Concert/Disco – lighting and sound

I noticed last year that Train Tech were selling smart LED's programmed to be used in several projects from emergency lighting, disco/stage lighting. Although effective the cost was high at £15.00 plus £4.00 P+P

light ref SL – Party Disco Light

http://www.train-tech.com/index.php/lighting/smart-lights

The Flooring can be downloaded free from their website and then printed and cut to size. The floor tiles create the illusion of a moving floor or wall when light changes colour. Essential for the project. Here is the link
http://ccgi.dcpmicro.plus.com/traintech/pdf_manuals/Disco_Floor_Example.pdf

I started to look around to see if I could find something that would create a similar effect, but cheaper. I came across RGB LED's and random flash RGB LED's. Both these LED's change from red to green to blue and the latter adds in a random flash.
 The RGB LED's are available from Railwayscenics at a fraction of the price (50 pence for led and about 6 pence for a resistor) and I think they are every bit as effective for disco or stage lighting.

3mm RGB Random Change Flash Water Clear LED Resistor Rqd
https://www.railwayscenics.com/3mm-led-lights-c-20_25_60.html?page=2&sort=5a

I decided to build a stage from balsa wood and paint it black. I had some pieces if canvas, the type used for painting and used this to cover the outside of the stage
To mount the led's I used a plastic screw cap and drilled a hole and then pushed the led into place from the rear. I painted the screw cap black and part of the led to reduce stray light.
Depending on the supply voltage used a resistor needs to be connected to the LED. I used a potentiometer with one LED which enabled the LED's to be out of sync and flash differently.

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A small piece of stripboard was used together with JST pins and sockets to connect resistors, LED's, power and speaker. I used a piece of alarm cable (4 core) which meant four wires from the stripboard to enable external connection for power and sound.

Photo of underside of stage roof
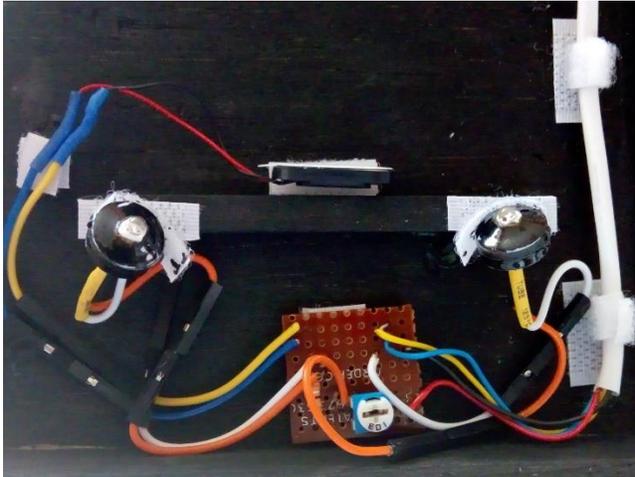
Stage construction

Originally, I considered constructing the staging from plastic web truss strips, but this was going to be expensive so opted to used balsa wood, painted silver and then used a marker pen.

I also used a piece of metal tubing at the rear of the stage to hide the cable and all wiring and components were fitted to the roof.

The band figures were the most expensive item purchased online at a cost of around £15.00

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Adding Sound

For the sound I used a DF mp3 module purchased at a MERG meeting. I had the option of using a memory card or USB with downloaded music.

DF mp3 module
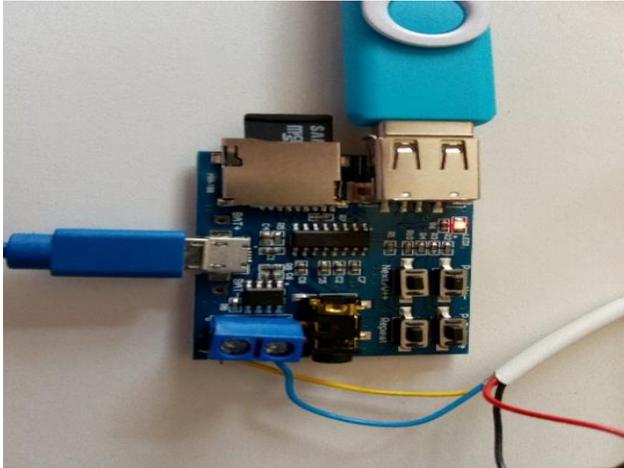
Power Supply

I opted for a switched battery box with 2.1mm connector plug which uses x4 AA size batteries, available from Ketonic. Cost £1.50 and 2.1mm panel socket £0.60 which I used for the lighting.

For the sound module which runs from a 5volt supply I used a power bank purchased from Poundland at a cost of £2.00

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