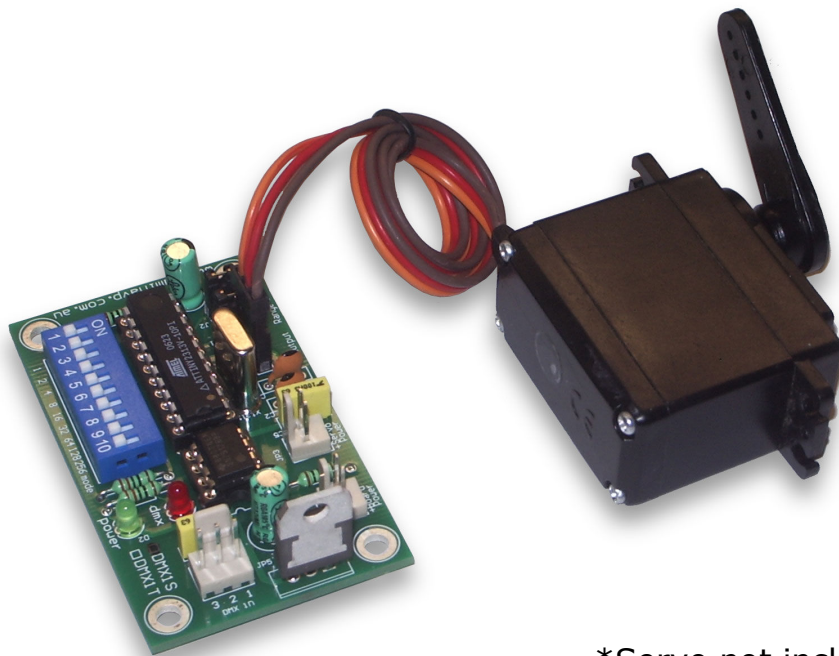


# DMX01S

## *DMX512 – single channel servo driver*

*User's Manual*

*Rev 1.0*



\*Servo not included

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## **APPLICATION**

The DMX01S provides a compact and simple means for the conversion of a DMX512 stream to drive a standard RC-Servo. The DMX01S provides for two modes of operation:

1. Fail-safe mode: If loss of DMX512 is detected, all outputs will fail to their 'off state', until DMX512 is restored.
2. Fail-hold mode: If loss of DMX512 is detected, all outputs will hold their previous state.

If being used as part of a laser show setup, it may be desirable to use the DMX01S in Fail-safe mode. The detection window for loss of DMX512 is approximately 150ms. This was set at 150ms to allow for a wider variety of DMX512 controllers to be used. If your application requires a shorter detection window, we can re-flash the microprocessor to provide for this.

The DMX01S ships to recognize a start code of '0' as being valid. If you wish to use this device with a start code of something other than '0', please advise us as we can also re-flash the microprocessor to provide for this.

## CONNECTIONS

The DMX01S has 4 headers for interfacing to your equipment. These are as follows:

DMX512 input

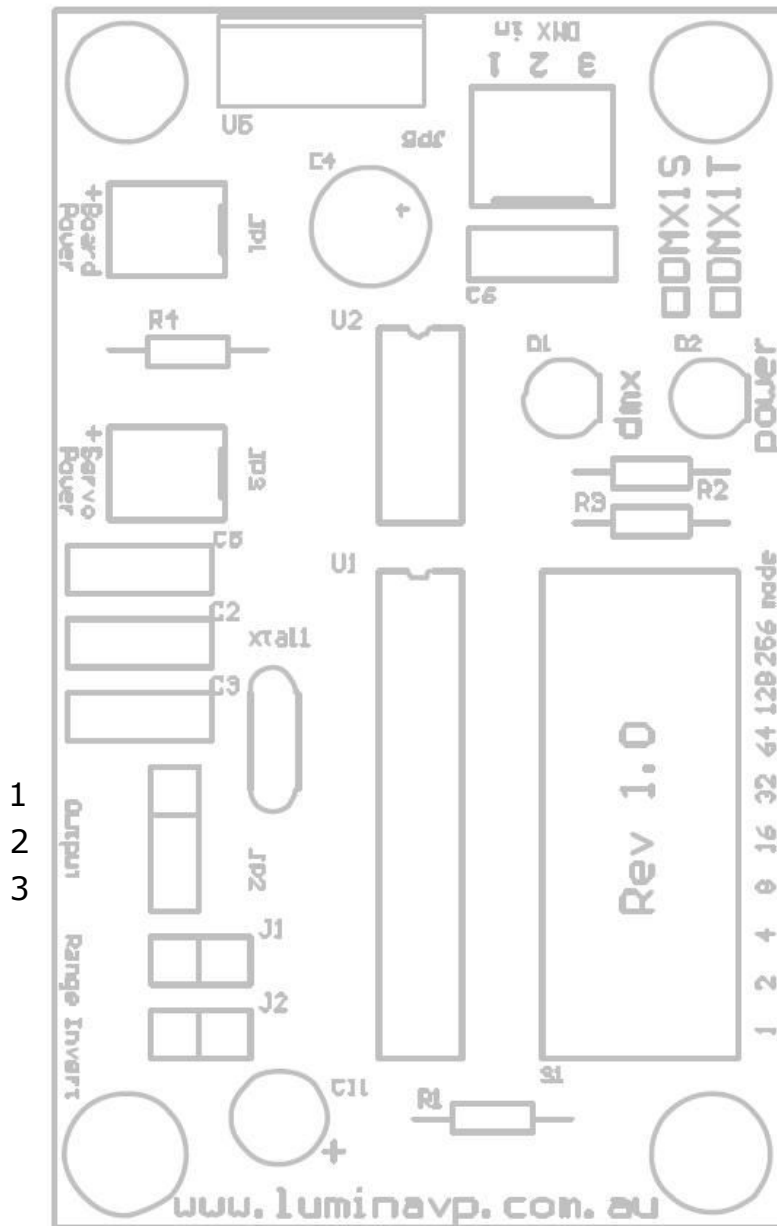
Servo board  
power input 7-  
15vdc

Servo power  
input 5-7vdc

Servo output  
jack

Range jumper

Invert jumper



### ***Power Input:***

The DMX01S has 2 power input sockets. The servo board power input is to power the microprocessor, and the servo power input supplies power to the servo itself. The pin-out of both power sockets is the same, as listed below. By having a separate connector for servo power, the servos travel speed can be varied, by servo voltage.

**Pin 1:** Ground

**Pin 2:** +ve (marked with a (+) on the board)

### ***DMX512 In***

The DMX01S receives DMX512 via this header. It is wired as follows:

**Pin 1:** Ground

**Pin 2:** Cold (Signal -ve)

**Pin 3:** Hot (Signal +ve)

This connector shares the same pin out as the DMX512 jack for easy reference.

### ***Servo output:***

The DMX01S has the one output socket to suit RC-Servos (for driving more servos, please see our DMX08S channel board)

This board outputs a train of 1-2ms pulses at an update rate of 20ms. If a different pulse width is required, the DMX08S would be a good choice, or we can compile a custom firmware for this board. The output is wired as follows.

Pin numbers are listed on the diagram on the previous page.

**Pin 1:** Ground

**Pin 2:** Servo power (+)

**Pin 3:** Servo control signal

Standard servo pin-out is as follows: White = signal, Red = positive, Black = negative. There can be variations on this, so it is suggested you consult the instructions for the servo you have.

## **INDICATORS**

The DMX01S provides two LED indicators that highlight normal operation:

*Green (Board power):* This LED lights to indicate the board has power.

*Red (DMX State):* This LED indicates the state of the DMX input.

- With no DMX present, the LED flashes about once per second.
- When the board is receiving valid DMX packets, the LED flashes at a much faster rate, many times per second.
- The LED will stay on whilst data is updating on channels within the range set by the DIP switches

If a valid DMX512 stream is not sensed after a period of  $\sim 150\text{ms}$ , the LED will revert to a slow 1 second flash, and the device will fail to the mode set by DIP Switch 10.

## **DIP SWITCHES/JUMPERS**

### ***Channel & Fail mode Select***

10 DIP switches are provided to adjust settings. Switches 1 through 9 are used to set the offset/starting DMX512 address. Switch 10 is used to set the fail-mode. With the switch set to the on position, the board will be in fail safe mode, and loss of DMX will drop all outputs to the off state.

Note: Switch 1 has no effect unless it is used in conjunction with other switches. Ie, if switches 2 through 9 are off, the DMX01S will receive on channel 1 regardless of the position of switch 1.

### ***Range Jumper***

If not installed, servo pulse width is 1-2ms. With the jumper installed, servo range is 1-1.2ms, and shrinking the range of travel.

### ***Invert Jumper***

The invert jumper effectively reverses the servo.. There is no reason why a switch couldn't be wired to these pins forming a manual control.