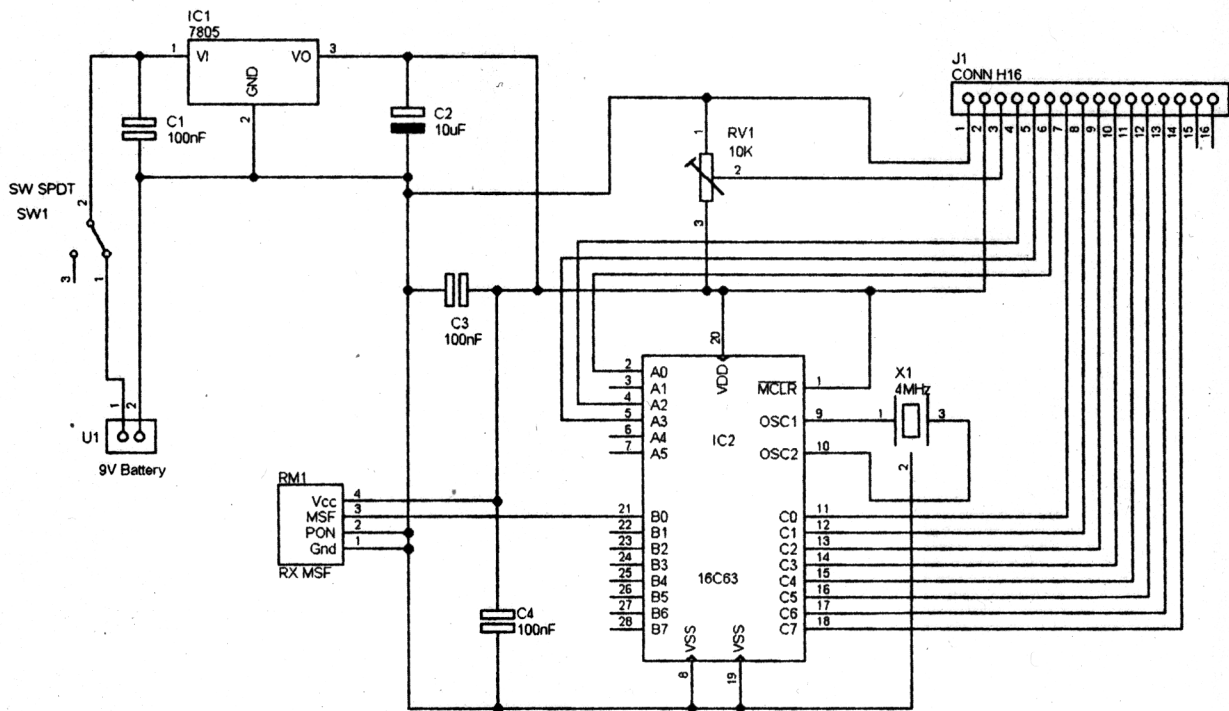


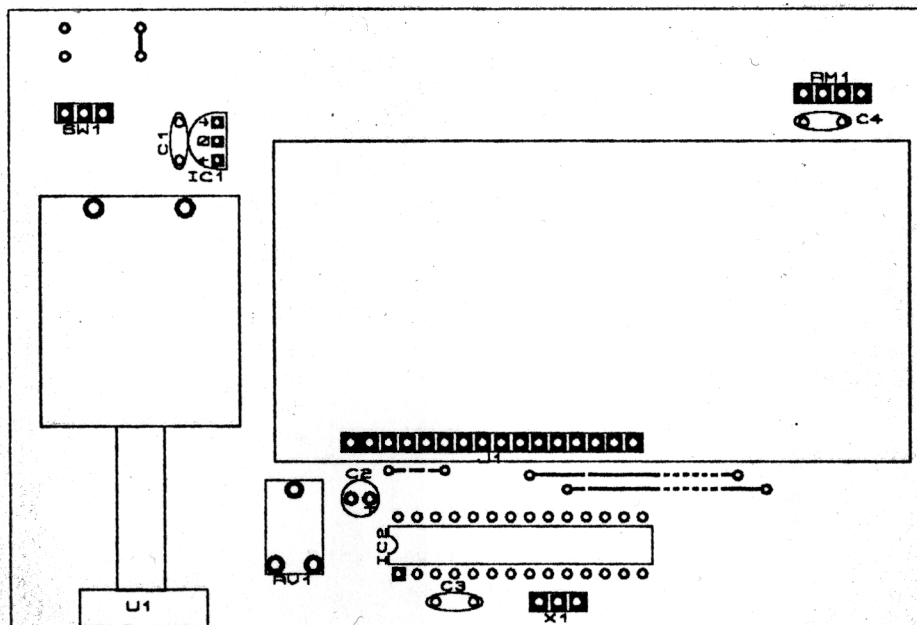
apPICation's

AP8 – Rugby MSF Receiver Farnell Order code 120-133

Circuit Diagram



Board Layout



Operation

The MSF receiver picks up a signal transmitted by Rugby, decodes the time information and displays the time on the LCD display. The transmitter is shut down at regular intervals for maintenance and these times together with other information on the MSF signal format are published by the National Physics Laboratory who control the time standard (0181 943 6445).

Performance is influenced by the both geographical position and electrical interference.

The software is self explanatory and should not be difficult to follow. Modifications to the code could be to add an external clock chip such a Dallas type which could keep a time running when the transmitter is off the air or use a 32KHz watch crystal on Timer 2 of the PIC.

Assembly

Insert the components and links as shown on the previous page, ensuring the PIC is correctly inserted. Attach the aerial coil with hot melt glue or adhesive pads and connect the wires to LP5 and 6 on the EM2S receiver. Use the pin connector strip for both receiver and LCD display. Observe static handling precautions when assembling the project. Check the board for solder bridges and dry joints before applying power. Adjust the contrast control (RV1) for the best viewing angle.

Moving on from here

If you wish to learn more about the PIC, there are a number of books on the subject which will assist.

Beginners Guide to the PIC	489-359
PIC Cookbook Vol 1	654-991
PIC Cookbook Vol 2	790-606

The minimum hardware needed to get started is the PIC Start Plus programmer (704-740) which is supplied with its own development environment – MPLAB. From there you could branch out to an ICEPIC In Circuit Emulator which speeds up development time. The software on the disk is in a text format which can be printed from any wordprocessor package or DOS EDIT.