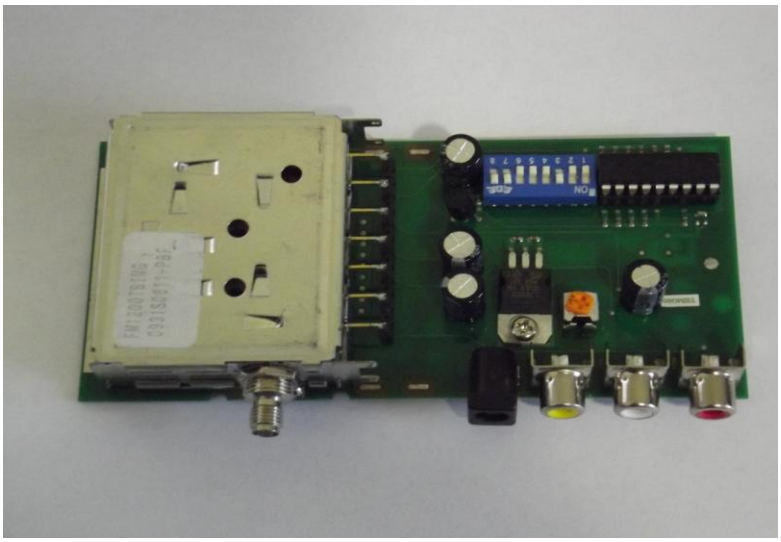
The South East Qld. Digital Group. Inc

The Club 23cm FM Transmitter.

The club 23cm Transmitter is based on the Comtech tuner modules and PCB's as supplied from www.13cm.co.uk as shown below.



The circuit for the tuner and board can be found at http://ve6atv.sbszoo.com/platinum/docs/23cmTxModule.pdf.and is complete as it is. All you need to do is supply video and audio to the unit as well as power and set the Dip switchers to the required frequency (1250 or 1283) Mhz. The output power of around 50mw can then feed a power module amplifier to about 15w at around 4.5v bias setting. More information on the use of these units can be found here http://www.g8ajn.tv/comtech.htm.

Modifications

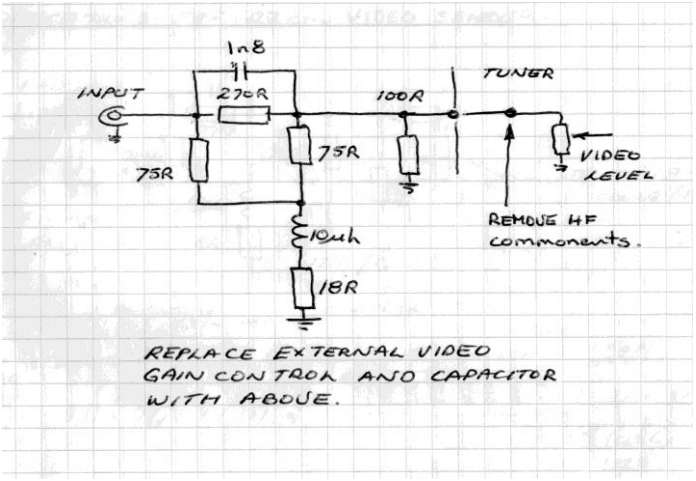
A number of modifications can be made however to further improve the overall performance of these units.

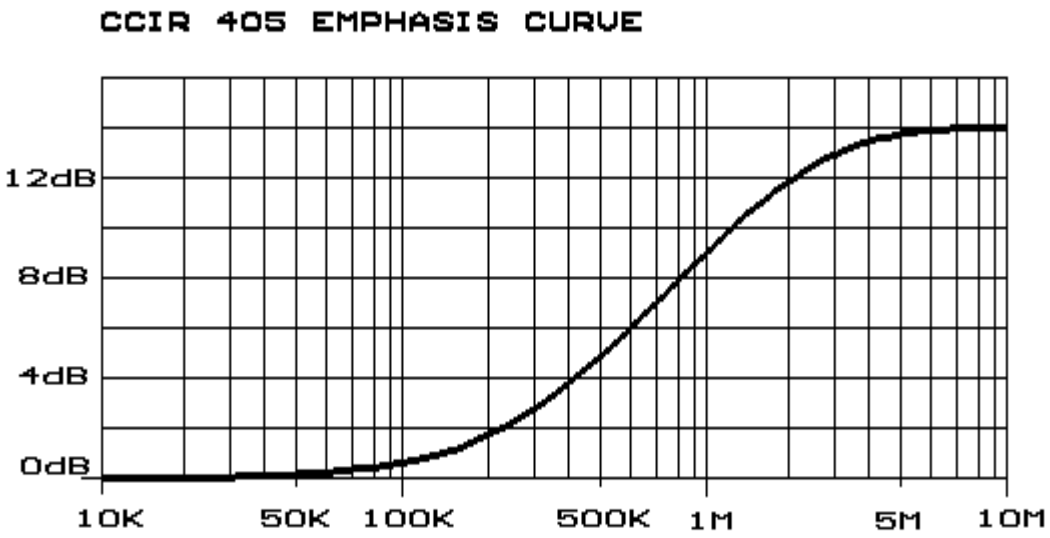
1. The audio sub-carriers are a little low and may need to be increased (check operation first using the repeater). The two 47k resistors may be bridged by a resistor to improve it.

2. Some field tilt maybe present and increasing C5 to 0.01uf can reduce it.

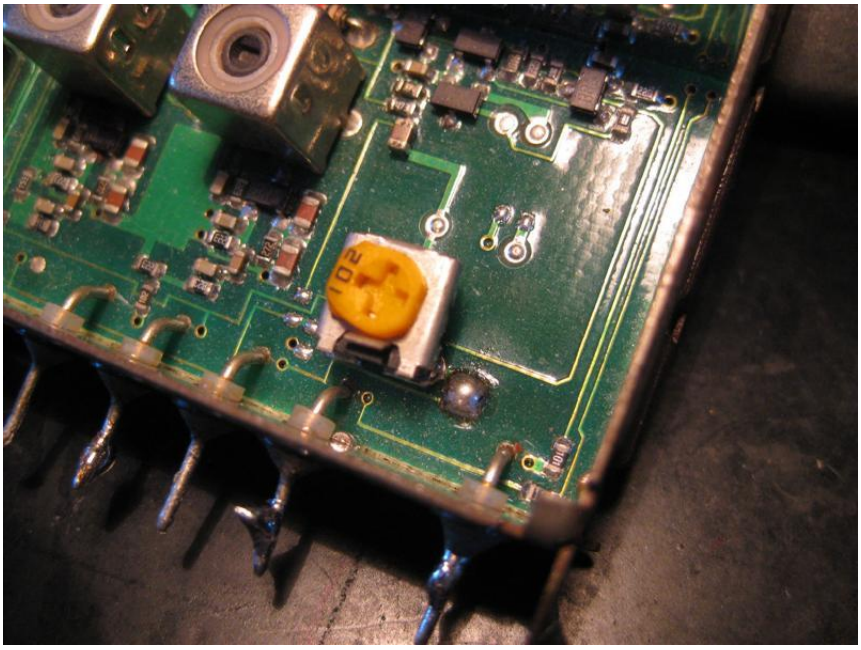
3. One major drawback is that no video pre-emphasis is used therefore this will need to be provided. As with the FM audio, the TV signal to noise ratio, is much improved when Pre-emphasis and de-emphasis is used. This is because the FM modulation and demodulation process suffer from high levels of HF noise.
   More information can be found here; http://www.southgatearc.org/atv/spectrum.htm
   And from here;

http://jf.fourcadier.pagesperso-orange.fr/television/preaccentuation/preaccentuation_e.htm





4. Looking at the circuit remove C1 and R1 and replace with a link where the components had been removed from. The pre-emphasis circuit will need wiring external to the unit as shown below.

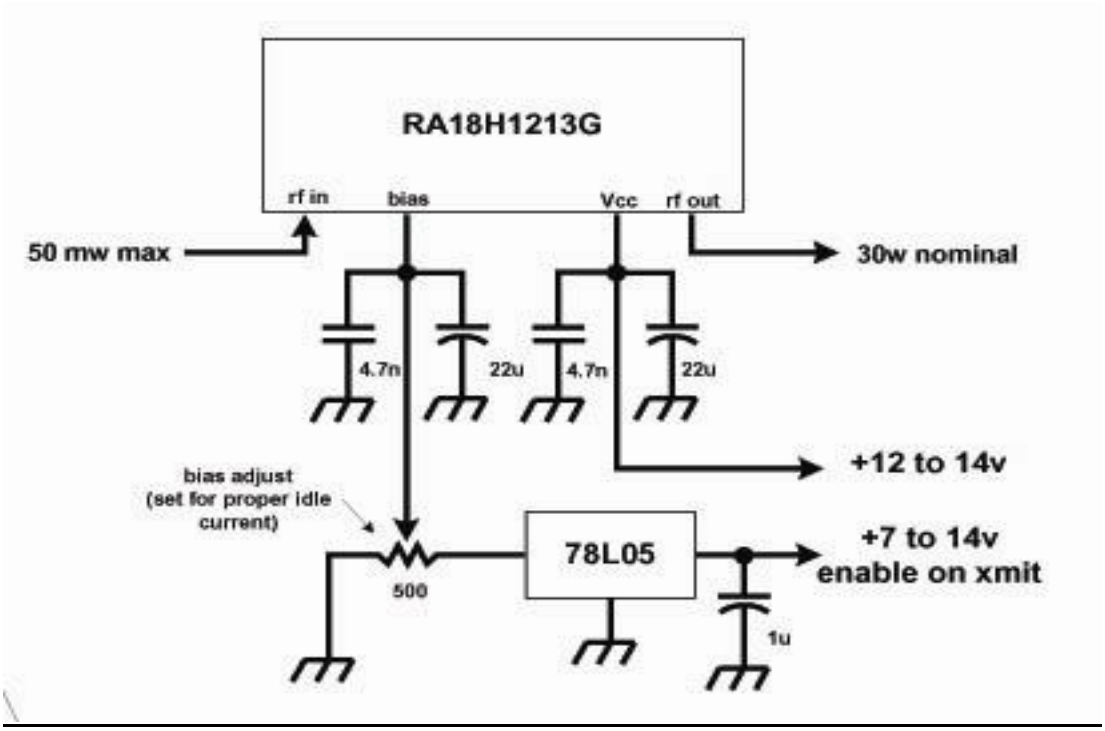


Dip Switch Settings

Frequency MHz	sw1	sw2	sw3	sw4	sw5	sw6	sw7	sw8
1250	1	1	0	1	0	1	1	1
1283	1	0	0	1	0	1	0	1

Please note the ONE means 'ON' as far as the dip switch is concerned.

Power Amplifier



The circuit of the power amplifier appears above, however please note that the 500 ohm bias potentiometer should read 5k.

Further information on these power modules can be found here:

http://www.g8ajn.tv/index.html under technical/RA18H1213G.

The layout of the board will be added ASAP.

If you have any questions regarding this unit please connect the Project officer.

Happy ATV'ing.