

## DMX Decoder includes scrambled pulse width modulation technology



EnvironmentalLights.com recently added a [24 Channel \(3 Amps per Channel\) DMX Decoder](#) [1] to their Studio Series of DMX controllers and decoders. This new addition allows for greater design flexibility, higher load capacities, and includes the newest scrambled pulse width modulation (S-PWM) technology.

Each of the 24 channels can sustain up to 3 amps of current at 5, 12, or 24 VDC. Channels 1-12 and 13-24 are powered by separate voltage inputs, allowing strands of two different voltages to be addressed simultaneously. Contrary to traditional decoders which apply the same voltage to all loads, with the 24 Channel DMX Decoder (*DMX-24-2000S*) all of your [LED strip lights](#) [2] do not have to have the same input voltages.

With a high PWM frequency of 2,000 hertz, the appearance of flicker that can be seen by studio equipment is reduced and there is a smooth output of light. The 24 Channel DMX Decoder also contains S-PWM patented technology, which increases the visual refresh rate and supports a 16-bit gray scale control on the output channels. Simply put, this decoder allows for higher color resolution and enables high speed iris cameras to seamlessly capture video in real time, without flicker.

### Pulse width modulation

[Pulse width modulation](#) [3] (PWM) is a method of controlling power to devices. LED

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lights do not dim smoothly on analog signals, so PWM is a common method used for dimming LED lighting. On and off pulses of different frequencies are sent to the light, which then visually appears as steady dimmed light.

Video cameras, especially those used in professional studios, can pick up on flicker at much higher frequencies than normal cameras. For this reason, EnvironmentalLights.com has developed their [Studio Line of DMX Controllers and Decoders](#) [4]. All controllers in this line have either a PWM frequency of 5,000 hertz, or a scrambled PWM of 2,000 hertz.

### **Scrambled pulse width modulation**

[Scrambled pulse width modulation](#) [5] (S-PWM) is an enhanced version of normal PWM signaling. This new technology has been patented in several countries due to its innovation and ability to reduce appearance of flickering in high level recording.

The duty cycle of each period is split or “scrambled” into several sub-pulses. The pulses of each channel will coordinate to reduce periods in which all channels are off. S-PWM supports 16-bit gray scale control that allows for greater color resolution and clarity.

This technology is typically used in professional studios to reduce flicker recorded by high speed iris cameras, and could also be used for stage lighting at concerts, sporting events or nightclubs.

For more information about Environmental Lights, visit [www.EnvironmentalLights.com](http://www.EnvironmentalLights.com) [6].

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### **Links:**

[1] <http://www.environmentallights.com/led-controllers-and-dimmers/led-controllers/14828-dmx-24-2000s.html>

[2] <http://www.environmentallights.com/led-rope-and-strip-lights/led-strip-lights.html>

[3] <http://www.environmentallights.com/library/pwm/>

[4] <http://www.environmentallights.com/led-controllers-and-dimmers/led-controllers.html>

[5] <http://www.environmentallights.com/library/scrambled-pulse-width-modulation/>

[6] <http://www.environmentallights.com/>