

TEN-TEC INSTRUCTION SHEET
MODEL 208-AGENERAL

The Model 208-A Notch/CW Filter is an accessory intended for use with the TEN-TEC Argonaut Model 515 transceiver. It consists of two printed circuit assemblies mounted in a small enclosure, along with a four position SELECTIVITY switch, a NOTCH control and an attached cable. The CW filter assembly provides for the selection of three selectivity positions, all centered at 750 Hz, and a straight through position. The notch assembly provides a very sharp null greater than 50 dB, tunable over a range of 200 to 3500 Hz. The Model 208-A plugs directly into the Argonaut ACCESSORIES socket on the rear panel.

Circuit descriptions and schematics for the two printed circuit subassemblies are given separately. The interconnecting wiring diagram is presented below.

INSTALLATION

To connect Model 208-A to the Model 515 Argonaut, remove the shorting plug that is in the ACCESSORIES socket in the Argonaut. Plug the cable from the 208-A into this socket.

OPERATIONCW Filter

The 208-A is in the audio signal path of the transceiver in both ssb and cw modes. Due to the sharpness of the filter in the CW-2 and CW-3 positions, it will not be usable for ssb in these positions. However, in the CW-1 position, where only moderate skirt attenuation is present, the filter may be used to reduce ssb adjacent station or high frequency noise interference. The notch filter is operable in all four SELECTIVITY switch positions.

The four switch positions provide for the following:

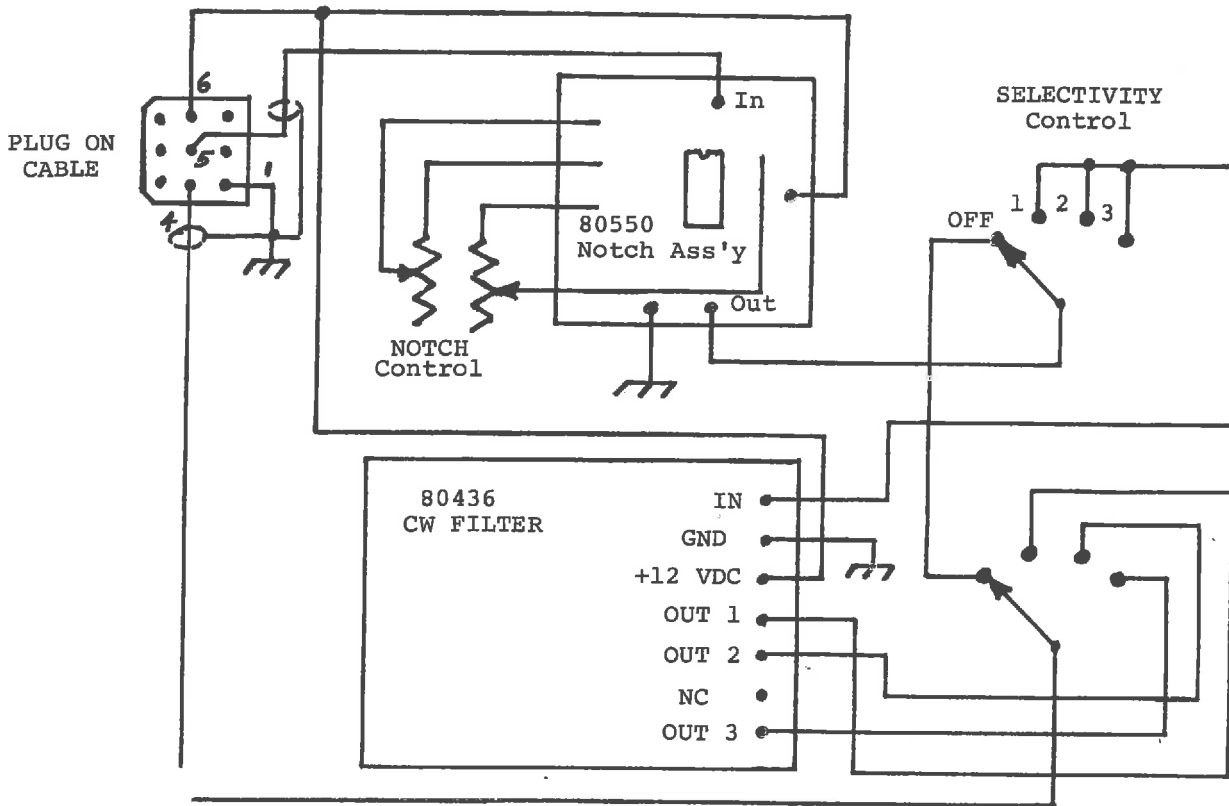
- OFF - In this position the filter is disconnected from the circuit and the bandpass of the Argonaut is not changed.
- CW-1 - Skirt attenuation is moderate, being down approximately 10 dB at 400 and 1500 Hz. This position is useful in tuning in the desired station, for ssb reception with ORM, or for cw reception when no strong station interference is present.
- CW-2 - Intermediate position provides approximately 20 dB attenuation at 400 and 1500 Hz.
- CW-3 - Ultimate filtering is achieved in this position with attenuation of approximately 40 dB at 400 and 1500 Hz. Useful only in the cw mode.

Notch Filter

The tunable notch eliminates cw interference in the passband as well as unwanted carriers in either the ssb or cw modes. Being extremely sharp, adjustment is critical for maximum attenuation.

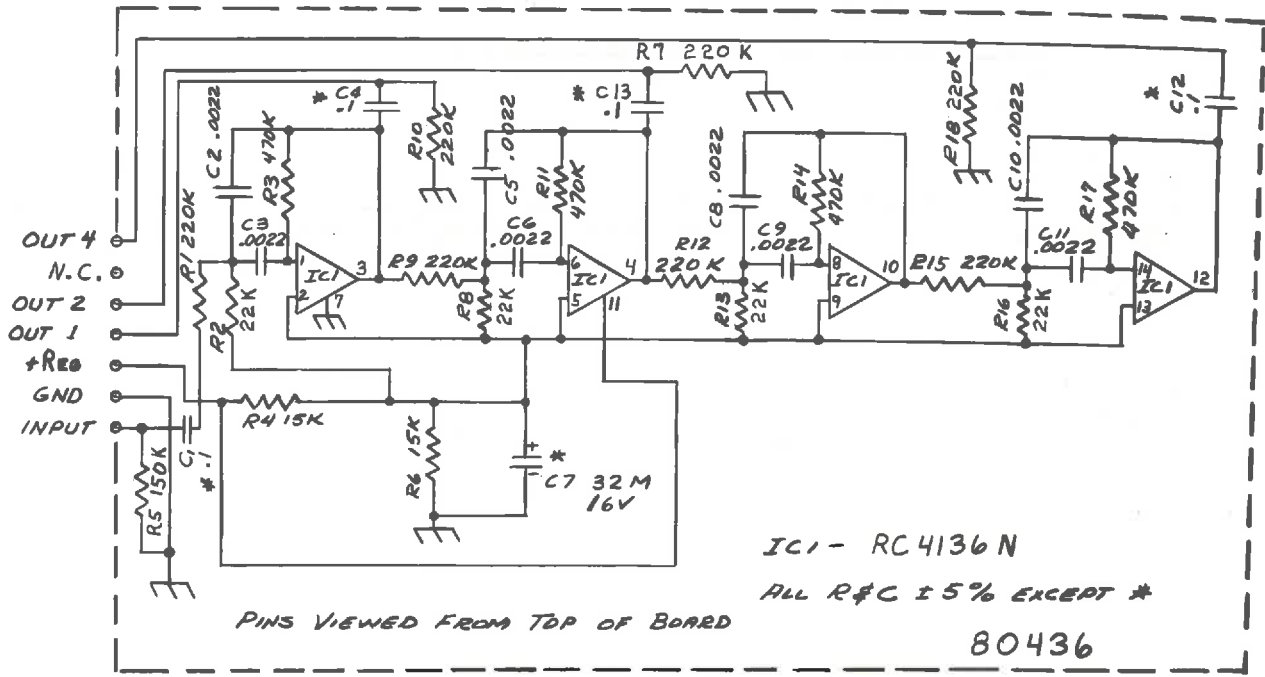
When not needed, the notch can be moved above the passband by setting the control fully clockwise (OUT position).

WIRING DIAGRAM - MODEL 208-A



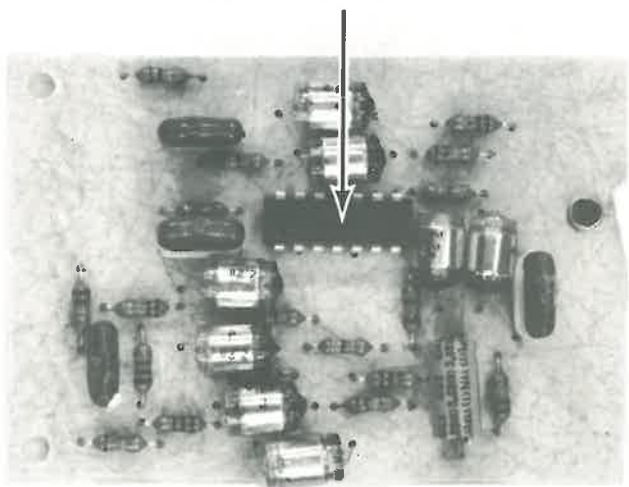
80436 CW FILTER

The CW FILTER assembly contains four two-pole active operational amplifier filters whose center frequency is 750 Hz. The four filters are connected in series with each of the individual outputs brought out to a pin on the board. The filters are selected by the SELECTIVITY switch and are inserted into the audio chain of the transceiver before the AGC take-off point. Thus, when the filters are in use, the AGC will respond only to signals passing through the filter and will not be "pumped" by out-of-band signals as in conventional audio filter applications.



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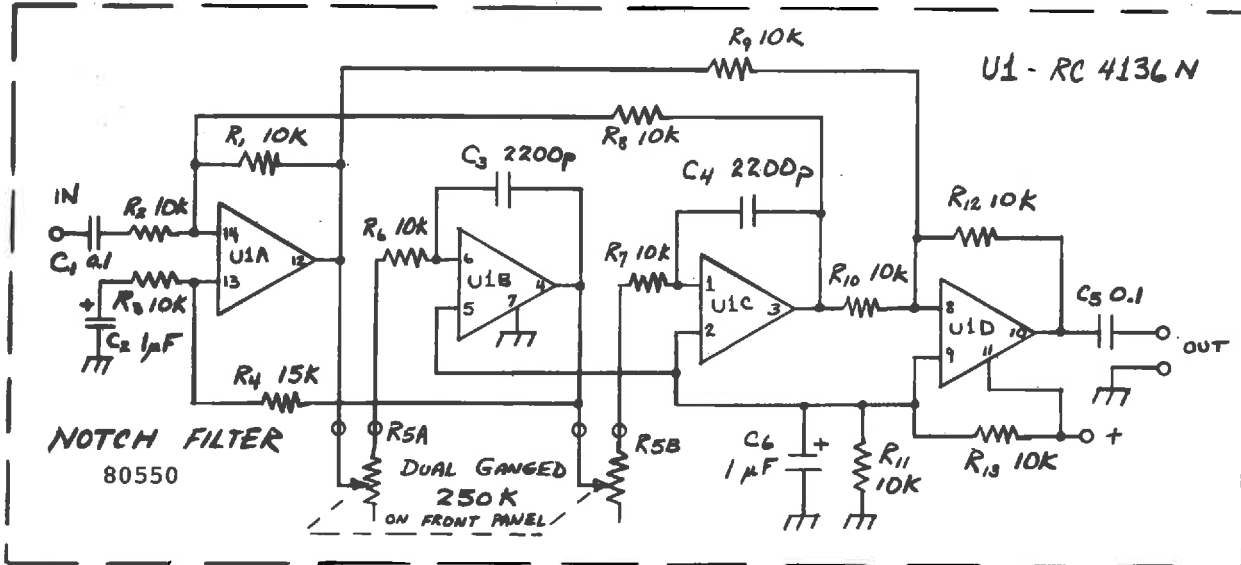
IC-1



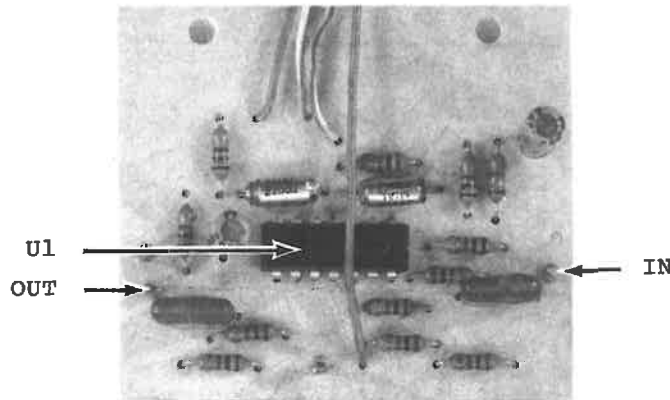
80436 CW FILTER

80550 NOTCH FILTER

A three stage "biquad" circuit and a separate summing amplifier, U1A to U1D, are used to provide a notch filter with 50 to 60 dB of depth and simple tuning. The frequency range is 200 to 7000 Hz. The frequency is set by the position of R5, a dual 250 kohm potentiometer. Since the notch is extremely narrow, it is effectively removed from the passband by tuning it above the transceiver's highest frequency (full clockwise rotation).



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80550 NOTCH FILTER