

DMX Connection and Wiring Chart

Let's Start at the beginning. This first picture is of the DMX adapter you get from DMX PRO SALES. It connects to your computer through a USB connection and looks like this:



The output is a 3 pin female DMX connector that mates to the DMX Input connector provided with your skull. It is Plug and play and does not require you to download or install any drivers. It will show up in your VSA settings under PORT as an ENTTEC-PRO followed by a series of numbers identifying the device. It is not an ENTTEC product, but VSA has only added the ENTTEC name in their list for USB DMX adapters, so it shows up as an ENTTEC-PRO. This is correct, so don't worry, and just select that option if it is not already selected. The USB DMX Adapter MUST be plugged into the computer BEFORE opening VSA, or all the ports will revert back to NONE since it didn't find the device when it started, and you may have to select it again for all your used ports. In most cases, just close the VSA program without saving it and open it again after connecting the USB DMX Adapter and the correct ports will show if they had been selected when you made the routine. The settings should look like this if you are using a single skull:

Settings							
Device Settings Timing Pgt Audio Video View Program							
Track	Name	Type	Port	Addr	+Value	-Value	Default
<input checked="" type="checkbox"/> 0	Jaw	BoC Servo	ENTTEC-PRO-6A1X4722	0	490	270	270
<input checked="" type="checkbox"/> 1	Rotate	BoC Servo	ENTTEC-PRO-6A1X4722	2	1190	310	750
<input checked="" type="checkbox"/> 2	Nod	BoC Servo	ENTTEC-PRO-6A1X4722	4	1000	555	750
<input checked="" type="checkbox"/> 3	Tilt	BoC Servo	ENTTEC-PRO-6A1X4722	6	1190	528	750
<input checked="" type="checkbox"/> 4	Eyes L/R	BoC Servo	ENTTEC-PRO-6A1X4722	8	1150	400	750
<input checked="" type="checkbox"/> 5	Eyes U/D	BoC Servo	ENTTEC-PRO-6A1X4722	10	1120	400	750
<input checked="" type="checkbox"/> 6	Eye Red	DMX Dimmer	ENTTEC-PRO-6A1X4722	24	255	0	0
<input checked="" type="checkbox"/> 7	Eye Green	DMX Dimmer	ENTTEC-PRO-6A1X4722	25	255	0	0
<input checked="" type="checkbox"/> 8	Eye Blue	DMX Dimmer	ENTTEC-PRO-6A1X4722	26	255	0	0
<input checked="" type="checkbox"/> 9	Eye Strobe	DMX Dimmer	ENTTEC-PRO-6A1X4722	27	255	0	0
<input checked="" type="checkbox"/> 10	Spot Red	DMX Dimmer	ENTTEC-PRO-6A1X4722	213	255	0	0
<input checked="" type="checkbox"/> 11	Spot Green	DMX Dimmer	ENTTEC-PRO-6A1X4722	214	255	0	0
<input checked="" type="checkbox"/> 12	Spot Blue	DMX Dimmer	ENTTEC-PRO-6A1X4722	215	255	0	0
<input checked="" type="checkbox"/> 13	Spot Strobe	DMX Dimmer	ENTTEC-PRO-6A1X4722	212	255	0	255
<input type="checkbox"/> 14	Device #14	DMX Dimmer	NONE	14	255	0	0

The next thing in the chain will be whatever length DMX cable you buy that reaches from where you set up your computer to the first DMX device in your chain. The length is totally up to you. It can be up to a few hundred feet if you want. Most people set their computers 20 to 25 feet away so they can be hidden, but with DMX, it's OK to run long lengths unlike the serial controllers where the signal degrades after a short distance.

Next, I'll show you how to wire your DMX cables that go into the skull, assuming that you bought the DIY kit. Your input to the skull will be a Male DMX Plug which will plug into the Female end of the DMX cable you purchased. The plug, which in this picture is the Front View of a Male DMX plug, will look like this:



Here is a diagram showing which pins are for what wires:



If you look straight down at that male DMX Plug, you can see that the three pins are numbered right in the casing. This is still looking at it from the front:



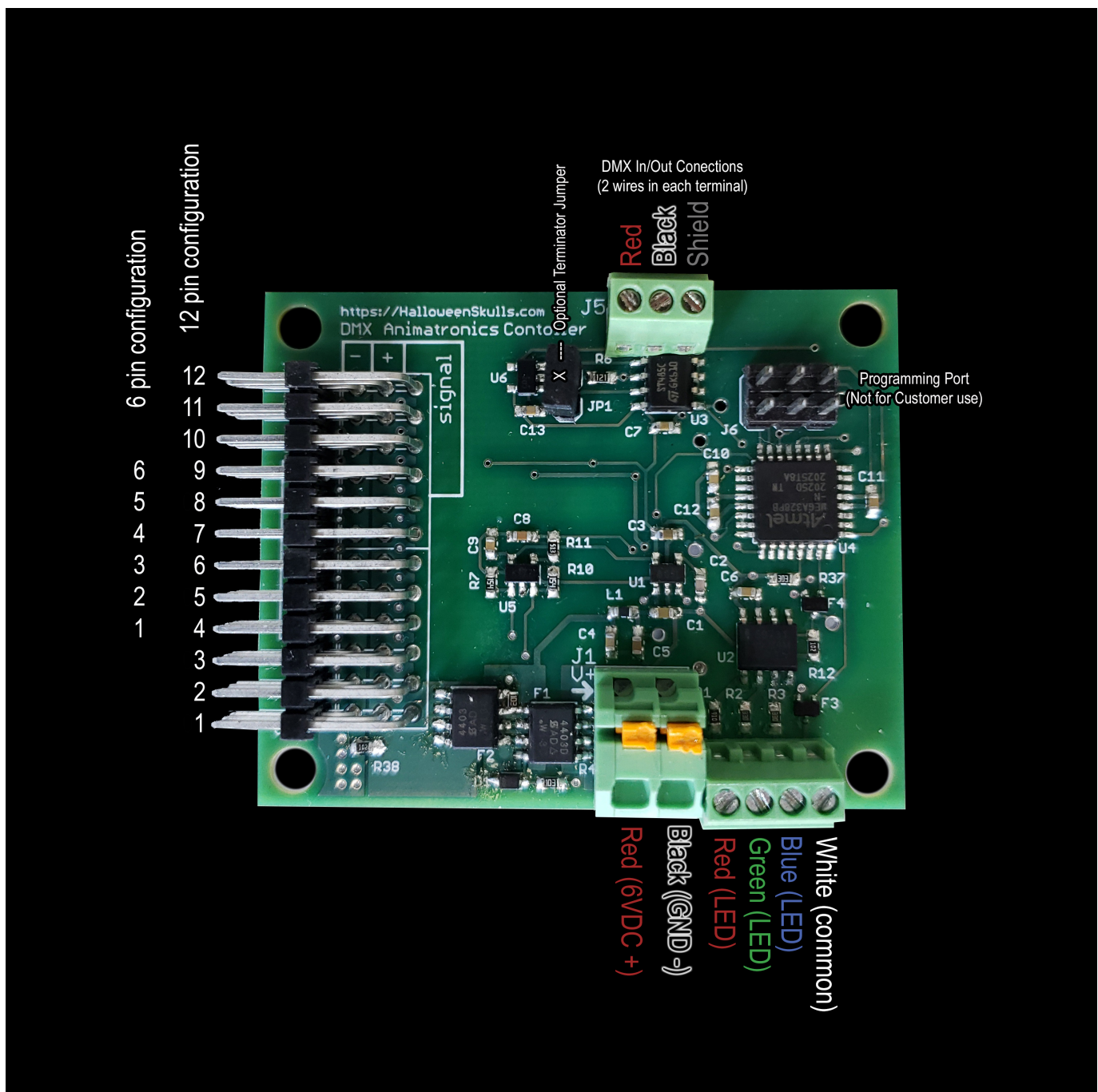
Here is that same Male DMX plug disassembled so that you can solder the wires to it:



Now, if you take that front part of the plug and stand it up so you're looking down at it from the back side, you will see the contacts that you need to solder to as shown in the next image. Before you solder to it slide your wire through the two other pieces from the right end of the image towards the left. The middle piece is designed to clamp down on the wire and act as a strain relief. Here is what the solder contacts look like:



You can see that the back side of the Male DMX Plug also has the pins numbered in the casing so you don't get confused with the mirror image pattern. The picture above represents the Male (Rear View) image in the DMX Wiring Standard - 3 Pin diagram a few images back. If you are using the Thin DMX Cable recommended to you in the Parts list, that wire contains a shield, which is the bare wires and foil that surrounds the two data wires, a red wire, and a black wire. Different cables from different companies may use different colors but as long as you mark down which color wire is the Data + wire and which is the Data -, you'll be fine. The shield is ALWAYS the bare wires and foil covering. If you have a red and black wire it makes sense to use the red wire for Data +, and the black wire for Data -. If you follow the wiring color code I just used, you would connect the shield to Pin 1 (The pin to the far right in the picture above), the Red wire (or Data +) would be soldered to the pin towards the bottom of the image below (or Pin 3), and the black wire (or Data -) would, of course be soldered to the remaining pin, which is Pin 2. You do not need to connect anything to the tab at the top of that image. The other end of that wire is supposed to be left just bare wires. Strip each wire so that there is a short length of bare wire showing and tin that wire with a soldering iron. Those wires will be connected to the Halloween Skulls Controller board shown below with an explanation of all it's connections. You can slide the center part of the plug (The part with the tabs for soldering) out of the casing for easier access to the solder points.



In the image above of the Halloween Skulls Custom DMX board, you will see the DMX connections at the top. The order that you connect the wires in is Red, Black, Shield. Connect both the input and output together in the same screw terminals. That is to say, the red wire from the input cable and the red wire from the output cable both go together in the same screw terminal labeled "Red". Do the same with all 3 wires. Just below and to the left of the terminal block where you connect your DMX input (and output if you have more than one DMX device) is a small jumper labeled "JP1". That jumper is a built-in terminator which is activated by using the jumper connector which is shown connected here in the picture. It can also be activated without the jumper by using our configuration software. If this skull is the only DMX device you have there is no need for a terminator at all. The jumper will come by default, unconnected, meaning that the board is NOT terminated. If you have more than one DMX device, you will need a terminator at the end of the daisy chain. This can be 2 or more skulls, or one skull and a couple DMX lights, or any combination of things. You can only have one terminator in any DMX chain, and it always goes on the output of the last device in the chain. If one of your Halloween Skulls 3 axis skulls is the last device in a DMX chain of more than 1 device, then you should connect this jumper on the board of that skull only, and you do not need an external terminator. If you use this jumper to terminate the chain in the wrong position, any devices in the chain after the one that you connected this jumper in will not work. The servo outputs are wired as follows:

Slot 1: Jaw servo
Slot 2: Rotate Servo
Slot 3: Nod Servo
Slot 4: Tilt Servo
Slot 5: Eye L/R Servo
Slot 6: Eye U/D Servo

The rest of the servo outputs are for future expansion and additional servos.

If you have only one skull, this is all the DMX wiring you need to do to make the skull work. If you plan to add a second skull to the daisy chain, you should buy a Female DMX jack and more thin DMX wire and make a second connection so that your next skull or other DMX device has a connector to plug into. The Female DMX connector is listed in your parts list and gets soldered in the same manner as the male counterpart that you saw in the images above. The holes for the pins will be in reverse order and will look like the last two examples in the DMX Wiring Standard – 3 Pin Diagram several images back. Below are pictures of the Female Connector that is in your Parts list. Here it is from the front (you can see the numbers identifying the holes for the pins from the male Plug:



Here is the jack disassembled in the same manner as we disassembled the Male plug:



And here is the solder tabs on the back side of the first part in the assembly (these, as you can see, are also numbered):



Again, the numbers are in the opposite position in the Female Jack as they are in the Male Plug, but you connect the same color wires to the same numbers as before. Again, you leave the other end of the cable with just short, bare wires and tin them. Then connect them to the DMX Board where it says DMX output at the bottom of the board diagram.

That is all you need to know about the DMX connections and wiring.