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CUSTOM ELECTRONICS  
SIGNAL ONE REPAIRS  
(402) 391 6230

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CX7B LED COUNTER BOARD  
INSTALLATION INSTRUCTIONS

1. Remove outside dust cover from radio.
2. Remove perforated cover from counter board housing.
3. Carefully disconnect all Amp connectors from Nixie counter board.
4. Un-solder wire #402 (purple wire) from C46 (feed-thru capacitor located on rear panel of counter board housing).
5. Remove four mounting screws holding old counter board to the standoffs and remove board from radio.
6. Place new LED counter board in position and connect the Amp connectors to the board as shown. If wires are not long enough to reach the pens, they will have to be extended by splicing a wire to them.
7. Screw down the new LED board to the four mounting standoffs and replace perforated cover.
8. Replace 6 volt meter lamp with new 12 volt lamp. The white wire connected to the left hand lamp terminal may be removed from the radio or its end covered with tape or sleeving. From this terminal run a new wire to C6, filament feed-thru capacitor located on upper power amplifier compartment. Remove black wire from right lamp terminal that goes to meter ground. Install 22 ohm 1/2 watt resistor from lamp's right terminal to meter ground.
9. Remove R4 (47K) from power supply board.
10. Replace CR13 and CR15 (located on power supply board) with 3 amp diodes.
11. Remove R29 from power supply board and install 7.5 ohm 10 watt resistor in its place.
12. Install 100 MF capacitor across the 7.5 ohm resistor installed in step 11. The capacitor's "-" lead is connected to pen 175.
13. Remove Q8 from power supply board. Ground wire #66 (connected to pen 138 on power supply board).
14. Remove Q3 (TIP 29A with the brown lead located on the radio's back panel) and replace with a MC7805 voltage regulator integrated circuit. Do not insulate the mounting tab, however, cover the mounting tab with thermal conductive compound. Re-solder the brown wire to the IC's output pen (same pen as TIP 29's emitter). Solder wire #66 to center pen and wire #67 to input pen (same pen as TIP 29's base pen).

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SPECIAL INSTRUCTIONS FOR RADIOS EQUIPPED WITH THE  
NEW CX7B POWER SUPPLY BOARD.

1. Perform instructions 1 thru 9.
2. Do not replace diodes in step 10 if they have a 3 amp rating.
3. Some boards have a 5 or 10 ohm 10 watt resistor in series with the 24 volt line going to the 5 volt regulator. If this resistor is not in the circuit, a 7.5 ohm 10 watt resistor should be installed. This can best be done by soldering a terminal strip to the new board and mounting the 7.5 ohm resistor to it's outer terminals. Wire #67 is removed from pen #137 and connected to one side of the resistor. A wire is connected to the other side of the resistor and soldered to pen #137. Connect 100 MF capacitor across the 7.5 ohm resistor. The "-" side is connected to the side connected to pen #137.

To verify power supply board modifications, remove wire #395 from counter board pen #357 and apply AC power to the radio. Voltage at wire #395 should be 5 volts D. C.

In normal operation, the counter's frequency resolution is 100 Hertz. However, by moving the jumper located in front of the LED board from pen Y to pen X, resolution is increased to 10 Hertz. The decimal point is internally fixed and cannot be moved one place to the left. Also, the new counter, as with the old counter, resets to 900.0; the most significant digit will be one digit low. To read the BFO frequency, wire #479(VFO "B" input) is removed from counter board pen 352. Connect a short jumper from AGC board pen 487 to counter board pen 352. CAUTION: do not let the jumper short out any of the components on either board. Transmit and receive VFOs must be in VFO "B" position. If the mode switch is in "USB", the counter should read approximately ".065.0". Actual frequency is "16.50". Counter update time with the jumper connected to pen X is 1.2 seconds; in normal operation, update time is 0.12 seconds.

The 8.8 MHz carrier, using the new LED counter, can now be adjusted as per the manual.