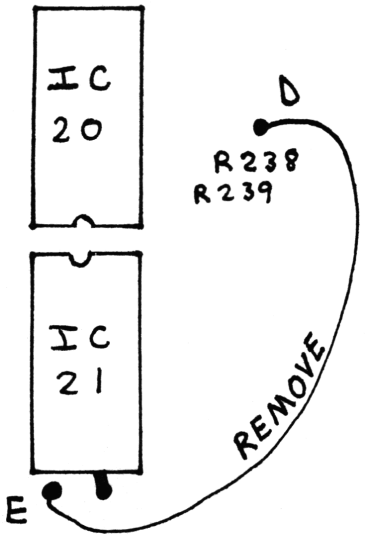
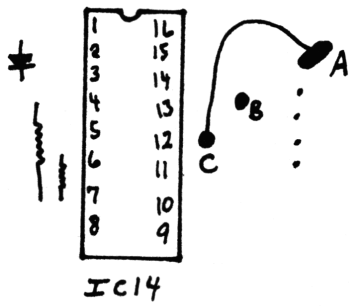
# SOMMERKAMP TS-788DX MODIFICATION

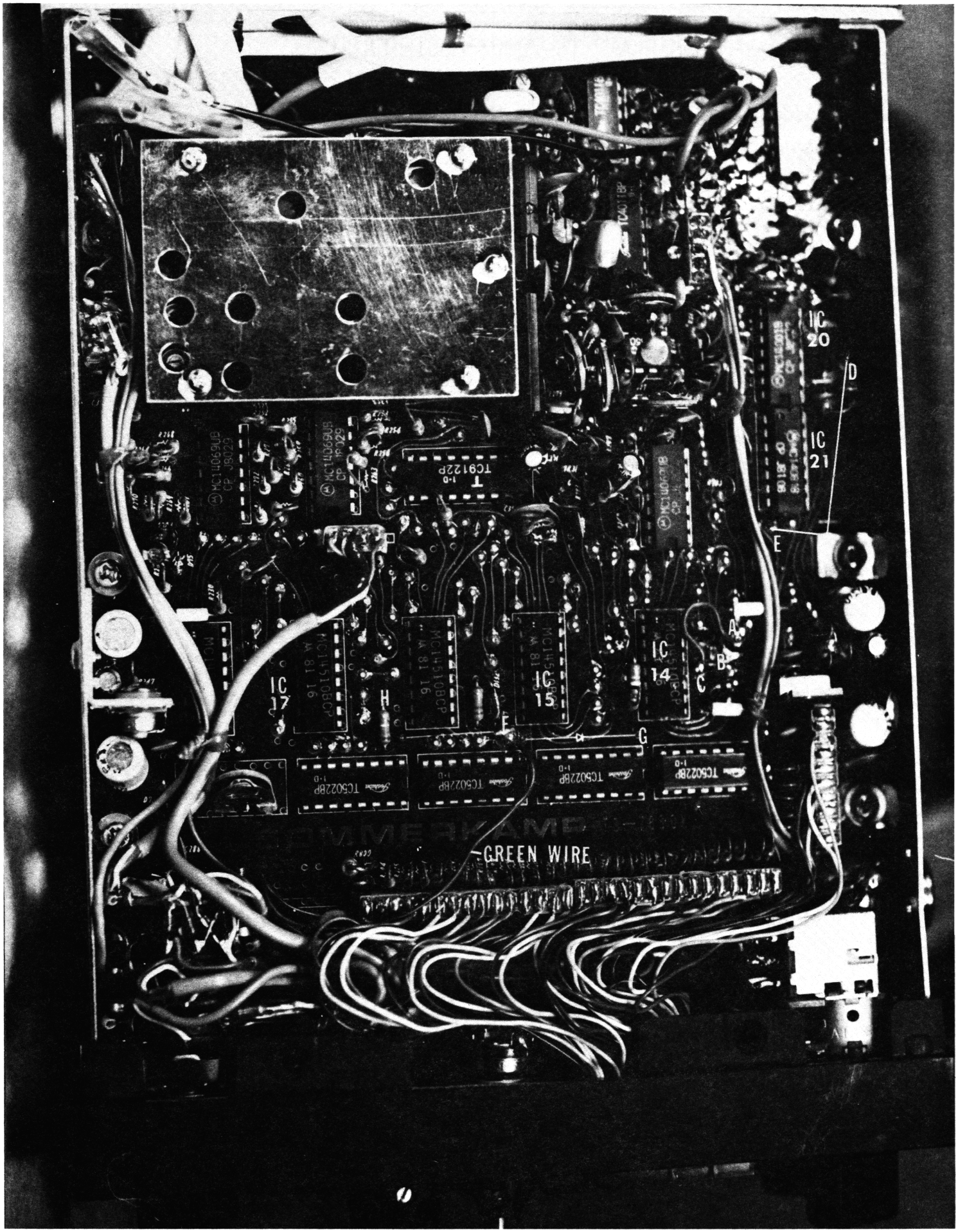
Another exciting feature of the Sommerkamp TS-788DX is its easy conversion down to 26.000MHz. The following steps will show you how:

1. Remove the covers.
2. Turn the unit up-side-down to locate the jumper points in the next steps.
3. There is a jumper near IC20 to IC21. Unsolder to remove it. It will no longer be needed. This is labeled D & E on the photo.




4. Locate the jumper near IC14. Unsolder the end of the jumper nearest IC14 at point B and resolder to point C (pins 12 & 13 of IC14). Normally the jumper is between A and B. Move it to A and C as shown below. Also reference to the photo. NOTE: When I soldered the jumper to C it was not making contact with pins 12 & 13, rather than lift the whole board I was able to heat pins 12 & 13 to get contact. USE CAUTION! An Ohmmeter may be used to check for an open from C to pin 12 & 13.




IC 20
IC 21
IC 17
IC 15
IC 14
A
B
C
D
E
F
G
H
GREEN WIRE

5. Connect the GREEN wire to the pad (labeled F) closest to IC15. Refer to the photo for exact location.

TUNE-UP:

VR20 AM power
VR21 FM-CW-SSB power > located inside RF Power Unit

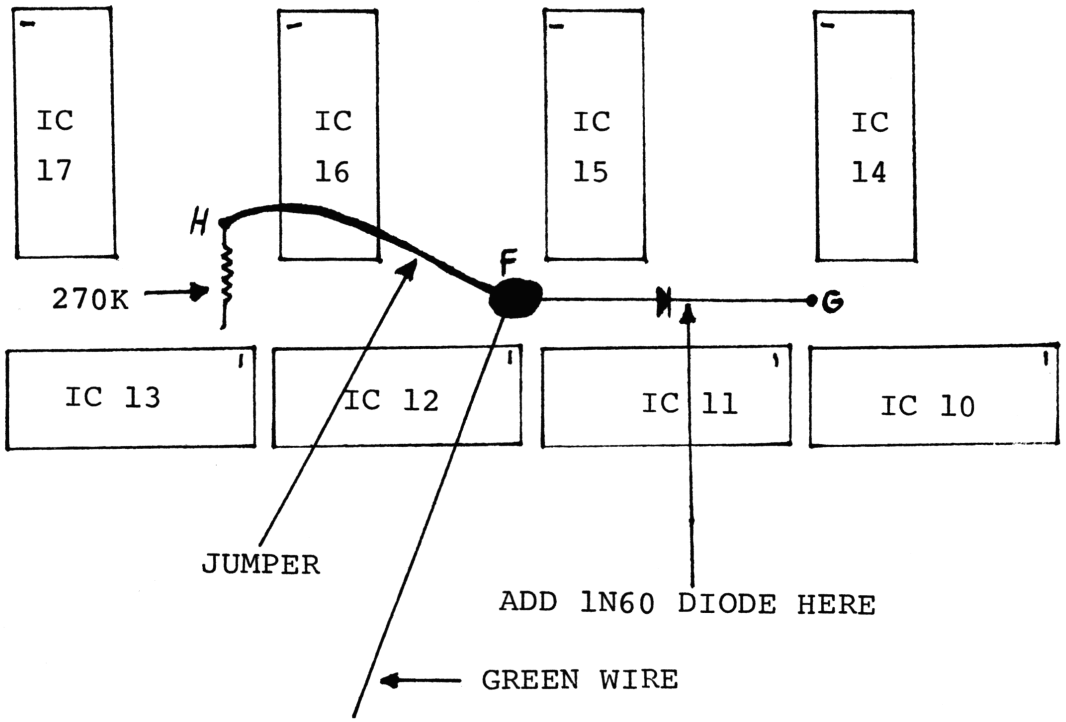
L8, L9, L10, L12, L14, TC4 - peak for maximum power with good forward drive and frequency coverage.

Actual output power as measured on our test unit was:

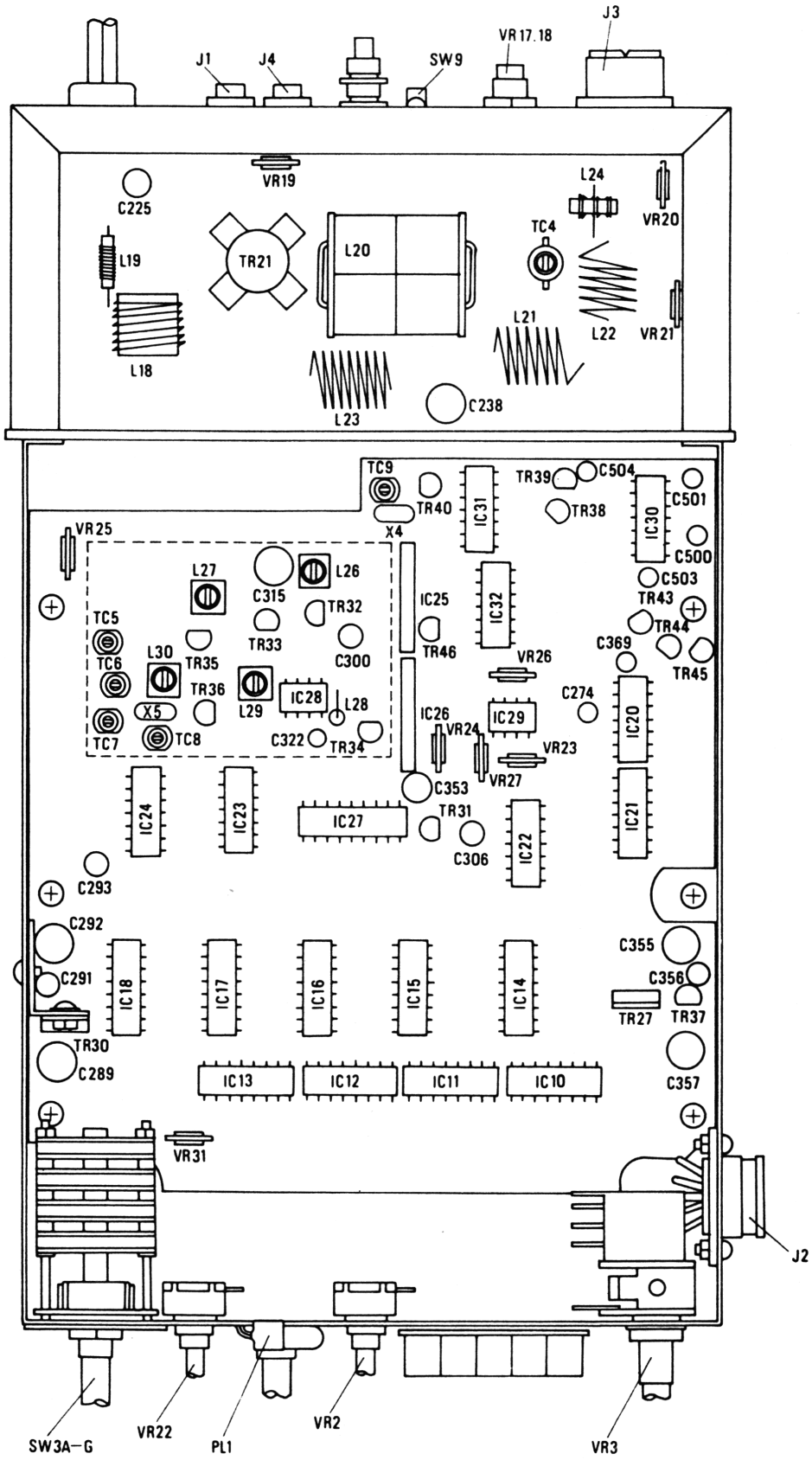
AM: 30W dead key, 45W with tone
SSB: 45W PEP
FM: 58W

NOTE: Counting down from 29.999 to 26.000 and back to 29.999 was fine. When the counter was advanced forward from 29.999 the display should read 26.000. It did not - it jumped to 24. To eliminate this glitch add a .1 ufd bypass capacitor on pin 14 of IC14 to pin 8 (ground) of IC14.

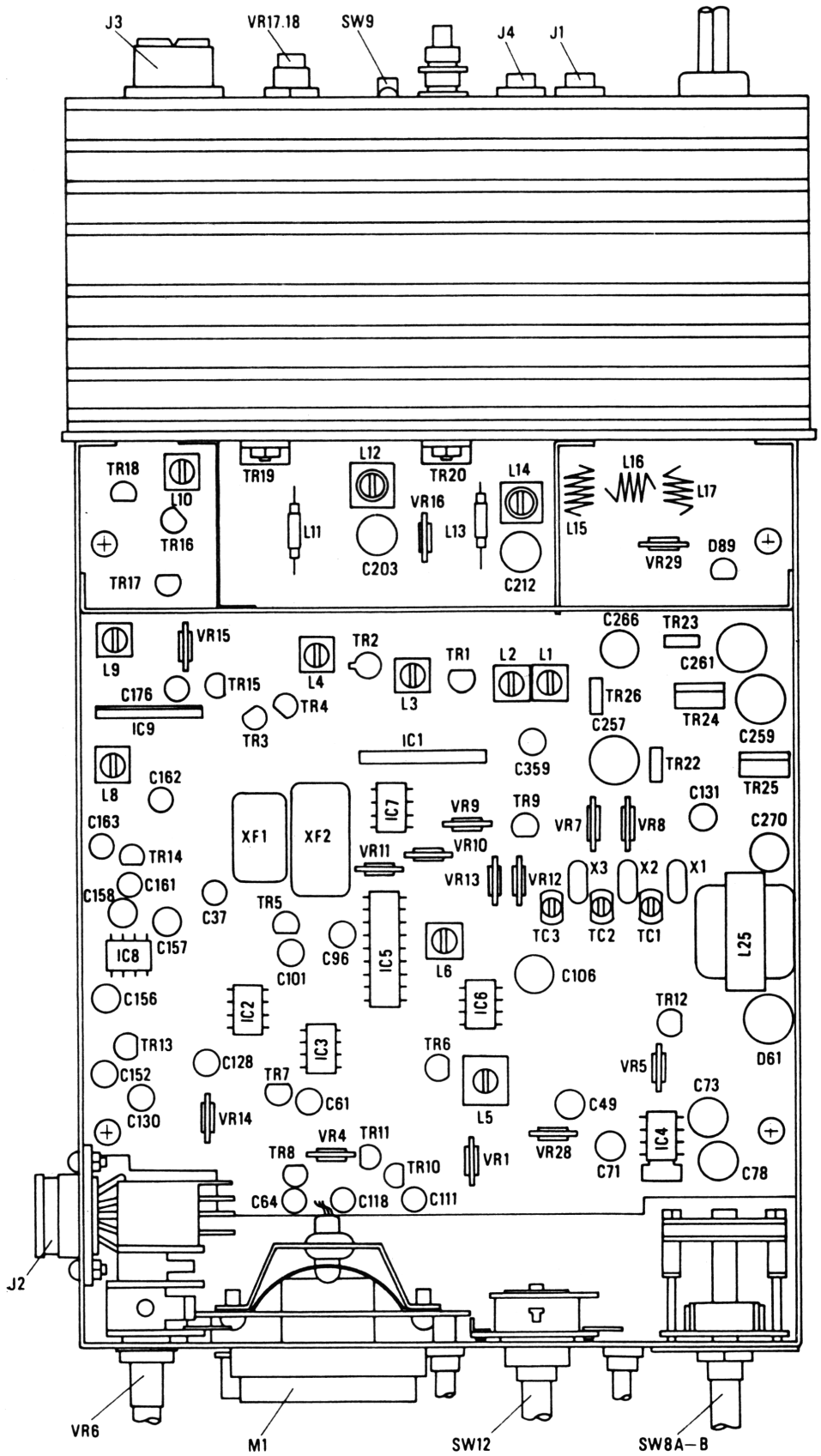
When power is removed from unit to disable memory, unit will go to 26.000 when turned to on. When turned to "ch. 9", unit will go to 26.500. If you would like "ch. 9" to read 27.505, add a 1N60 and a jumper to the points shown below:



## COMPLETE PARTS LAYOUT



## COMPLETE PARTS LAYOUT



SOMMERKAMP TS-788DX MODIFICATION cont'd.

RIT Clarifier System:

The T/R frequency is variable between 26.000-29.999 MHz in 100 hertz increments. For this reason we felt no need to "open" the RIT circuit for variable transmit $F_o$. This will prevent "walking around the dial" since transmit is rock steady where set. Receiver can then be fine tuned right on the money. If every unit had this capability there would be no need to open any clarifier, since the purpose is to allow one to slide down a KC or two for a clear channel space. This would cure 99% of clarifier problems.

There is no need for a great amount of slide because the frequency is variable in 100 Hz steps which is great, because this is derived from highly accurate dividers and PLL locked. Theoretically all you would need is a $\pm$ 100 hertz slide capability. However, in the event that the station you are talking with has a shift of 600 hertz between transmit and receive you would encounter a problem. But don't worry, SOMMERKAMP engineers have designed $\pm$ 2 KC of frequency offset to take care of that problem.

With the RIT control in the OFF position receiver and transmitter are locked together. The frequency display is just that - a display, not a true frequency counter. The front panel VXO adjustment is used to adjust the RIT frequency to agree with the display. We found the actual and displayed frequency to vary a maximum of 970 cycles.

All things considered, this unit is a good buy for the money.