




Control4 C4-DX-DEC-5 5-Channel DMX Decoder Installation Guide

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Control4 C4-DX-DEC-5 5-Channel DMX Decoder



Product Information

The 5-Channel DMX Decoder is a versatile device that allows for flawless integration of RGB and tunable white LEDs into new and existing DMX installations. It is installed in-line between the Creative Lighting DMX Gateway and the Vibrant tape light, translating DMX signals into the PWM control signal used by the LEDs. The decoder is designed for temporary or permanent applications and offers a range of features and specifications.

Warnings and Considerations

Before installing the DMX Decoder, please consider the following:

- Use only with 24V DC drivers with a wattage capacity that can handle the total load.
- Factory warranty will be void if used with a non-recommended power supply, transformer, or driver.
- Ensure that the electrical power to the system is disconnected at the source prior to installation or any servicing.

Product Usage Instructions

Installing the DMX Decoder:

1. Determine the desired location for the receiver and securely mount the decoder using the mounting tabs on either end.
2. Wire the decoder to the tape light by following the light's instruction manual and wiring diagrams. Make sure to match polarity. The wiring will vary depending on the product.
3. Connect the DMX controller (gateway) to the decoder. Connect red to D+, black to D-, and green to GND.

4. Connect the 24V DC power supply to the decoder. Connect red to V+ and black to V-.

Connecting more than one DMX Decoder:

If you want to control multiple tape lights, you can connect more than one Vibrant 5-Channel DMX decoder with jumper wires.

1. From the first decoder, wire D+, D-, and GND on the DMX in/out port to D+, D-, and GND on the second decoder. Use an appropriate wire gauge for the expected current.
2. From the first decoder, wire V+ and V- on the DC Power Input to V+ and V- on the second decoder (or connect another power supply if more wattage is needed).
3. For the last decoder in the line, place a 120-ohm terminating resistor in the remaining D+ and D- terminals. Terminating RJ45 and XLR plugs are also acceptable for their respective ports.

Supported models

- C4-DX-DEC-5 – Control4 Vibrant 5-Channel DMX Decoder

Introduction

Vibrant 5-Channel DMX signal receiver/decoder is installed in-line between the Creative Lighting DMX Gateway and the Vibrant tape light. This decoder translates DMX signals into the PWM control signal used by RGB and tunable white LEDs, and allows for flawless integration into new and existing DMX installations. Seamlessly integrate color-changing tape light for temporary or permanent applications.

Specifications

The specifications are described below.

Model number	C4-DX-DEC-5
Input voltage	12-24V DC
Current Max	40.5A
Output wattage	96-192W per channel
Output current	8A per channel
Rating	cURus Recognized / FCC Compliant / RoHs Compliant / IP20 Dry Location

Warnings and considerations

- **IMPORTANT!** Read all installation instructions before beginning; if not qualified, do not attempt installation. Contact a qualified electrician
- **IMPORTANT!** To reduce the risk of fire, electric shock, or injury to persons, pay close attention to this manual and stay within its guidelines when using this product. Save these instructions for future use.
- **IMPORTANT!** Do not cover this product with paper surface coverings, fabrics, streamers, or other similar

combustible materials.

- **IMPORTANT!** This device is rated for indoor use in dry locations.
- **IMPORTANT!** Do not secure this product or its cord with staples, nails, or like means that may damage the outer jacket or cord insulation.
- **IMPORTANT!** Do not use if there is any damage to the tape light, diodes or power cord insulation; inspect periodically.
- **IMPORTANT!** Do not install in airtight tanks or enclosures of any kinds.
- **IMPORTANT!** Size your 24V DC driver appropriately for your run distance. Be sure not to load a driver to 100% as this will reduce its efficiency; an 80% maximum load is recommended.
- **WARNING!** These products may represent a possible shock or fire hazard if improperly installed or attached in any way. Products should be installed in accordance with these instructions, current electrical codes, and/or the current National Electric Code (NEC).
- **WARNING!** Use only with 24V DC drivers with a wattage capacity that can handle the total load; see page 2 for more details. Factory warranty will be void if used with a non-recommended power supply, transformer or driver.
- **WARNING!** To reduce the risk of fire, electric shock or injury to persons, make sure that the electrical power to the system is disconnected at the source prior to installation or any servicing.
- **WARNING!** This device must be protected by a circuit breaker (20A max).
- **ATTENTION!** Cet appareil doit être protégé par un disjoncteur (20A max.)
- **IMPORTANT!** Using this product in a manner other than outlined in this document voids your warranty. Further, Snap One is NOT liable for any damage incurred with the misuse of this product. See "Troubleshooting."
- **IMPORTANT!** Snap One does not guarantee the performance of any bulb or lamp/fixture in your environment. Customer assumes all risks, including any damage to snap one products, associated with (i) the type, load rating and quality of the bulb and lamp/fixture, or (ii) any use or installation not in accordance with the documentation furnished by snap one, either with the snap one product or at www.Snapone.Com.

Before you install the DMX Decoder

Ensure that the location and intended use meet the following criteria:

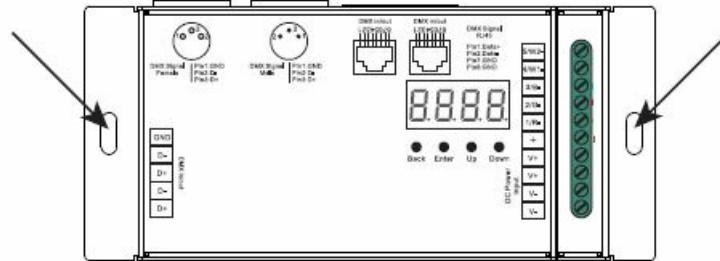
- Your tape light does not exceed the maximum run length.
- Your power supply is rated for 20% more than the total wattage of the run.
- The voltage drop from the tape light length and the length of connecting wires does not go below 21.6V.
- Each decoder's load does not exceed 192W.
 1. Before you install the power supply, calculate the length of the tape light run and multiply the length by the wattage per distance specification. For example, if you have 10 feet of Fully Tunable linear light at 6.5 W per foot, you need at least a 65 watt power supply, that would mean you need the C4-PS24-96 – Control4 Vibrant 96 Watt 24V Power Supply.
 2. Ensure that the total length of tape, wiring, and connectors does not drop the voltage below 21.6V. See this link to calculate voltage drop based on length of wires and wire gauge: ctrl4.co/vibrant-voltagedrop.

Installing the DMX Decoder

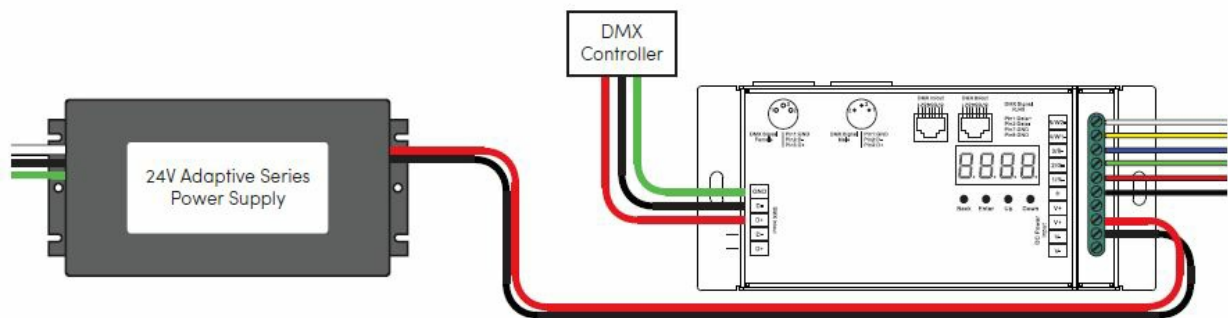
The DMX Decoder requires the following:

- This receiver requires a Vibrant 24V DC power supply (sold separately).
- This receiver requires a Creative Lighting DMX Gateway (sold separately).

1. Determine desired location of receiver. Securely mount the decoder using the mounting tabs on either end of the receiver.



2. This receiver has 5 x 8A current output terminals that can be used with single color, Fully Tunable White, RGB/RGBW, or RGB+Tunable White Vibrant tape light. Wire the decoder to the tape light by following the light's instruction manual and wiring diagrams, ensuring to match polarity (wiring varies depending on product). Connect light prior to bringing any power to the system.
3. Connect the DMX controller (gateway) to the decoder. Connect red to D+, black to D-, and green to GND.
4. Connect the 24V DC supply power to the decoder, connecting red to V+ and black to V-.

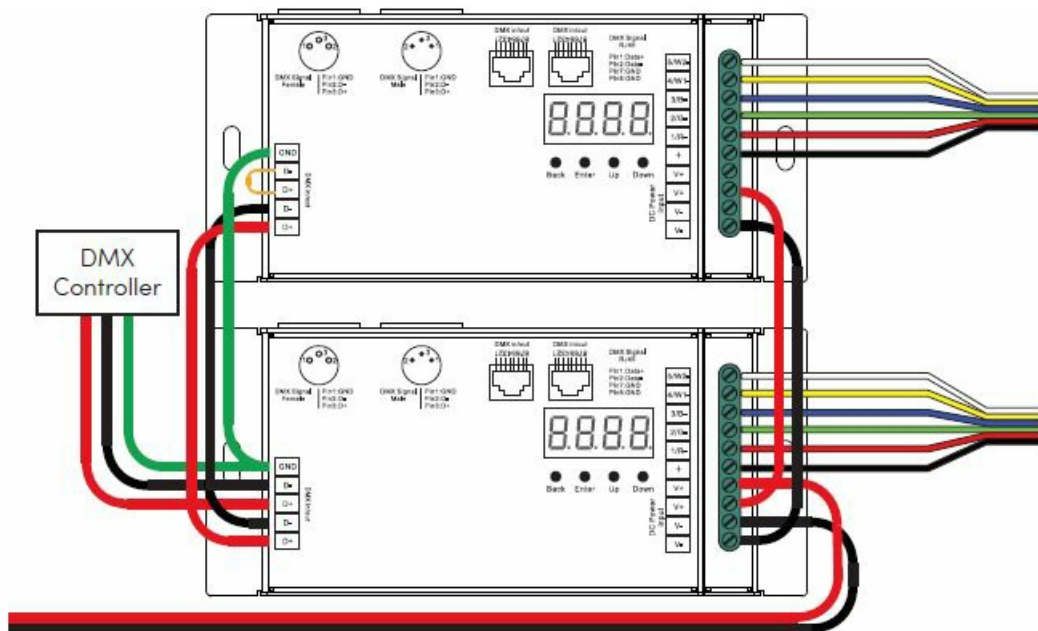


Connecting more than one DMX decoder

With one DMX gateway to communicate with your Control4 system, you can connect more than one Vibrant 5-Channel DMX decoder to control multiple tape lights.

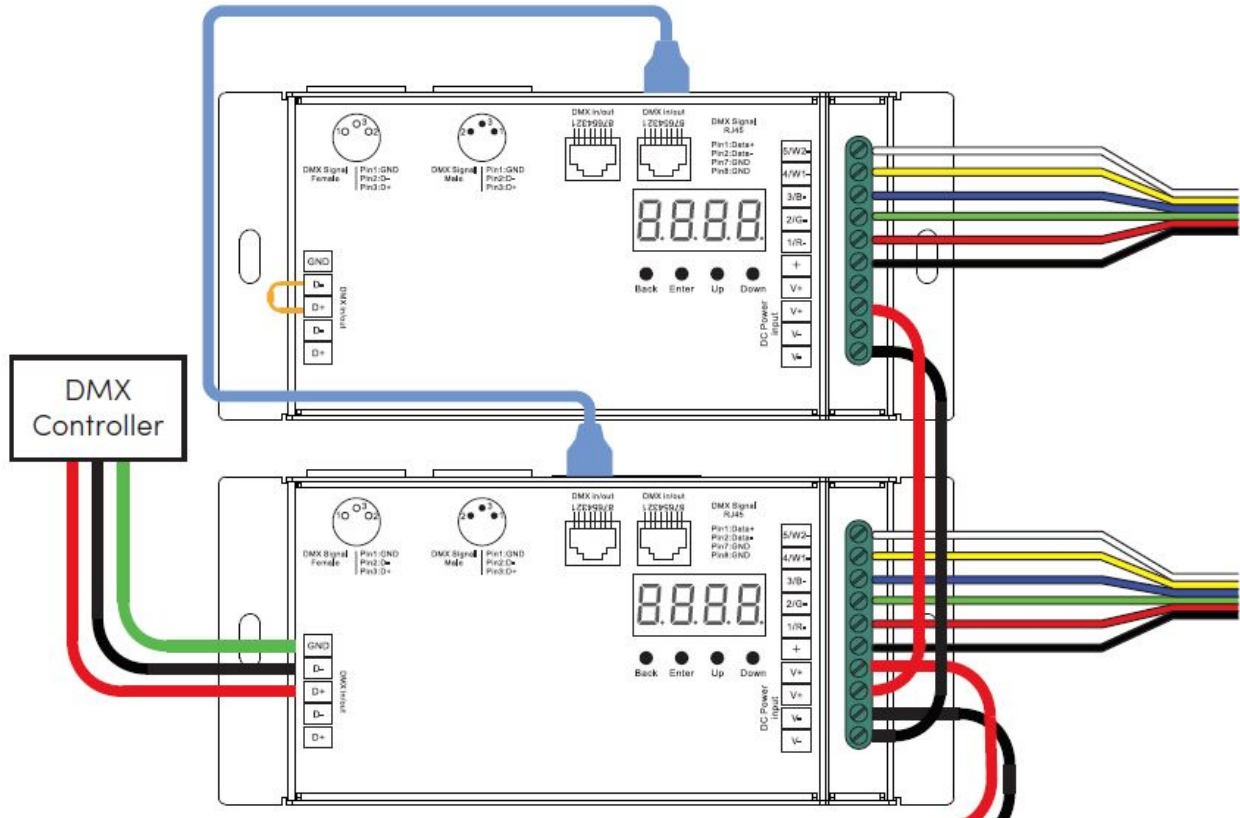
Connecting more than one DMX decoder with jumper wires

1. From the first decoder, wire D+, D-, and GND on the DMX in/ out port to D+, D-, and GND on the second decoder. Use an appropriate wire gauge for the expected current.
2. From the first decoder, wire V+ and V- on the DC Power Input to V+ and V- on the second decoder (or connect another power supply to the second decoder if more wattage is needed for this tape light).
3. For the last decoder in the line, place a 120-ohm terminating resistor in the remaining D+ and D- terminals. Terminating RJ45 and XLR plugs are also acceptable for their respective ports.



Connecting more than one DMX decoder with Cat 6

1. From the first decoder, connect the Cat 6 cable from the DMX in/ out port to the second decoder.
2. From the first decoder, wire V+ and V- on the DC Power Input to V+ and V- on the second decoder (or connect another power supply to the second decoder if more wattage is needed for this tape light).
3. For the last decoder in the line, place a 120-ohm terminating resistor in the remaining D+ and D- terminals. Terminating RJ45 and XLR plugs are also acceptable for their respective ports.

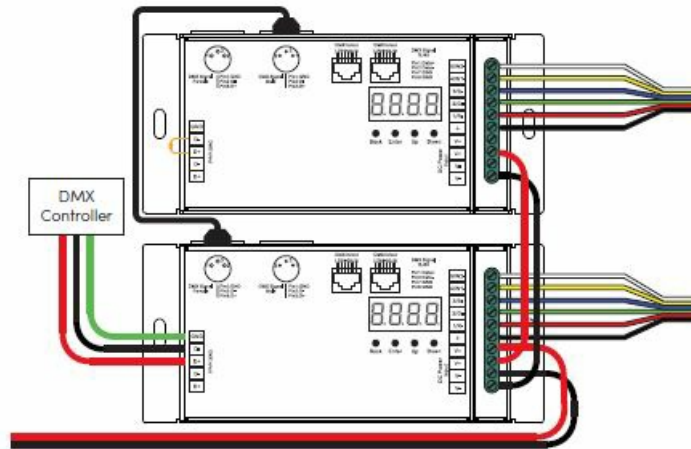


Connecting more than one DMX decoder with 5-pin DMX XLR

1. From the first decoder, connect the 5-pin DMX XLR (120 ohm) cable from the DMX Signal port to the second

decoder.

2. From the first decoder, wire V+ and V- on the DC Power Input to V+ and V- on the second decoder (or connect another power supply to the second decoder if more wattage is needed for this tape light).
 3. For the last decoder in the line, place a 120-ohm terminating resistor in the remaining D+ and D- terminals.
- Terminating RJ45 and XLR plugs are also acceptable for their respective ports.



Operating

Operating the DMX Decoder



1. This decoder can operate in Standalone Mode or Decoder Mode. Before choosing any other setting, select which mode you wish to operate: run1 for DMX Decoder Mode and run2 for Standalone Mode.
2. Use the Up and Down buttons to toggle through menu selections.
3. Use the Enter button to select and the Back button to return to main menu.

DMX Decoder Mode (run1) settings

Menu	Options
A.XXX	DMX Address: default 001
CHXX	DMX Channel Quantity – Default CH05 CH01 = 1 DMX address: all output channels 001 CH02 = 2DMX address: output 1,3=001 & 2,4,5=002 CH03 = 3DMX address: output 1,2=001,002 & 3,4,5=003 CH04 = 4DMX address: output 1,2,3=001,002,003 & 4,5=004 CH05 = 5DMX address: output 1,2,3,4,5=001,002,003,004,005
btXX	PWM Resolution: 8 bit or 16 bit – default 16 bit
PFXX	PWM Frequency: 00 to 30 – default 1kHz
gAXX	Dimming Curve Gamma Value: 0.1 to 9.9 – default gA1.5
dPXX	Decoding Mode: default dp1.1 1st X is DMX address qty, 2nd X is PWM channel qty

Standalone Mode (run2) settings

Menu	Options
X-YY	PWM channel brightness: The X sets the PWM channel (1-5). The YY sets the brightness level (0-100%). Press Up or Down to set the PWM channel (X), then press Enter . Then, press Up or Down to set the channel brightness (YY), then press Back to confirm.
P.XX	Programs: see table below for program list. 31 programs
b-XX	Brightness of the running program: 8 brightness levels
SP-X	Program play speed: 9 speed levels

Program	Description
00	RGB off
01	Static red
02	Static green
03	Static blue
04	Static yellow (50% red, 50% green)
05	Static orange (75% red, 25% green)
06	Static cyan (50% green, 50% blue)
07	Static purple (50% blue, 50% red)
08	Static white (100% red, 100% green, 100% blue)
09	Two colors at a time mix and fade: 
10	All colors mix and fade: 

11	Each color fades in and out:
12	Three color blink:
13	Each color fades in and blinks out, in succession:
14	Each color blinks in and fades out, in succession:
15	Three color strobe
16	White strobe
17	Seven color fade in and out (red, orange, yellow, green, cyan, blue, purple)
18	Seven color blink (red, orange, yellow, green, cyan, blue, purple)
19	Seven color strobe (red, orange, yellow, green, cyan, blue, purple)
20	Red, white chasing fade
21	Green, white chasing fade
22	Blue, white chasing fade
23	Red, orange chasing fade
24	Red, purple chasing fade
25	Green, yellow chasing fade
26	Green, cyan chasing fade
27	Blue, purple chasing fade
28	Blue, cyan chasing fade
29	Red, yellow, green chasing fade
30	Red, purple, blue chasing fade
31	Green, cyan, blue chasing fade

Example DMX Decoder settings for one Vibrant tape light

Follow this example to set up your DMX Decoder settings. In this example, you have

- 1 DMX decoders
- 1 tape light – Fully Tunable White
 1. Configure the first DMX decoder to a DMX address of 1 (A.001).
 2. Configure the first DMX decoder for 3 channels (CH03) for the Fully Tunable White tape light
 3. In the driver for the Vibrant Fully Tunable White tape light in Composer, set the Mode to Fully Tunable and set the address for each channel (1-3).

Example DMX Decoder settings for multiple Vibrant tape lights

Follow this example to set up your DMX Decoder settings. In this example, you have

- 2 DMX decoders
- 2 tape lights, 1 RGBTW and 1 RGBW.
 1. Configure the first DMX decoder to a DMX address of 1 (A.001).
 2. Configure the first DMX decoder for 5 channels (CH05) for the RGBTW tape light.
 3. Since the first DMX decoder is using 5 channels, this decoder starts at the next channel. Configure the

second DMX decoder to a DMX address of 6 (A.006).

4. Configure the second DMX decoder for 4 channels (CH04) for the RGBW tape light.
5. In the driver for each Vibrant tape light in Composer, set the Mode for each light (RGB + TW and RGBW) and set the address for each channel in each light (1-5 for the RGBTW and 6-10 for the RGBW).

Troubleshooting

Factory Restore

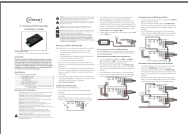
- To restore factory default settings, press and hold both the Back and Enter buttons until the digital display turns off and then release both buttons. The system will reset and the digital display will turn on again with all settings restored to default.

Warranty and legal information

- Find details of the product's Limited Warranty at snapone.com/legal. or request a paper copy from Customer Service at 866.424.4489.
- Find other legal resources, such as regulatory notices and patent information, at snapone.com/legal.

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Documents / Resources

	Control4 C4-DX-DEC-5 5-Channel DMX Decoder [pdf] Installation Guide C4-DX-DEC-5, C4-DX-DEC-5 5-Channel DMX Decoder, 5-Channel DMX Decoder, DMX Decoder, Decoder
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