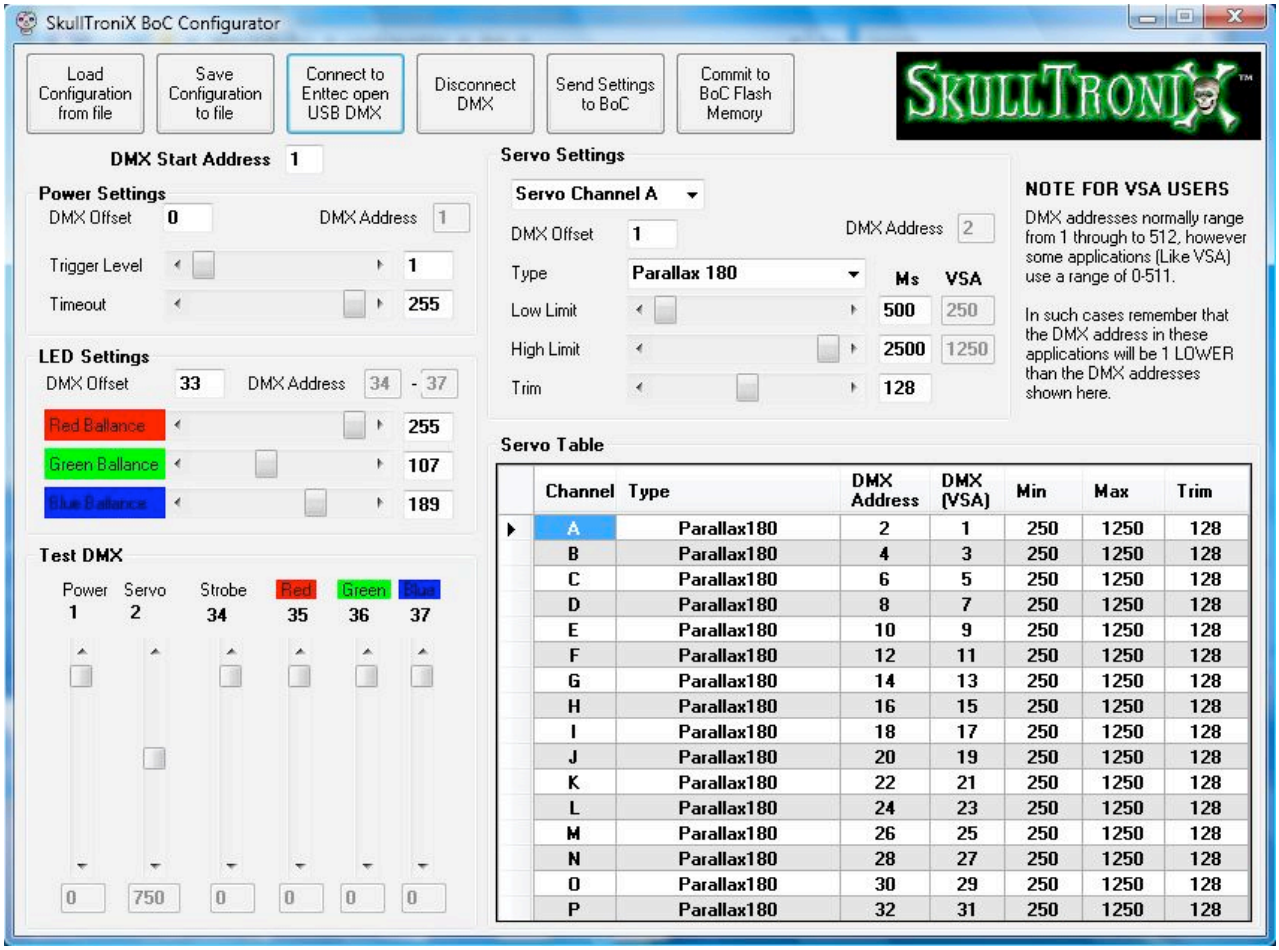
SkullTroniX Board Of Chuckie configuration tool

One of the key features of the BoC is that it's easy to configure the board over the DMX network.

- DMX address
- Upper and lower hard stop limits for servos
- Centre trim for servos
- Direction of servo
- Servo signal modes including
- Auto Power off timeout
- Auto Power off level
- White balance of LED

At time of writing the BoC configuration tool is only compatible with the Enttec USB Open DMX widget

Main interface



The interface is organized into several areas with each area controlling different functions and setting

The Power Settings LED settings and servo settings areas enable you to adjust the on board parameters that control the way the board functions.

The servo table summarises the settings for the 16 servo channels, and allows you to select which servo channel you want to edit in the Servo Settings panel.

The Test DMX panel works like a DMX control panel, once you have uploaded the settings to the BoC you can test them using the test panel, again the servo controlled by the servo slider can be selected from the servo table.

About settings

DMX Start Address, DMX offset

Each board has a DMX start address and each function on that board has a DMX offset, **NOTE the DMX address of each function is the Start Address + Offset.**

When assigning DMX addresses for the 16 servo channels, make sure that you allow 2 addresses per channel unless you are using the 8 bit mode, then you can assign only 1 address per servo.

Overlapping or duplication of addresses is possible, but should be done with care; otherwise some undesirable results can occur.

NOTE
Most DMX hardware and software use DMX addresses ranging from 1 through to 512, however, some, and this includes VSA use DMX addresses ranging from 0 to 511. This discrepancy can make assigning DMX addresses confusing.

Power Settings

Power control trigger level. This sets the threshold value for the power control. If the DMX input is equal to or above this value then the servos will not receive pulses, and will power themselves down.

DMX timeout. This tells how long to maintain servo pulses after a loss of DMX data. It is measured in 1/50 seconds. So a value of 100 would be two seconds. A value of 255 has the special meaning of never timing out.

LED Settings

Red balance. This will adjust the overall red color level with respect to the green and blue outputs. It is used to achieve a white level when all the outputs are the same.

Green balance. This will adjust the overall green color level with respect to the red and blue outputs. It is used to achieve a white level when all the outputs are the same.

Blue balance. This will adjust the overall blue color level with respect to the red and green outputs. It is used to achieve a white level when all the outputs are the same.

Servo Settings

To adjust the settings for any one of the 16 servo channels you first need to select which channel you need to adjust, this can be done either by clicking on the servo table, or by selecting the channel from the drop down box. The dropdown box also indicates which servo channel is the currently active channel.

Type

This code defines how servo A will react to the incoming DMX data. There are several options. The first 6 modes are 16 bit modes that will take two DMX slots in MSB, LSB order. The last mode is an 8-bit mode that takes one DMX slot. The following modes are supported:

Raw milliseconds. This takes the 16 bits value as the pulse width directly. Legal ranges are from 500 to 2500 ms.

Reverse raw millisecond. The pulse width will be 3000-value. So the incoming 16-bit value will be subtracted from 3000. Legal ranges are again 500 to 2500 ms. This is the same as option 0, but it reverses the direction of the servo.

180 degree Parallax mode. This takes the 16-bit value and multiplies it by two. Legal values range from 250 to 1250

Reverse 180 degree Parallax mode. This is 3000-(value*2). It is the same as mode 2, but the servo is reversed. Legal values range from 250 to 1250.

90 degree Parallax mode. This takes the 16-bit value and adds 750. Legal values range from 250 to 1250

Reverse 90 degree Parallax mode. This is 2250-value. It is the same as mode 4, but the servo is reversed. Legal values range from 250 to 1250.

8 bit mode. This will scale the pulse width between the low and high limits that are specified in the limit parameters. A DMX value of zero will send a pulse equal to the lower limit, and 255 will send a pulse equal to the high limit. This can allow very fine control if the two limits are close to each other. Interesting, if the high limit has a pulse width that is lower than the low limit, then it still works, but the servo action is reversed.

Low limit. This sets the low limit for the pulse width for servo A. Legal values for this parameter are 500 through 2500.

High Limit. This sets the high limit for the pulse width for servo A. Legal values for this parameter are 500 through 2500.

Trim. This adjusts the pulse width in milliseconds. The range is 0-255. A value of 128 is the centre and makes no adjustments. Lower values will make the pulse width shorter, higher values will make it longer.

Note on limits and trim

Servos work on timed pulses, the length of the pulse tells the servo which position you desire. The limits and trim are measured in pulse length, however for convenience they are converted into the units for the servo you are using and displayed in these units as well as the pulse length.

Connecting

1. Connect the BoC to the Enttec Open USB Widget, its best to remove all other DMX devices and only connect the BoC before doing this, and tu use a DMX termination resistor

2. Connect the Enttec unit to the computers USB port and wait for the computer to complete the configuration.

3. Start the configurator

4. Click on the button to connect to the Enttec device and look for the confirmation message.

Once the DMX is connected the test panel will be live and able to send DMX commands, however you need to ensure that the configuration of the software matches the board, otherwise you will get unusual results, and if there is a prop connected to the BoC potentially damage a your servos.#

It is not possible to confirm the settings on your board, the best way to make sure the settings match is to store the settings on your computer and load them up, or send new settings to the board.

To send settings first check that the settings on the screen match your requirements then click the ‘Send Settings to BoC’ button

NOTE There is a difference between sending settings to the BoC and committing the settings to flash memory, settings that are sent will be lost when the BoC loses power, this feature will allow you to play with the settings and not worry about losing the original settings, however, once you commit the settings to memory then they are remembered permanently or until they are overwritten.