

CIRCUIT & DESIGN IDEAS

We invite readers to submit circuit ideas and solutions to design problems. Explain briefly but thoroughly the circuit's operating principle and purpose. Sources of material must be acknowledged and will be paid for if used. As these items have not necessarily been tested in our laboratory, responsibility cannot be accepted.

Conducted by Ian Pogson

Bi-directional LED chaser

A 555 timer IC is connected as an astable multivibrator whose output frequency is adjustable with the 100k potentiometer. The output pulses from the 555 are fed to a 4516 IC, which is a programmable binary up/down counter. The logic level on pin 10 governs the count direction and can be changed with the switch.

The 4516 has four outputs (Q4, Q3, Q2 and Q1) which can yield 16 unique states and these are fed to the D, C, B, A inputs of a 4514, a four-to-16 decoder, and cause each of its outputs (from 0 to 15) to yield, in turn, a unique high state. This will give the impression that the LEDs that are connected to these outputs are "moving".

It may be seen that the LEDs are driven directly from the 4514 IC, the amount of source current available being sufficient to drive the LEDs to adequate brightness.

The 100k potentiometer should be linear and it can vary the output frequency from 30Hz to 1.4Hz. The LEDs may be arranged in a straight line, a square, a circle, or any other desired configuration.

Finally, a suggested use for this device, is to fit it to a T-shirt to provide psychedelic lighting. The battery for the power supply may be fixed to a belt, or any other position which may be considered convenient.

(By Mr J. Petroulias, 30 Whitehorse Road, Blackburn, Vic 3130.)

