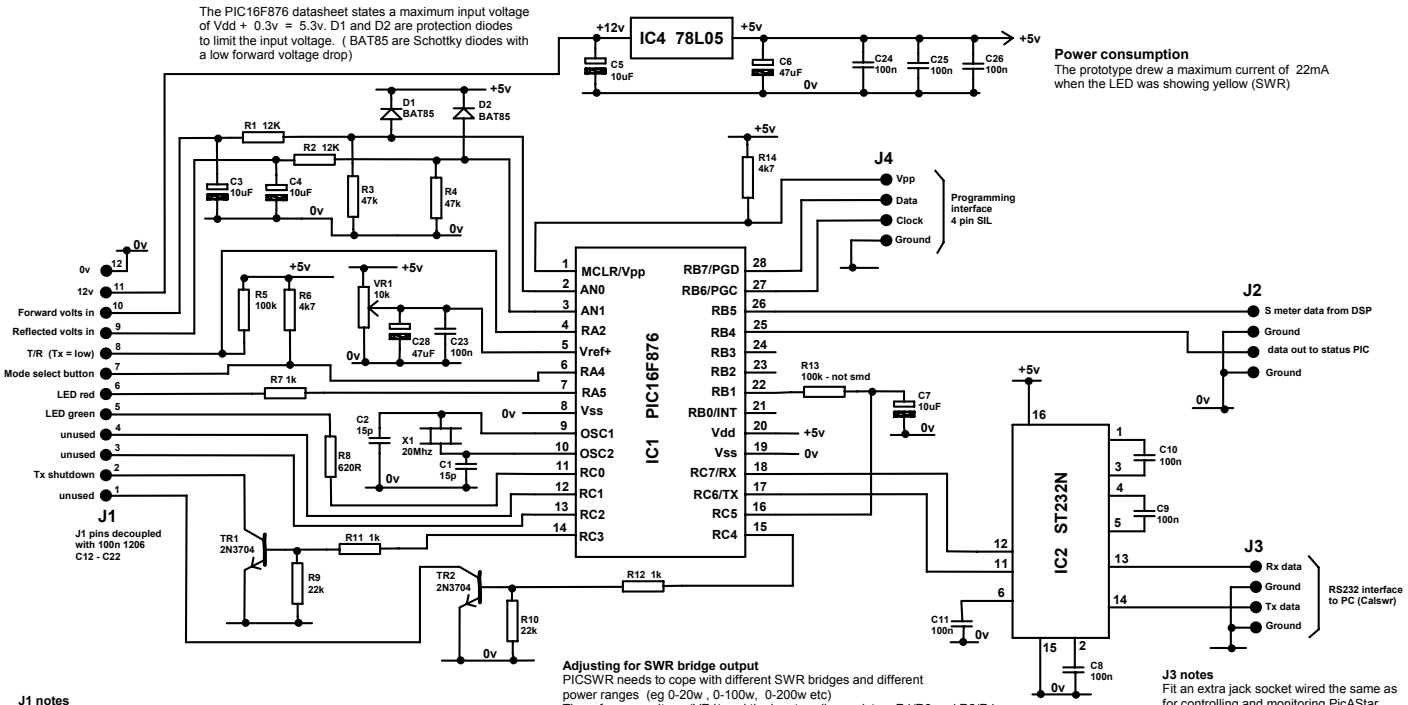

Power consumption
The prototype drew a maximum current of 22mA when the LED was showing yellow (SWR)

J1 notes
T/R input is PicAStar's DSP module generated T/R line

The LED is a tricolour low current led with common to ground.
- the lower value of the green series resistor gives a better yellow when both red and green are illuminated.

Tx shutdown (active low) can be used to shut down the PA on prolonged reflected The power level is determined in CALSWR on the PC and at this level C7 charges though R13 and eventually switches input RC5 which is a Schmitt trigger input. (The default values of 100k and 10uF give shutdown after 8sec)

Adjusting for SWR bridge output
PICSWR needs to cope with different SWR bridges and different power ranges (eg 0-20w , 0-100w, 0-200w etc)
The reference voltage (VR1) and the input scaling resistors R1/R3 and R2/R4 must be set before calibrating with CALSWR on the PC.
The PIC6F876 ADC has output range 0 to 1023 for an input voltage swing of 0 to Vref.
If your maximum input voltage exceeds 5 volts then set VR1 to give Vref = 4.8v and change R1/R3 and R2/R4 to bring the maximum AN0/AN1 input voltage to just below Vref. (This is the case with the shown default values which I use with my 20w Chris Honey PA. I set 2 watts per LED in CALSWR. The full scale power of 24 watts results in about 5.8 volts from the SWR bridge and so R1/R3 are set to reduce the voltage by a factor of 0.8) ***See comment on D1 and D2 above.***
If, however your maximum SWR bridge output is under 5 volts - eg 3.5 volts, omit R3 and R4 and shortcircuit R1 and R2. Then reduce Vref to, say, 3.8volts. By doing this, you maximise ADC precision.

J3 notes
Fit an extra jack socket wired the same as for controlling and monitoring PicAStar. Then use your existing RS232 - jack plug cable to connect PICSWR to the PC for calibration and monitoring by CALSWR.

PICSWR circuit board

Ian Sumner G3VPX 22.7.2007

Rev. 29.8.2007 – C11 added.
R11 & R12 were labelled R1 & R2
Rev.02.6.2008 IC1 pin 8 (Vss) to 0v (not +5v) Layout was always correct.