

## SG502 Low Distortion Mods

The mods shown will reduce the distortion of the SGt502 to under 0.01%, typically **well** under (0.002% or less).

The single largest contributor of nonlinearity in the unmodified circuit is the T-pad attenuator -> non-ohmic wiper contact resistance -> which can cause 0.05% 3<sup>rd</sup> harmonic under worst case conditions.

The next most significant source is the high dynamic impedance in the emitter circuit of Q140 which causes primarily 2<sup>nd</sup> harmonic.

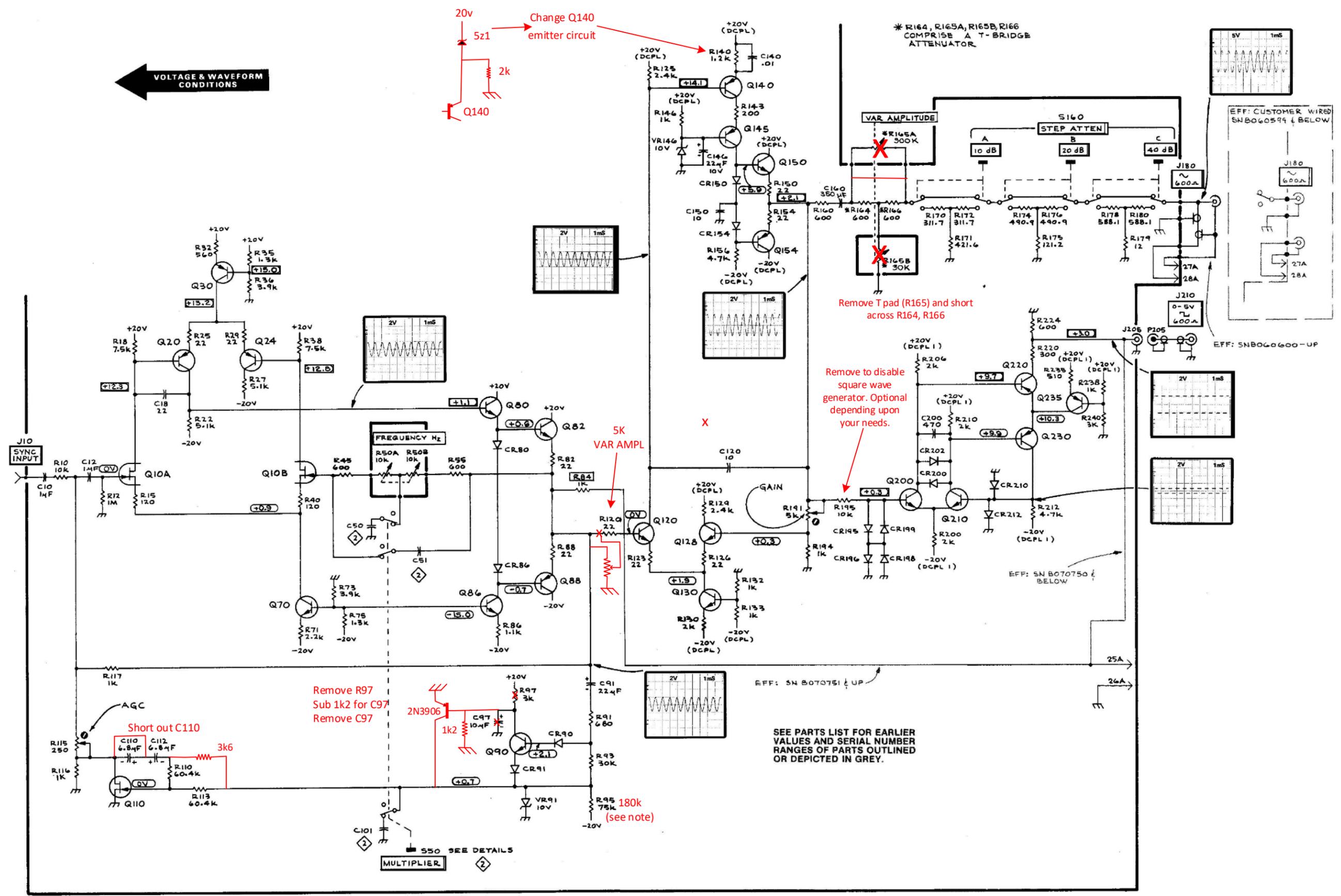
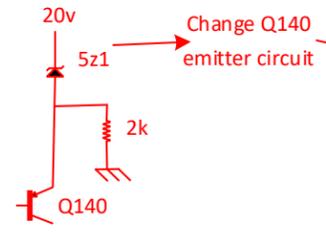
Modify at your own risk because no guarantee is expressed or implied concerning performance!! I am supplying this info as a favor and in no way am I committing Tektronix, Inc. to be responsible. If you encounter problems, please feel free to contact me. The mods have been tried and proven successful by other people.

R95 establishes the settling time of the oscillator. Larger values reduce distortion, but increase settling time. (Possibly to the point of instability) 180k is a good compromise for low distortion but may require 15 seconds to stabilize amplitude.

Good Luck

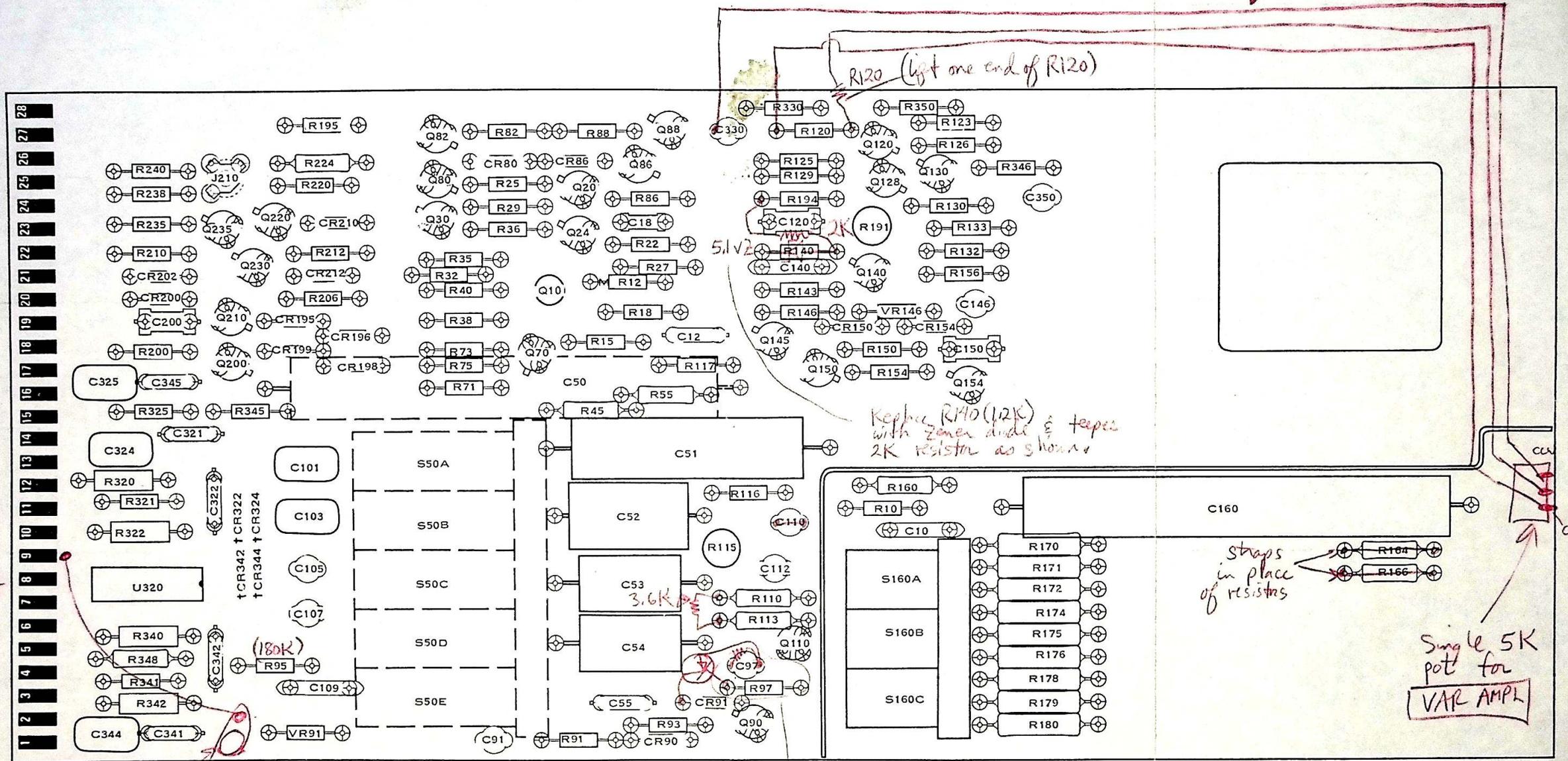
Bruce E. Hofer  
Project Engineer  
Tektronix, Inc.

VOLTAGE & WAVEFORM CONDITIONS



# PARTS LOCATION GRID

Keep wires dressed near chassis and away from FREQ pots



Add flat wire strap. Be careful not to get solder on gold pad area.

Add solder lug under screw

Remove R97 & C97. Teepee 1.2K resistor where C97 was. Teepee 2N3906 transistor as shown.

Straps in place of resistors

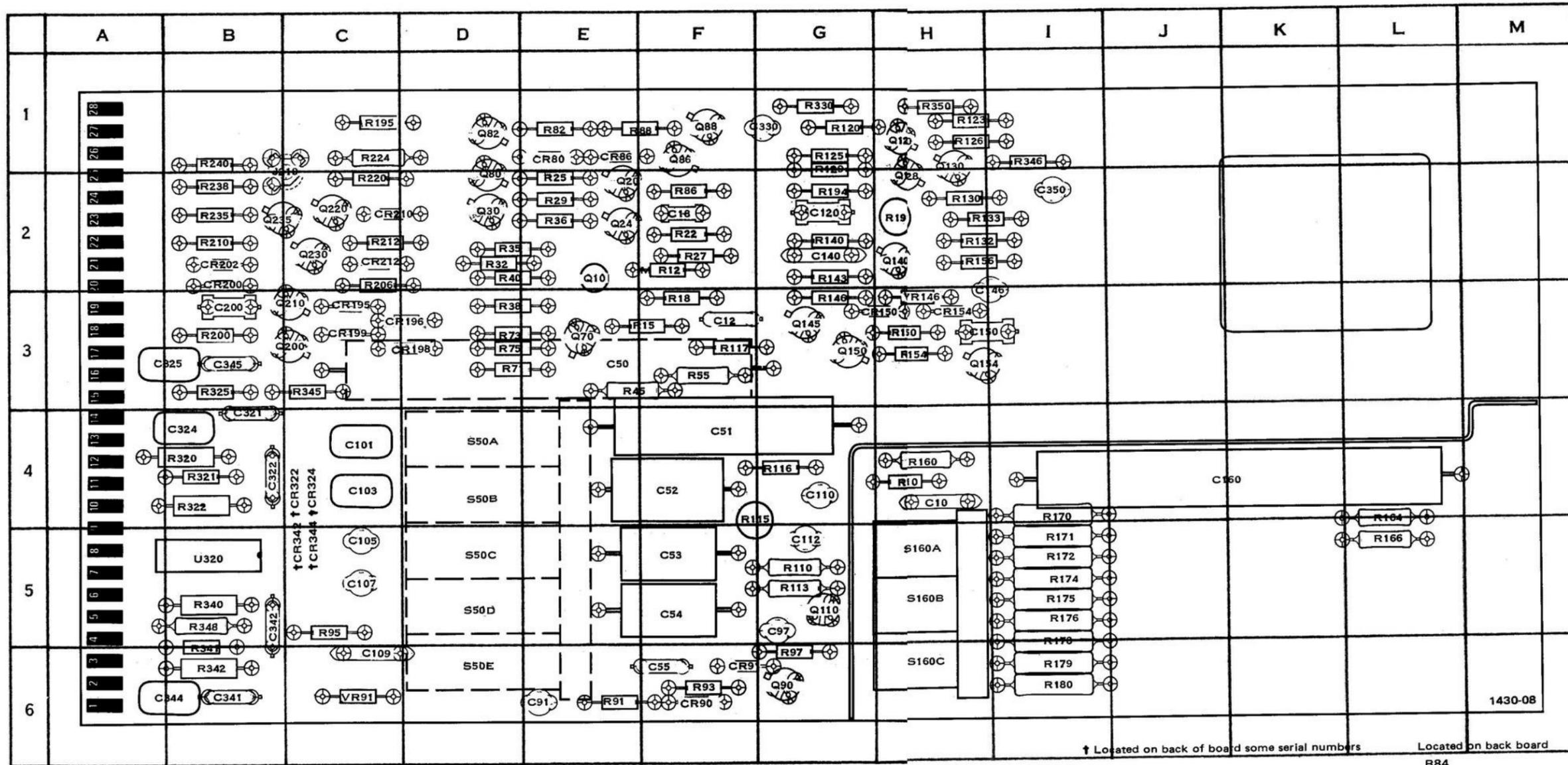
Single 5K pot for VAR AMPL

NOTE: COMPONENTS SHOWN WITH DASHED LINES ARE LOCATED ON BACK SIDE OF BOARD.

† Located on back of board some serial numbers

Located on back board \*R84





↑ Located on back of board some serial numbers      Located on back board  
R84

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A1—Main circuit board.