

420-450 MHz DOWNCONVERTER TVC-2.4

The TVC-2 is a stripline version of the TVC-1b described in the 1985 ARRL Handbook, chapt 20. It comes tested and tuned ready to mount in your enclosure, or as the model TVC-4, ready to go in a cabinet with a wallplug 120vac/12vdc power supply. Both models also have a "L" version that just uses a lower noise, more sensitive, transistor in the preamp stage. The downconverter is varicap tuned between 420 and 450 MHz (70 cm amateur band) with some overlap, and mixes down to TV channel 3 (61.25 MHz). The overlap will accommodate using ch 2 or 4 if channel 3 is used in your area. The board requires between +11 and 18 vdc at 25 ma.

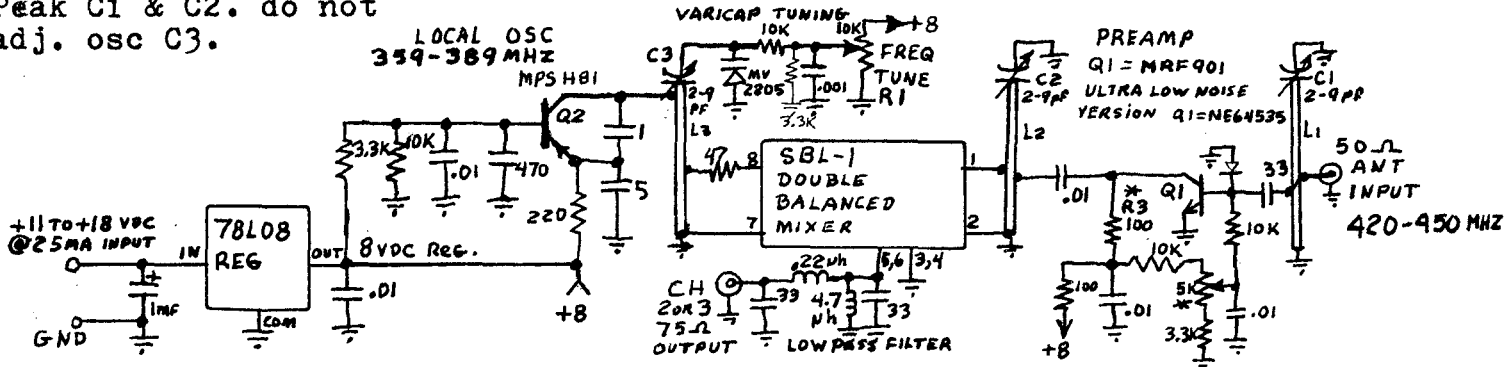
The TVC-2 must be mounted in a well shielded enclosure to prevent interference from strong adjacent channel broadcast signals. The 10K trimpot may be removed and replaced with 3 wires to a 10K panel pot on your enclosure for frequency tuning. A type F connector (RS 278-212) is suggested for the 75 ohm ch 3 output. This mates with cables that are commonly used with TV sets and can be found at Radio Shack and other suppliers. See TV Output section on reverse side.

The 50 ohm 70 cm antenna input is usually a UG1094 (RS 278-105) BNC connector. A short length of RG58 can be run to a T/R relay if used with a transmitter, or for higher sensitivity, thru an adaptor (BNC male to type N female UG349) for larger low loss 50 ohm coax (Saxton 8285) to the 70 cm antenna. Connect the input directly as shown on the board layout below (pad with 33pf disc cap) and the center conductor outside of the shield no longer than 1/4" to minimize loss. The board is tuned but C1 may be fine peaked on a weak signal with an insulated tuning tool.

The TVC-2 may also be antenna mounted in a weather proof enclosure for more sensitivity. By using the DCD module at the TVC-2 you can power and tune the downconverter at the TV end with the DCB control box.

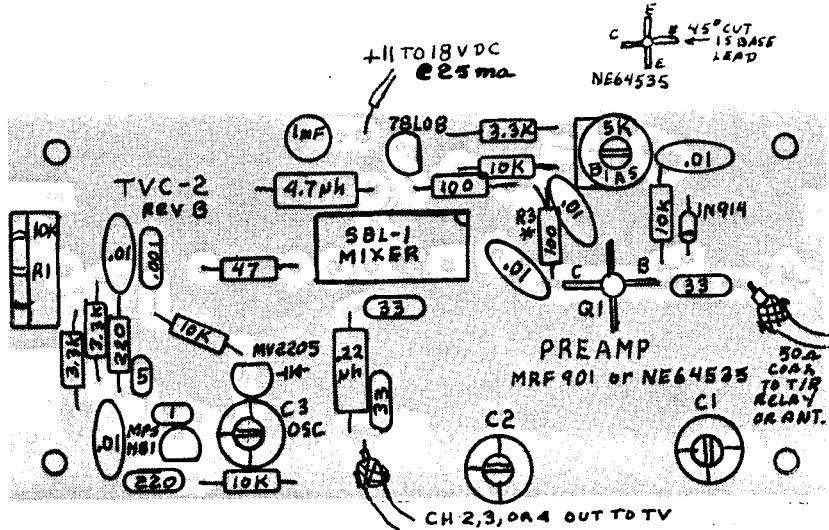
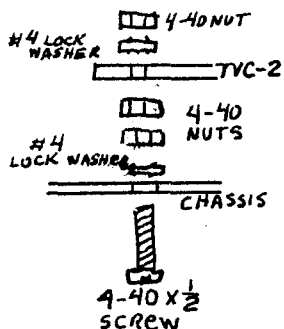
ATV takes some care to see good pictures due to the relative low power amateurs can run compared to the megawatts commercial UHF TV runs. Since antennas are the most important factor, see this section on the reverse side. Coordination with the ATV transmitting station is highly suggested on 2 meter simplex for antenna alignment & tuning.

Peak C1 & C2. do not adj. osc C3.



Mount in a shielded box.

BOARD MOUNTING DETAIL



* 5K bias pot is set for .25 to .5V drop across R3 with the MRF901 or .5 to .8V with the NE64535.

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