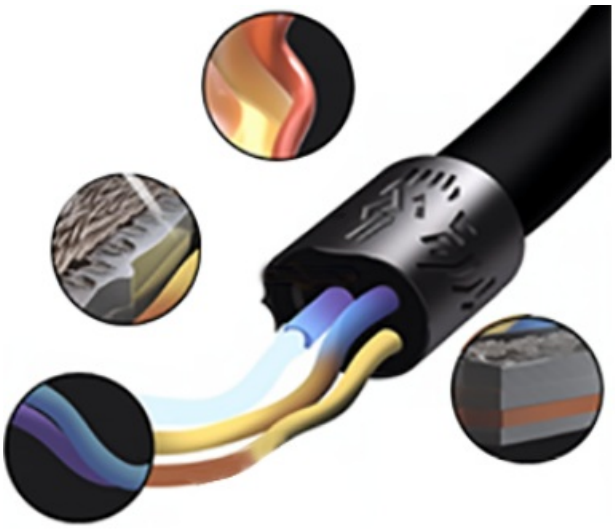




4. Connect the ground signal wire of all DMX512 decoders with a shielded wire.
    - If necessary, connect a 2-10uF capacitor to the ground to filter out high-frequency interference.

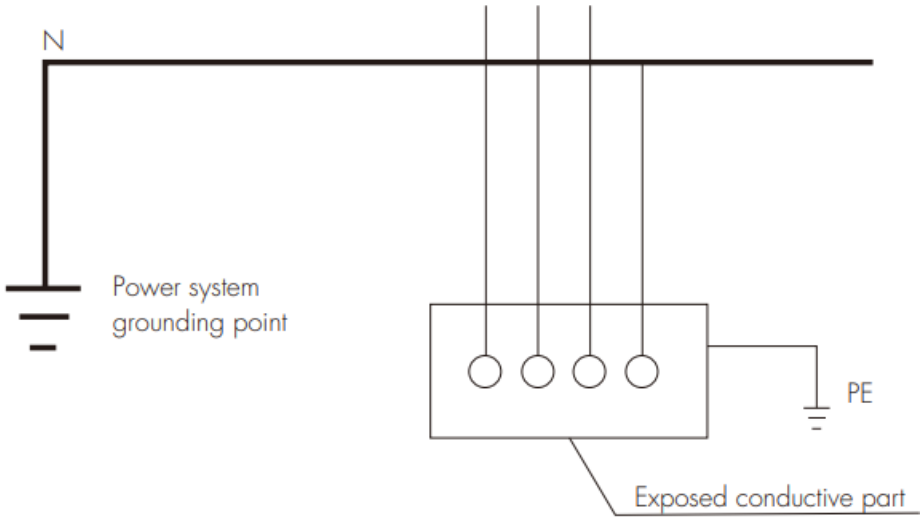


5. The cable layout should be straight and free from twisting, looping, forceful pressure, or damage.
    - Signal cables, power cables, twisted pair cables, Fiber optic cables, and other weak power cables in the building should be wired separately.
    - When wiring in strong interference environments, it is required to cover shielded twisted pair cables with galvanized steel tubes.

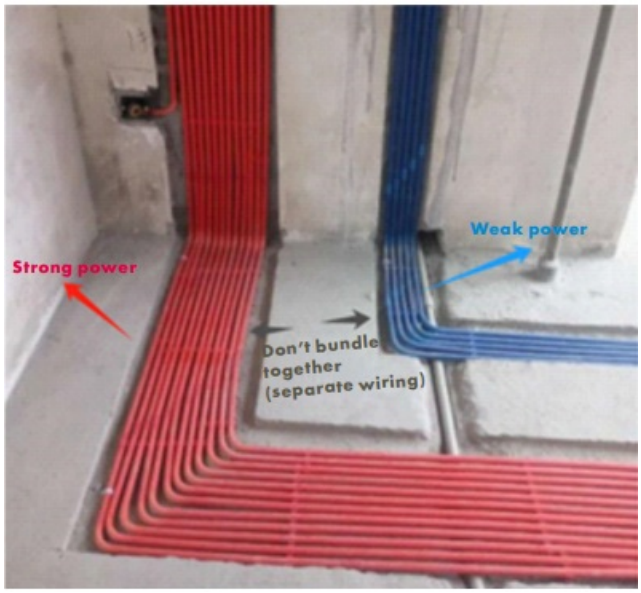


- Wiring should be straight, and should not be twisted or looped.
- Cables should not be subjected to physical force or damage.
- Weak cables should be wired separately.
- Cover shielded twisted pair cables with galvanized steel tubes when wiring in strong interference environments.

6. The DMX master, decoder power supply, and the box of the decoder power supply must be grounded, and make sure the grounding is good.



7. Wiring should be put away from high-voltage cables, and should not be parallel or bundled with power cable (separate strong and weak wiring). refer to the figure at right.
8. In a DMX512 system, must use the same cable and reduce the number of points of contact in the line as much as possible.
    - Make sure the joints are well-soldered and tightly wrapped to avoid looseness and oxidation.
9. Testing whether single lights are responding to the DMX signal as expected first.



4-Channel Constant Voltage

4-Channel Constant Voltage LED Decoder (D4-P) DMX address and parameter settings

- **Channels number**, PWM frequency, dimming curve, and other system parameter settings
- **Long press the M a**nd ◀ keys at the same time for 2s, and prepare for setup system parameters: decode mode, grey level, output PWM frequency, output brightness curve, default output level, and automatic blank screen.
- **Short press the M** key to switch six items.
- **Decode mode:** short press ◀ or ▶ key to switch 1/2/4 channel decode mode (“d-1”, “d-2” or “d-4”). When set as 1 channel decode, the decoder occupies only 1 DMX address, and four channels output the same brightness of this DMX address.
- **Grey level:** short press ◀ or ▶ key to switch 8bit (“b08”) or 16-bit (“b16”). Choose 16 bits if the DMX master supports 16 bits.
- **Output PWM frequency:** short press ◀ or ▶ key to switch 250Hz (“F02″), 500Hz (“F05″), 1000Hz (“F10″), 2000Hz (“F20″), 4000Hz (“F40″), 8000Hz (“F80″) or 16000Hz (“F16″).
- Higher PWM frequency will cause lower output current, and higher power noise, but more suitable for the camera (no ickers for video).
- **Output brightness curve:** short press ◀ or ▶ key to switch linear curve(“C-L”) or logarithmic curve(“C-E”).
- **Default output level:** press ◀ or ▶ key to change the default 0-100% level (“d00″ to “dFF”) when no DMX input signal.
- **Automatic blank screen:** short press ◀ or ▶ key to switch enable (“bon”) or disable(“boF”) automatic blank screen.
- Long press the M key for 2s or timeout 10s, and quit system parameter settings.

DMX Decoder Mode

- Short press the M key, when displaying 001~512, enter DMX mode.
- Press the ◀ or ▶ key to change the DMX decode start address(001~512), long press for fast adjustment.
- If there is a DMX signal input, will enter DMX mode automatically.
- **DMX Dimming:** Each D4-P DMX decoder occupies 4 DMX addresses when connecting the DMX console.

- For example, the defaulted start address is 1, and their corresponding relationship is in the form.

DMX mode
(001~512)

DMX Console	DMX Decoder Output
CH1 0-255	CH1 PWM 0-100% (LED R)
CH2 0-255	CH2 PWM 0-100% (LED G)
CH3 0-255	CH3 PWM 0-100% (LED B)
CH4 0-255	CH4 PWM 0-100% (LED W)

Self-test mode

- Enter self-test mode only when the DMX signal is disconnected or lost.
- Short press the M key, when displaying L-1~L-5, and enter self-test mode.
- Press the ◀ or ▶ key to change the mode number(L-1L-5).
- The self-test mode includes four channels that light up separately or synchronously.

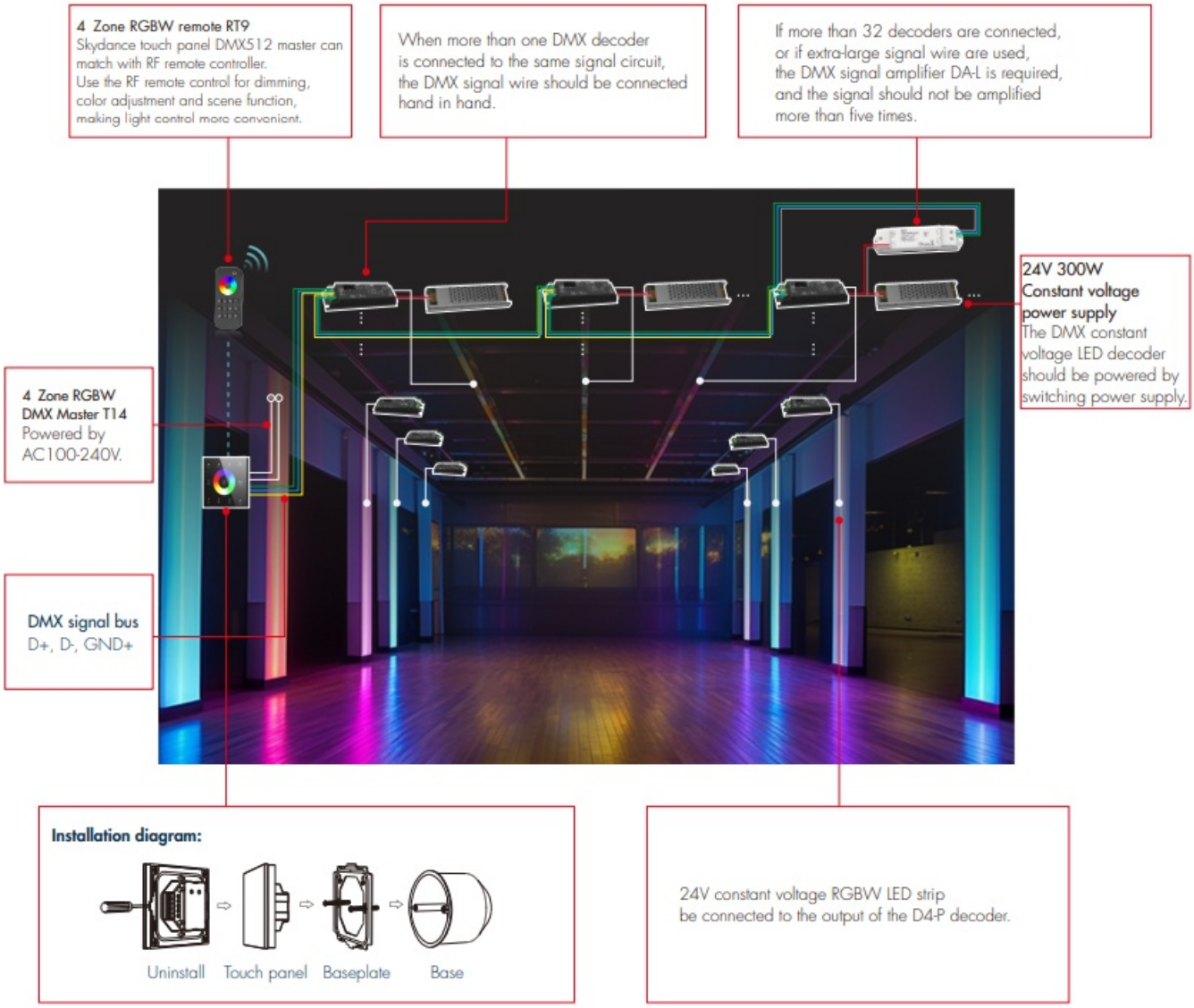
self-test mode
(L-1~L-5)

DMX address setting

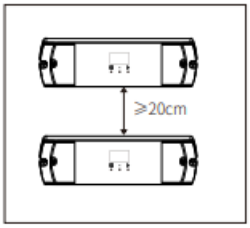
- When each decoder is set to the same DMX start address, multiple decoder lights can be controlled at the same time.
- When each decoder is set to a different DMX start address, multiple decoder lights can be controlled independently.
- For example, each decoder uses four addresses, and the decoder address order is set to 1, 5, 9, 13….. .509, then it can independently control 128 RGBW lights, and achieve various colorful and dynamic lighting functions.

Installation Application Example

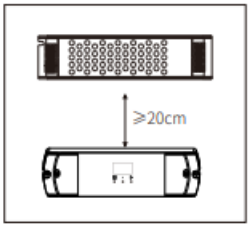
The DMX512 system can be used in the ballroom for wide-area, multi-zone group control via wireless or wired connection.



- Don’t stack products, and place them at a distance of≥20cm, to avoid poor heat dissipation affecting lifespan.



- Don’t stack products and switching power supplies, and place products and switching power supplies at a distance of ≥20cm, to avoid interference from power supply radiation.



Documents / Resources

	**SKYDANCE DMX512 Series Strip Light Control System** [pdf] Installation Guide DMX512, DMX512 1990, DM512-A, DMX512 Series Strip Light Control System, DMX512 Series, Strip Light Control System, Light Control System, Control System, System

References

- **User Manual**