

LCD module demonstration circuit

Background

Alpha numeric displays are often seen for sale at rallies and car boot 's far below their commercial value but still don't sell; its really not surprising as many don't know what all the pins do or how to drive them.

All the alphanumeric (and graphic) displays require an intelligent driver; unless you are into micro programming there isn't any option but to use an existing controller and program. It can be very difficult for a newbie to generate a program to drive a display; this demonstration circuit and free code will give a “head start”.

What does it do?

A short program has been written for a low cost PIC device (PIC16F818) which has two functions; SWR meter and frequency counter. The SWR is displayed on the top line with frequency underneath, although logically they would come from the same signal source SWR and frequency count could come from different places as they enter the chip on different pins.

SWR meter

Accuracy is dependent on the return loss bridge used, various bridge designs will work the one used on the demonstrator was acquired from www.kitsandparts.com – note that there is an error on the PCB contained in this kit as the outputs are swapped over! Another possible bridge circuits can be found in the test equipment section of the RSGB “Radio communication handbook”. Whatever circuit is used for the software to work correctly the output should be potted down to 5V at full scale.

Note the display will show “No RF” when there isn't any or at very low levels, without this the code will try to divide by zero which gives silly readings! The frequency limits are defined by the return loss bridge used.

Frequency counter

This has a gate time of 200mS so the count resolution is 5Hz, the schematic doesn't show any frequency counter calibration but this can be made by replacing C4 with a 33pF fixed capacitor and placing a 60pF trimmer in parallel. The micro should count to 50MHz easily – I've had them count up to 100MHz which is way above their specification.

Further development

The demonstration circuit and program is only intended to “get you going”, if you want to make changes to the code then a programmer will be needed, these can be purchased from Ebay or if you have a serial port why not make your own. I use Winpic software available from www.qsl.net/dl4yhf , within the help file there are several designs for simple programmers.

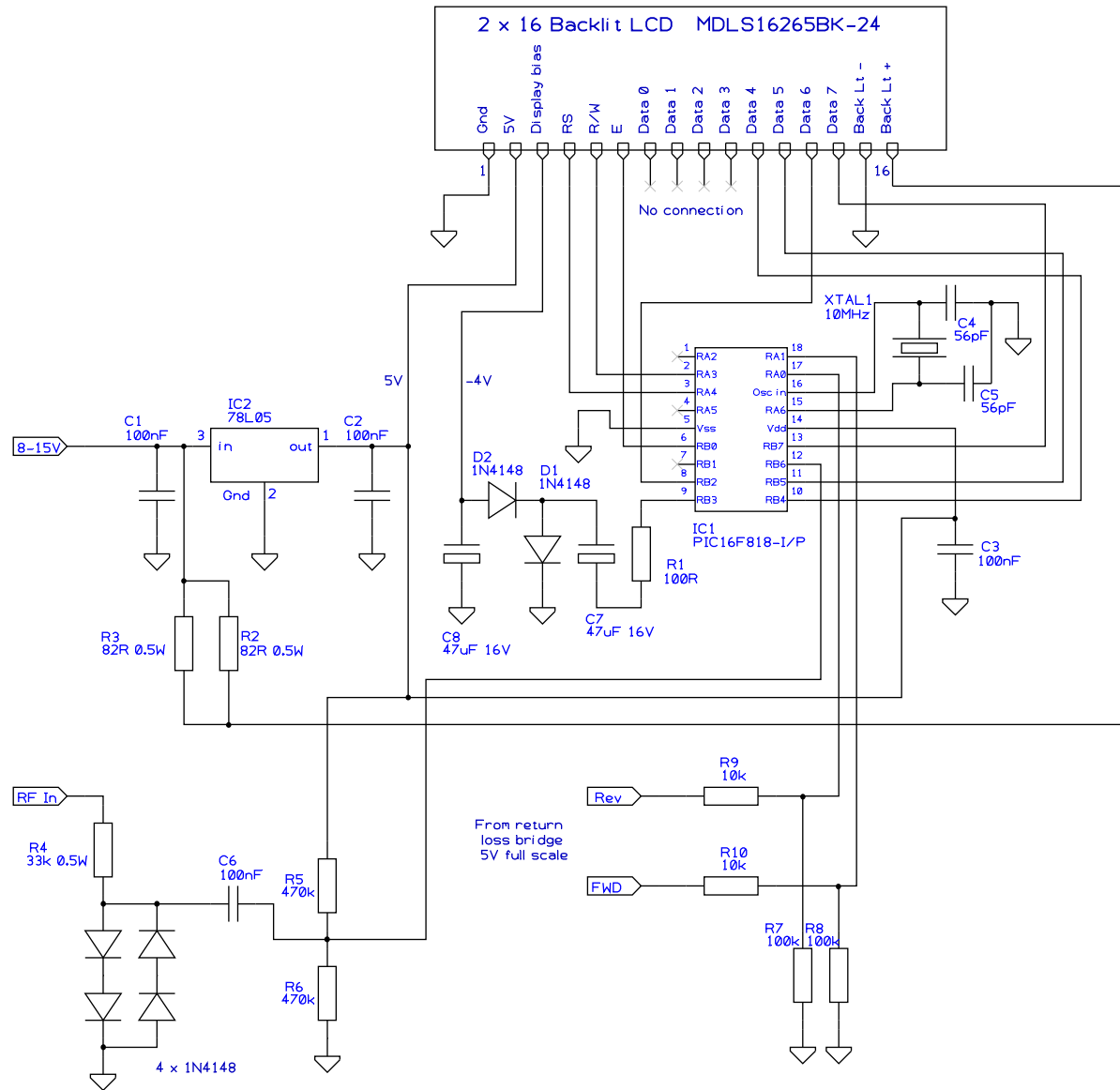
Links

PIC16F818 data sheet – www.microchip.com

LCD demo software – myweb.tiscali.co.uk/radiokits/LCD_Demo/

Returnloss bridge kit - <http://www.kitsandparts.com/bridge.php>

PIC programmer software - www.qsl.net/dl4yhf



For more information goto
myweb.tiscali.co.uk/radiokits/LCD_Demo

G6ALU
MDLS16265 SWR / Frequency meter demo circuit