

## MANUAL TUNE UP FOR THE SIGNAL/ONE CX-7 TRANSCEIVER

### OBJECTIVE:

The PA TUNING control and the LOADING control must be adjusted so the final amplifier is operating “Linear”. When this condition is achieved, the SCREEN current will not rise over 12 Milliamps (1.2 on the meter) as the OUTPUT control is turned up to maximum. Any other method of adjustment will shorten the tube life and result in poor sounding transmission.

### PRESETTING CONTROLS:

MANUAL/BROADBAND SWITCH	= POINTER TO MANUAL
CLIPPING CONTROL	= 0
OUTPUT CONTROL	= 0
PA TUNING	= Known Presets or 6
LOADING	= Known Presets or 6
MODE	= USB or LSB
METER BUTTONS	= PLATE
CONTROL BUTTONS	= PTT
TRANSMIT VFO BUTTONS	= A
MHZ + VFO A	= Select band and frequency
MIKE	= Turned off or unplugged (Will modulate on TUNE)
RF GAIN TO 10 ----- AF GAIN TO 3. ----- 50 Ohm Dummy Load Connected	

### METER SCALES:

PLATE selected 0 - 5 Scale	= 0 - 500 Milliamps
SCREEN selected 0 - 5 Scale	= 0 - 50 Milliamps

### PRELIMINARY:

Turn on and allow minimum of 3 to 5 minutes warmup. Verify noise in receiver speaker. Press TRANSMIT control button and verify 100 Milliamps PLATE current (1.0 Meter), then push PTT button to return to receive.

### TUNEUP:

1. Press TUNE control button. Turn OUTPUT control until PLATE current reads slightly less than 2.0 on meter. 5 SECONDS MAXIMUM IN TUNE, then back to PTT.
2. Press FWD POWER meter button and adjust PA TUNING control for maximum reading.
3. Press SCREEN meter button and turn OUTPUT control clockwise. If screen current rises over 1.0 on meter, adjust LOADING control to reduce meter reading. Readjust PA TUNING control for maximum SCREEN meter reading, but not to exceed 1.0 meter reading, if so, reduce OUTPUT control and reset LOADING control.
4. Continue to advance OUTPUT control for higher SCREEN current. Reduce reading with LOADING control and repeat PA TUNING for maximum SCREEN current until no increase in SCREEN current is possible. Return OUTPUT control to “0” each time.
5. Be sure to observe 5 second limit in TUNE and wait at least 15 seconds before going to TUNE again. If longer time required, direct a cooling fan to the finned heat sink, then 15 seconds in TUNE is possible.
6. Verify FWD POWER meter reading can go to “4.2” or higher. This reading is only important on CW operation as a maximum of “4.2” but any power less than this may be used by OUTPUT control adjustment. On SSB, the meter reading is average power, so 25% of full scale is really maximum peak power.
7. PLATE current is not used in tuning tubes with Screen grids and readings up to 3.3 (330 Milliamps) are only important on CW operation.

OPERATION: SSB:

1. Push CLIPPING meter button. Speak into microphone and adjust CLIPPING control clockwise until meter just barely deflects off zero. Usually at a setting of "2" on the control. This is minimum Clipping & best quality.
2. Push DRIVE button and advance OUTPUT control until meter just moves off zero. This is maximum output power, typical "2" on control.

W8CXS