

# Kenwood Hybrid transceiver tuning procedure

## Objective:

The objective in tuning a radio with a tube final amplifier is to set the proper drive (ALC), tune the final amplifier to resonance (PLATE), and set the load (LOAD) control for the proper level of plate current in the final amplifier. In the case of the Kenwood Hybrid radios, this means a final loaded plate current (IP) of 225ma. There are three controls that will accomplish this objective - the DRIVE control, the PLATE control, and the LOAD control. When these controls are properly set, the radio will put out a strong, clean signal.

## Preliminary control settings:

1. No key plugged into KEY jack on rear of radio.
2. Dummy load attached to the RF output jack on rear of radio.
3. POWER switch: Set to ON
4. HEATER switch: Set to ON
5. BANDSWITCH: Set to desired band
6. VFO: Set to desired frequency
7. METER switch: Set to ALC position
8. MODE switch: Set to TUNE position
9. LOAD control: Set to minimum (CCW)
10. PLATE control: Set pointer to match desired band
11. CAR control: Set between 9 o'clock and 12 o'clock
12. MIC GAIN control: Set to minimum (CCW) This setting should be done the first time you tune the radio. After that, it can remain in its normal setting for your microphone and speech levels.

*In the following steps, only place the SEND/REC switch to SEND long enough to attain the desired readings. Limit these steps to under 5 seconds with the switch in the SEND position.*

1. Place SEND/REC switch to SEND and tune DRIVE control for maximum ALC reading. If meter pegs to the right, reduce CAR control setting until meter reads near the center of its range. If there is no reading, increase the CAR control slightly until there is a reading. Return switch to REC.
2. Place METER switch to IP position (plate current).
3. Place SEND/REC switch to SEND and tune PLATE control for minimum meter reading. Return switch to REC.
4. Place MODE switch to CW position
5. Place SEND/REC switch to SEND and tune PLATE control for minimum IP (plate current) reading. Return switch to REC.
6. Place SEND/REC switch to SEND and increase LOAD control until meter reaches 225ma reading. Return switch to REC.
7. Place SEND/REC switch to SEND and tune PLATE control for minimum IP (plate current) reading. Return switch to REC.
8. Continue to alternate between PLATE minimum and LOAD increase until the dip in PLATE tuning is at 225ma.

**Optional:** Note: I do not do this step.

1. Place METER switch in RF position.
2. Place SEND/REC switch to SEND and alternately tune PLATE control and LOAD control for maximum output. These should require very little movement to attain maximum output. Return METER switch to IP position and place SEND/REC switch to SEND. If the plate current is not very close to 225ma, it could indicate a problem with neutralization of the final amplifier tubes.

Tuning is now complete.

Place meter switch to the IP position and the MODE switch to LSB or USB. Key the microphone. Plate current should read 60ma. Place meter switch to the ALC position. While speaking into the microphone, increase the MIC GAIN control until you see meter deflections that remain within the ALC range on the meter.

**Problems:**

No ALC reading when placing the SEND/REC switch to SEND.

1. Make sure HEATER switch is ON.
2. Make sure there is no key plugged into the KEY jack on back of radio.
3. Increase the CAR control and try again.

Have fun with your Hybrid.

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