PIC LCD frequency counter

This project is just a pcb for a variant of the "**Weeder Frequency Counter**" published at:
http://www.piclist.com/techref/piclist/weedfreq.htm

On that web site is a link to a modified version of the ASM software by Barry Smith:
http://www.piclist.com/techref/piclist/weedfreq/4bitlcdusart.htm

Barry's software version allows either a PIC16f84 or a PIC16f628 to be used with the LCD
in 4 bit mode, which simplifies the pcb layout slightly and provides the option of a serial
data output if using the 16f628 chip.

As there is no link to a circuit or pcb layout for Barry's version, I have made my own pcb as
shown here.
It is a single sided board with 4 jumper wire links and is small enough to fit behind the lcd
module if you use the same type as mine. (single row connector at top of the module)
I did not bother with any preamp transistors as I will only be using it to show the frequency
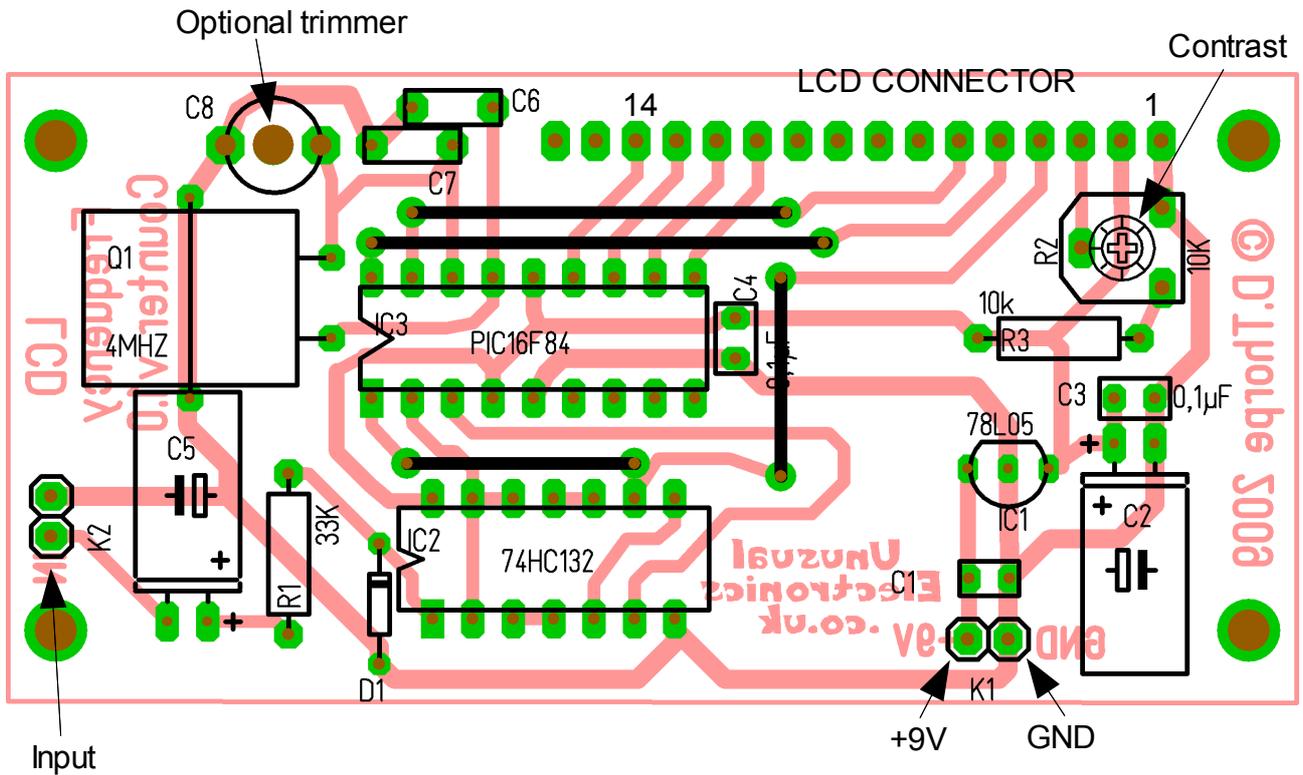of my old valve-based Heathkit model AO-1U Sine-Square audio generator.

Circuit
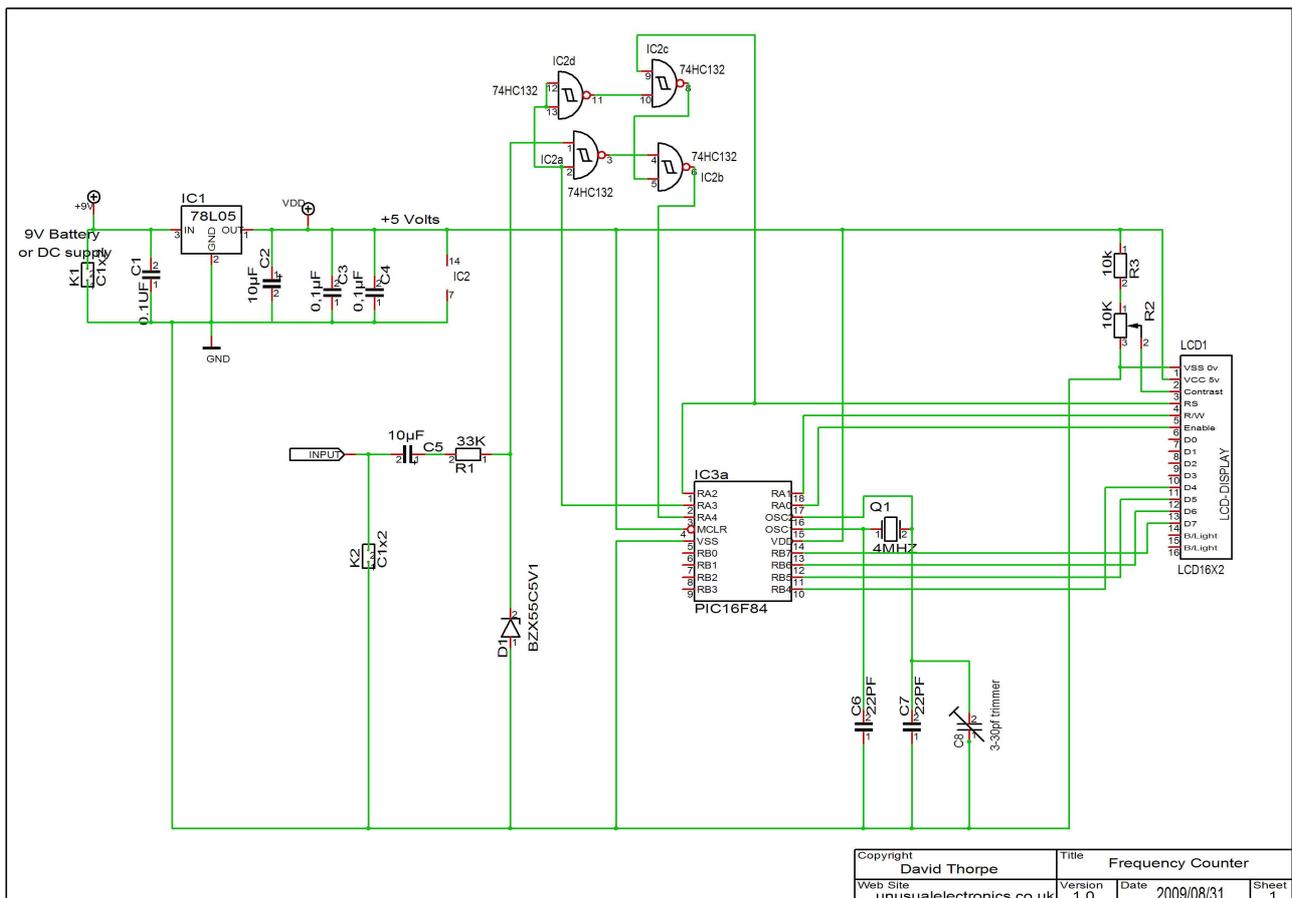
Reduce value of C7 to 10pF if using Trimmer (C8)
I used a 16x2 line LCD module (although only a 16x1 line type is needed)
A PIC16F628 can be substituted for the 16F84 if you wish.

Board layout

Optional trimmer

Contrast

LCD CONNECTOR

C8

C6

14

1

C7

Controller

Q1

4MHZ

IC3

PIC16F84

R2

10K

10k

R3

C5

C4

C3

0,1µF

78L05

IC1

C2

R1

33K

IC2

74HC132

Unusual
Electronics
.co.uk

C1

K2

Input

D1

K1

+9V

GND

LCD

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The pcb is slightly larger than an lcd module, which can be attached directly to the under-side of the board if it's pinout is in exactly the same position as mine.

C8 is a calibration trimmer capacitor if you need better accuracy. You may have to reduce the value of C7 if you use it.
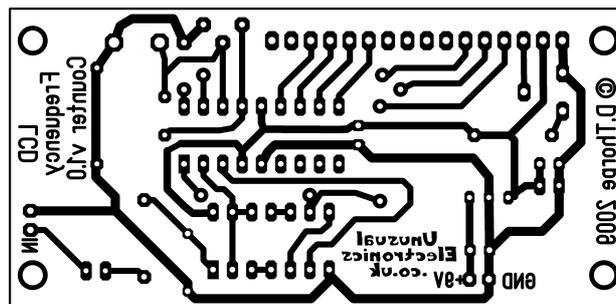
Power consumption is about 6mA (with no lcd backlight), it can be powered from a 9 volt battery.

PCB Track Layout

The circuit can be built on this single sided pcb layout.

PCB is shown actual size: 81 x 39.77 mm and is ready for printing, using the toner transfer method.

   Print this page actual size (ensure that print option for "Page Scaling" is set to "None")

Disclaimer

This project is provided on an"AS-IS" basis WITHOUT WARRENTY of any kind, either express or implied.
I shall NOT BE LIABLE in any way to you or to any other person, firm or corporation whatsoever for any loss, liability, damage (whether direct or consequential), personal injury or expense of any nature whatsoever arising from inaccuracies, errors in, or the use or inability to use the hardware and/or software here.

 D. Thorpe   (www.unusualelectronics.co.uk)