

SR-150 6MHz IF ALIGNMENT

METHODOLOGY

This process will use the internally generated signals from the VFO and the Carrier Osc. The VFO **MUST** be tracked and aligned. The VFO CORRECTION adjustment **MUST** be precise. And finally the USB carrier oscillator **MUST** be dead on frequency. Alignment will be performed in the MOX, CW mode. The transmitter will be disabled by removing the HET OSCILLATOR tube V8. You will use the VFO BLACK dial points of 50, 250 and 450 as the main tuning points. At the main tuning points you will be looking for a minimum signal of 5vpp on the grid of the XMTR MIXER V7 pin 1. Ideally you would use 2 tuning wands. If you only have one, well it will just take a couple minutes longer. If you are using one wand advance the slugs alternately, one turn at a time until you start to see rf on the scope. The goal in this process is to slowly advance the slugs into the coil. This will greatly reduce the chance of stagger-tuning. You will start with the slugs near the top of the cans.

SETUP

- I. With the rig on its side connect the oscilloscope 10:1 probe to V7 pin 1.
- II. Pull V8.(this will kill drive to the driver and PA finals)
- III. Set the VFO dial to the black 50.
- IV. Apply power and allow 20 minutes for oscillators to stabilize.

ADJUSTMENTS

Set controls to MOX, CW mode.

1. With the VFO dial set at 50 slowly adjust T1 for approx. 0.5 vpp signal.
2. Slowly adjust T2 for approx. 1.5vpp signal
3. Adjust the VFO to 450 on the black dial.
4. Slowly adjust the slugs of T1 and T2 for peak voltage out.
5. Adjust the VFO to 250 on the black dial.
6. Adjust C32D and C32E for max signal.
7. Adjust the VFO to 50 on the black dial.
8. Slowly adjust the slug of T1 and T2 for peak voltage out.
9. Repeat steps 3 through 8 until you achieve a max signal that is equal in amplitude at 50 and 450.

At this point you should have a minimum of 5vpp on pin 1 of V7. Now a ripple test must be performed

- A. Slowly tune the VFO from 0 to 500 on the black dial. Note the signal level at 0 and 500. Also note the peaks and valleys between 50 and 450 on the dial.
- B. If the signal at 0 or 500 drops more than 3dB then repeat steps 3 to 8 above reducing gain but maintain balance at 50 and 450. Then rerun step A.
- C. If the peaks or valleys between 50 and 450 are more than 2dB then repeat steps 3 to 8 above reducing gain but maintain balance at 50 and 450. Then rerun step A. NOTE: Adjustment of C32D and C32E will affect the ripple. They can be peaked at the high end, low end or the middle which ever gives the least ripple. **However** do not split them that is, peak one at one end and the other at the opposite end. This will result in staggettuning.

CONCLUSION

If the process above is not successful in producing the desired pass band and signal level most likely V2, V3, T1, T2, K2, C3 or their associated circuitry are at fault.