

## Using Wireless LED Dimmers For Props And Costumes

Everyone wants to use LED tape for props, costumes, and scenery. City Theatrical makes a variety of products to make this easy to do. Here's how to do totally wireless lighting effects with LED tape. You can imagine the possibilities for props, costumes, and moving scenery with this very tiny four channel wireless dimmer.



We'll start with one of our D4 Neo Dimmers. This is a four channel dimmer, with a total of 10A of output, and a maximum of 5A on any one channel. You can use four channels of 2.5A each, or three channels of 3.3A each, or two channels of 5A each. I'll be using all four channels.



You'll need a battery power source. Shown here is a tiny and easily hidable 800mAh (milliampere hour) NiMH (nickel metal hydride) battery. You can get them from [batteryspace.com](http://batteryspace.com) or [batteriesplus.com](http://batteriesplus.com) and you can get them in a variety of sizes. Get a charger at the same time.

How big a battery do you need? It is purely a function of your load and the duration of the cue. Divide ampere hours (battery) by amperes (load) and derate by 20% for system loss. So if you are using a .8Ah battery and your load is 2A, you could operate for about 20 minutes ( $.8/2 \times 20\% = .32$  hours or about 20 minutes). If you need a longer duration, or if you have a larger load, you can use a larger battery, or small batteries wired in parallel.

Note that I am using Anderson connectors on the battery to enable me to make a connection to the D4 Dimmer. You could use any method for this, such as Molex connectors, or even wire nuts. Also, be careful with batteries! They hold a surprising amount of energy.

Now I'll connect my power tails to the D4 Dimmer power terminals. Red to the + (plus), black to the - (minus). The other wire (permanently) attached to the D4 is the flexible antenna.

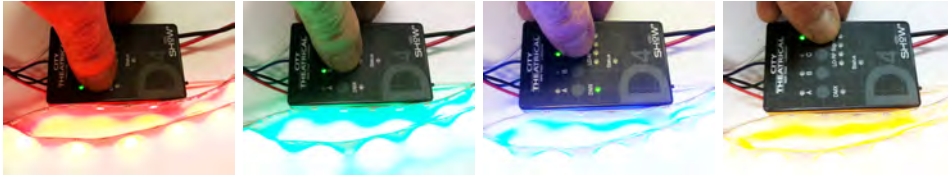


Now I'll connect my LED tape. I'm using City Theatrical [QolorFlex RGBA](http://www.citytheatrical.com) 12V four color tape. I'll put the common (black wire) on the + (plus) terminal of output A, and the red, green, blue, and white wires on the - (minus) terminals of outputs A, B, C, and D. The minus terminals are all connected internally so only one connection is required to the black wire.

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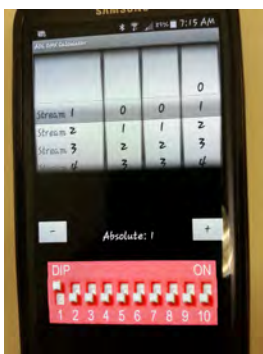
Now, even without DMX, I can use my bump buttons to check my wiring. Plug in the battery. The DMX light will be flashing, showing that DMX is not present. I can press each of the bump buttons to check the circuit and the output of the tape. This allows you to troubleshoot your installation and to track down any wiring errors you may have made (LED tape can be a little confusing sometimes!) before you introduce DMX to the system.



Now we need to check our radio and DMX settings. This happens on the tiny dip switches on the back. They are small, and it is helpful to shine a flashlight diagonally across the switches to help see their position. Let's start with the DMX settings. Since the D4 Neo Dimmer is a four channel dimmer, we will use the DMX switches to set the starting DMX address. (BTW, by using RDM you can set the four output channels to any DMX address you choose, even non consecutive ones.)



Tip: Get the [ADL DMX Calculator](#) for your phone. It's free and is available for iPhone or Android. You'll always have it with you when you are hanging your shows. It does the dip switch math for you. This is a great tool! Here's what it looks like on my phone:



I set my DMX starting address to DMX 1.

Now I'll set my SHoW ID to 201 to match the default setting on my SHoW Baby. And I'll check my Curve to be sure it is set on LED mode rather than Linear or Non Dim. LED mode is switches 1 thru 8 all on. I'll set my Film and Video Mode to the default (switch 9 off, switch 10 on). See the [D4 Neo User's Manual](#) for more info on Curve and Film and Video mode. A great feature of our D4 Dimmer is that it has multiple modes to prevent flicker on camera, and that's the reason so many City Theatrical LED dimmers are found in television studios around the world.

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Now when I turn on my SHoW Baby, the DMX indicator light on the D4 Dimmer light will light solid, and the radio signal strength lights will come on, showing that I receiving DMX and am getting a strong radio signal. If the DMX indicator light does not come on on the D4 Dimmer, you are not receiving DMX, so check your SHoW ID to be sure you are matched to your transmitter.



The whole setup only took a few minutes. For more information see our [website](#). To learn more about wireless DMX, watch our [SHoW DMX webinars](#). There are links on each of our SHoW DMX web pages. Or call us or your local [City Theatrical dealer](#).