

25 Tone CTCSS Decode Display Kit

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CTCSS decoder/display kit with 2x8 line LCD display.

Our CTCSS decoder/display kit can decode and display the 25 CTCSS tones used listed below.

Rapid decode in just a few cycles of the incoming CTCSS tone, therefore the kit can rapidly display the CTCSS tone in use on a radio system.

It also has a rapid acting tone valid output which can be programmed to signal the presence of one tone in particular.

Connecting a button or link between the 'set tone' input pin and 0V allows the tone valid function to be programmed. Press the button or make the link, send the decoder the desired CTCSS tone from another radio or a function generator and then release the button or break the link while the tone is present, that tone has now been stored and it's presence will be indicated on the tone valid output pin.

There is also a delayed version of the tone valid output too, this output reacts rapidly to the detection of the programmed tone but has a 0.5 second drop out delay.

These outputs are 0 to 5V and should not be loaded more than 5mA. Please see the circuit diagram for pin locations.

The 'contrast' preset should be adjusted for best display contrast between text and back ground; there will be nothing on the display over a large amount of the preset's range. The 'input sensitivity' preset should be adjusted to just past the detection point on a good signal.

Complete kit of parts including pre-programmed PIC micro, gold plated PCB, LCD display, nuts bolts and spacers and back light resistor.

Runs from 8 to 16V DC at a few mA.

This kit is supplied with a backlit display, the backlight requires 4.05V at up to 60mA (e.g. 13.8V via the 220 ohm ½ watt resistor included in the kit). The backlight is not connected in any way to the decoder PCB and need not be used.

Please make sure you fit the pins for the display connection on the back of the PCB as shown in the pictures.



Tone Set:-

| | |
|--------|---------|
| 67Hz | 103.5Hz |
| 69.3Hz | 107.2Hz |
| 71.9Hz | 110.9Hz |
| 74.4Hz | 114.8Hz |
| 77Hz | 118.8Hz |
| 79.7Hz | 123Hz |
| 82.5Hz | 127.3Hz |
| 85.4Hz | 131.8Hz |
| 88.5Hz | 136.5Hz |
| 91.5Hz | 141.3Hz |
| 94.8Hz | 146.2Hz |
| 97.4Hz | 151.4Hz |
| 100Hz | |

For best performance the decoder needs to be fed with un-filtered RX audio, so that sub-audio frequencies are not removed before the decoder.

On the back of many Amateur Radio transceivers there is a 6 pin Packet Radio (TNC) connector, this often has an RX audio output for use with a 9600 baud TNC and is usually un-filtered.

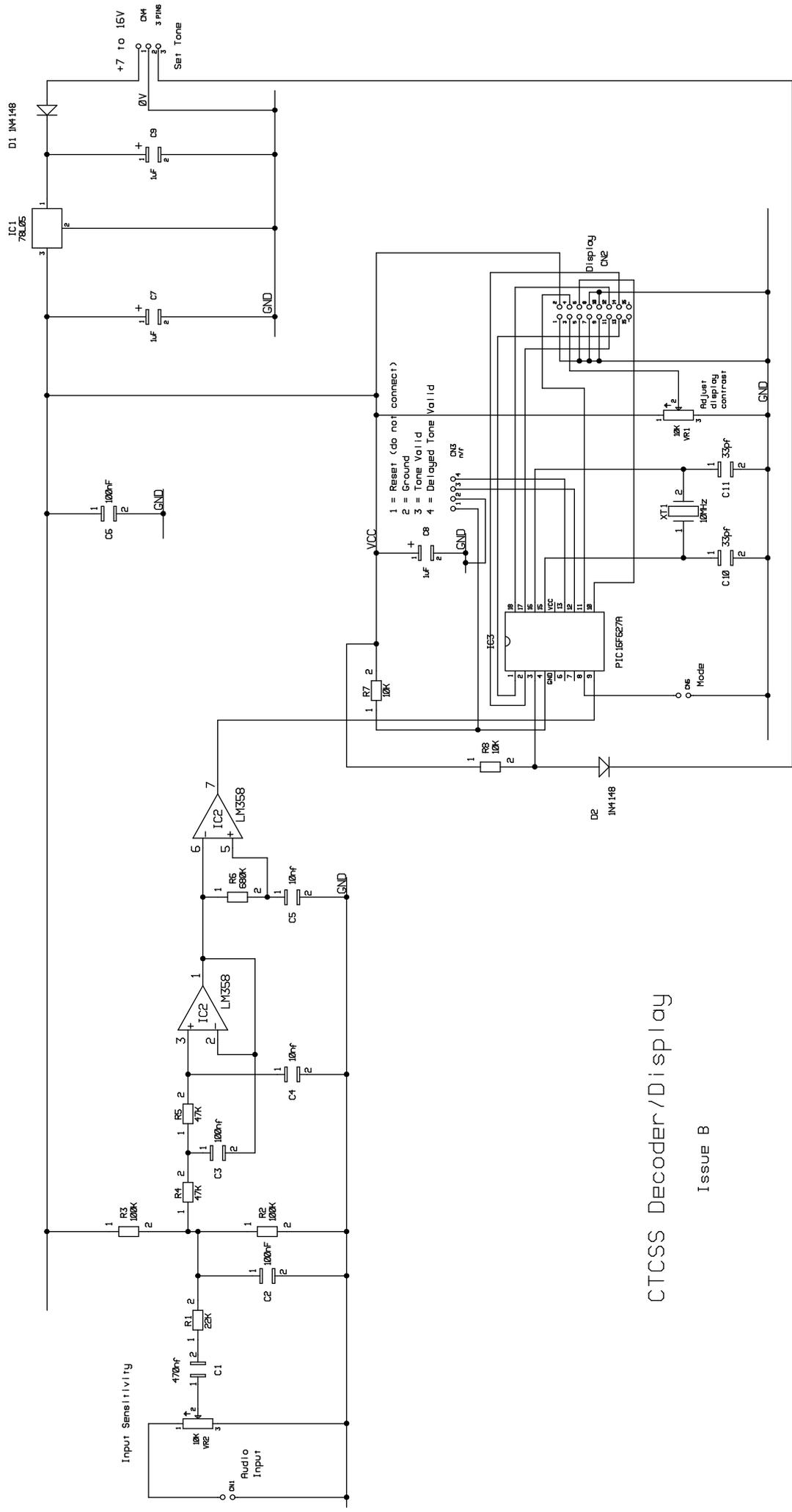
We can offer a cable with the 6 pin plug already fitted.

CTCSS Display Parts List

| | |
|----------|----------------------------------|
| IC1 | 78L05 |
| IC2 | LM358A |
| IC3 | PIC16F627A (programmed) |
| D1, 2 | 1N4148 |
| XT1 | 10MHz crystal |
| R1 | 22K |
| R2, 3 | 100K |
| R4, 5 | 47K |
| R6 | 680K |
| R7, 8 | 10K |
| VR1, 2 | 10K variable |
| C1 | 470nF (marked 474) |
| C2, 3, 6 | 100nF (marked 104) |
| C4, 5 | 10nF (marked 103) |
| C7, 8, 9 | 1uF observe polarity |
| C10, 11 | 33pf |
| CN1 | 2 pins |
| CN2 | 7+7 pins (supplied as 3+3 & 4+4) |
| CN3 | 4 pins |
| CN4 | 3 pins |
| CN5 | Not Fitted |

Also supplied:-

CTCSS display PCB Issue B
Crystal insulator pad
3+3 & 4+4 sockets for display
LCD display
4 x nuts, bolts and spacers
220R ½ watt resistor for backlight



CTCSS Decoder/Display

ISSUE B