

The Vintage SSB Special Radio Set – Part 3

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Note: A few more changes to the radios were made in 2012. The transmitter was modified to add Automatic Level Control (ALC) and to incorporate an internal antenna T/R relay. The receiver S meter was changed to more closely match the transmitter. The latest schematic is available as a .pdf on the website and captures these changes. Latest pictures of what's changed are shown below. The ALC works like a Heath SB series transmitter. Grid current appearing at PA tubes V8 and V9 on voice peaks is rectified by D7 and D8, and applied to IF amplifier V4 to reduce its gain. The ALC voltage reduces the cathode voltage on V4, which unbalances the bridge circuit from V7's cathode and causes the meter to deflect. ALC from a linear can also be applied through J3. - MB



Figure 1: The Vintage SSB Special Radio Set connected for transceive operation. This picture shows the latest configuration. The transmitter meter switch now has an ALC position in place of the previous GRID position, and the receiver has a new S meter.



Figure 2: Rear view of the set showing the new SO-239 RF connectors and the RCA jacks for linear ALC, linear T/R and receiver mute.

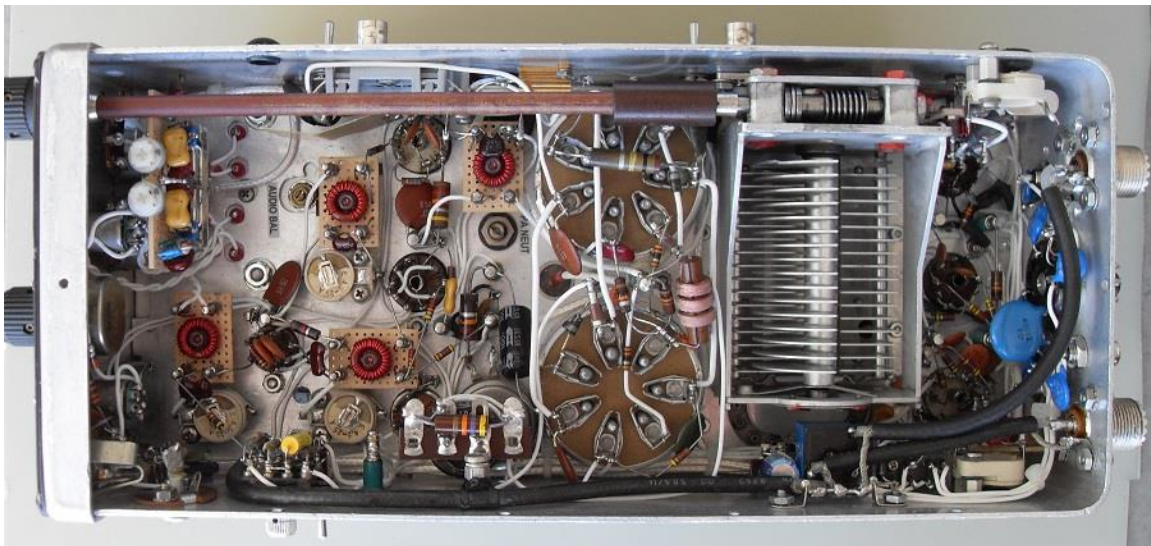


Figure 3: Transmitter bottom view showing revised wiring for ALC and the new antenna T/R relay and RF connectors.

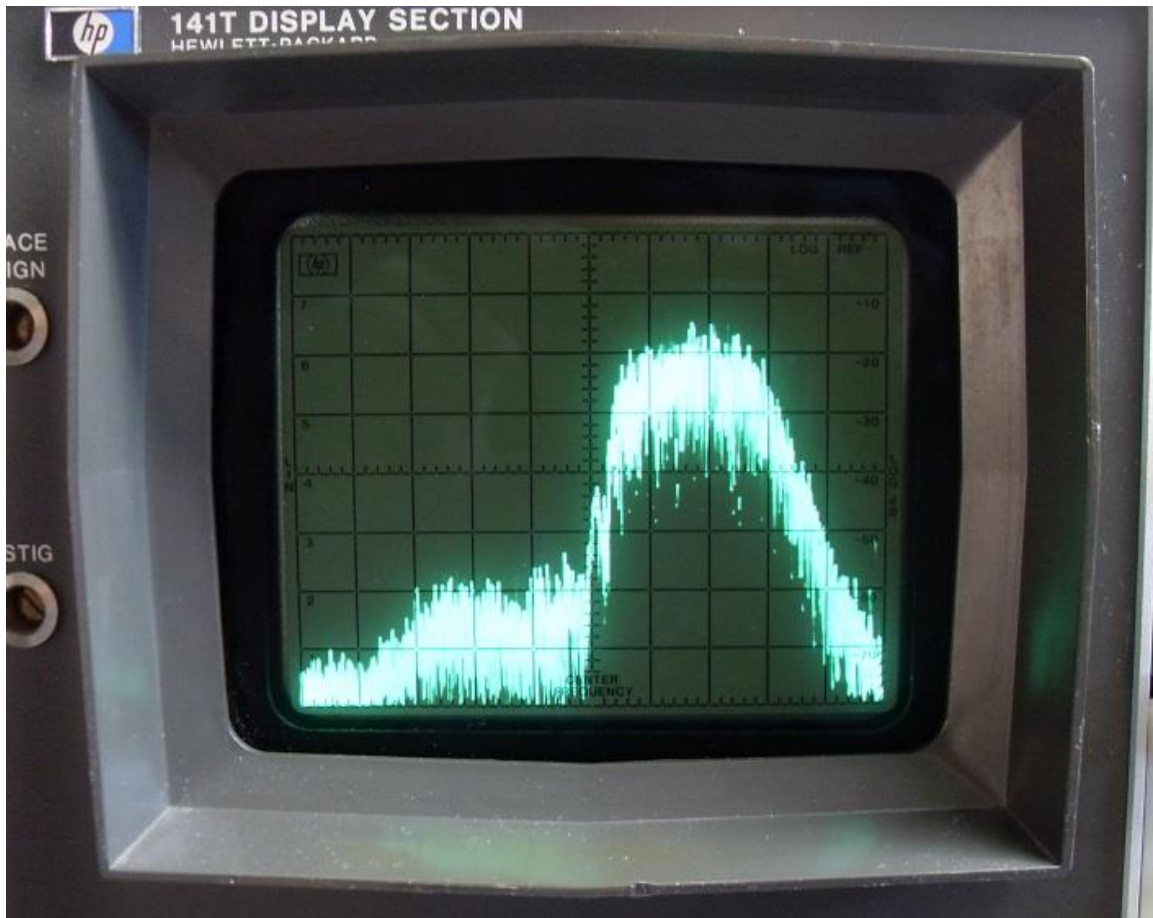


Figure 4: This was done just for fun to see what would happen. I tuned an FM radio off station so it would produce white noise and put the transmitter's mic against the speaker. Then I looked at the RF spectrum at the dummy load on my old HP spectrum analyzer. The carrier is at the center and each horizontal division is 1 kHz. You can clearly see the audio (and resultant RF) passband is about 2.5 kHz wide just as predicted.