

Unit Evaluation

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UNIC-RV-CB45 AM radio

Short-Comings:

1. Led signal "s" meter and transmit modulation % meter is good but there is no light or indication of when the unit is switched to transmit.
2. Small dual control knobs.
3. No slug tuning in the driver and final circuit.
4. Grounded case.

Good Features:

1. Surrated knobs even to a rotating channel selector.
2. Option switching to channels 9 and 19.
3. LC-7131 PLL chip and a TA-7310p vco/mixer chip (this allows for "A" and/or "B" kit modification)
4. Mike connection, a standard 4 pin Midland-type connection.

New Features:

1. Inductive coupling on the output of the 10.24mhz. Circuit (T-6) allowing for a change in load without a change in frequency.
2. 1st can looks like a 455khz can (very critical tuning).
3. Pin 5 of the vco/mixer chip has fixed tuning (L-2) while there are two tanks on the output pin 9. (T-8 and T-9).
4. There is no tuning on the first 455khz amplifier.

Let us suggest, if you have these units for sale, that you make this first circuit correction in front of your customer. It is a little bit "show biz" but it does instill in your customer your ability and knowledge of this unit in case he should ever need repairs.If you will turn mic-g control completely ccw and press the ptt mike lever, you will see that you have no indication of transmit.

1. Remove the bottom cover.
2. Make up a 3" wire with a 100k resistor on one end. Cover the resistor with shrink tubing.

3. Attach the resistor end to the leg of R-101. (Located just behind pin 2 of the IC-4 chip). Tack the other end to the leg of R-56 (located just forward of L-8 and L-9, outboard from Q-8). Now when you press-to-talk the first two lights on the L.E.D. bar indicator will come on. These are not a transmit level, just an indication. The modulation % will still be indicated above this level. The level of this mod. % is adjustable by RV-3 (located forward of the audio chip but it also adjusts the AMC (automatic modulation control). If this pot is adjusted too much ccw, the unit will over modulate. RV-1 adjust the L.E.D. bar for "s" units. RV-2 squelch level. R-2 serves no purpose in the circuit. Since the collector's source is also removed during transmit, there is no need to ground the emitter. R-1 (an 820 ohm resistor) is sufficient for self-biasing. There is no need to attempt fixed biasing in the emitter circuit. This reduces the amplification factor of this 27mhz amp. Better receiver sensitivity is gained by clipping or removing this resistor.

As for the short-coming of the driver and final not having slug tuning. To peak this unit, half and spread the two halves of L-13 as far apart as the chassis and L-1 will allow. Squeeze or stretch tune L-11 and L-10 for a peaked position. Once you have these coils tuned you might want to put some 3m-4475 adhesive on them to prevent their bouncing up and down. Just drop some adhesive on the top coil opposite sides and let it run down the coils. For those that have their work bench so located, this unit offers a good chance for you to show off your expertise.

On The Topic Of Circuit Analysis:

From the time of the first feature, we have had a lot of favorable and encouraging comments. But more importantly, the discussion of the circuit has brought to light things that were not mentioned or were not apparent. We were asked by two different readers, "If the diagram that illustrated the equivalent resistance of a diode as you apply voltage from zero to forward conduction were true, why did we infer that the diode offered infinite resistance while the lowest voltage applied was .1 volts?" This did prompt thought and further investigation of the circuit. The findings were that the circuit as designed did not meet the full intent of the original design, but if you add another 1N-914 or 1N-4148 (or any other such fast switching diode) in series with the existing diode it does. The Plus is that the receiver gain is increased and the RF gain control has a wider range of control. Also, this month we have had several calls from persons modifying a President or Uniden AR or