



IcoTune Operating Notes


IMPORTANT: The IcoTune must be connected to the tuner accessory connector before the transceiver is powered up. If the transceiver is powered up before the IcoTune is connected, it will not function.

Operating Instructions


1. Connect the IcoTune to the tuner accessory connector on the back of the transceiver. See the operators manual for your transceiver.
2. Optional: connect any accessories to the 12V connector, if applicable.
2. Press the POWER ON button on the transceiver.
3. Press the CALL/TUNE button to start the IcoTune. A red *TUNE* indicator in the upper left corner of the IC7000 display illuminates. The IC703 and IC706 do not indicate tune mode on the display. The transmitter is keyed.

 To adjust the 'key down' time, use a small flat-blade screwdriver or an alignment tool to increase or decrease the length of time the transmitter is keyed.

 The internal SWR indicator on the IC7000 is disabled during the tune cycle. It functions normally during normal transceiver operation.

 The internal antenna tuner in the IC703 is disabled when the IcoTune is connected.

4. Adjust the antenna tuning while observing the SWR indication on an external SWR indicator.

 To extinguish the "TUNE" indication on the IC7000 display, momentarily press the CALL/TUNE button.

The tune cycle can be terminated early by pressing the CALL/TUNE button before the IcoTune times out.

Circuit Description

The IcoTune input circuit is very similar to the interface to the AH4 tuner. A high-value pullup resistor between pins 2 and 3 is recognized by the IC-7000 as an antenna tuner. An open-collector transistor, controlled by an analog timer, pulls pin 1 to ground to key the transceiver when a tune cycle is initiated. This is identical to the keying arrangement found in the AH4. This does not affect the thermal sensing arrangement in the IC7000. The SWR indication is disabled in the IC7000.

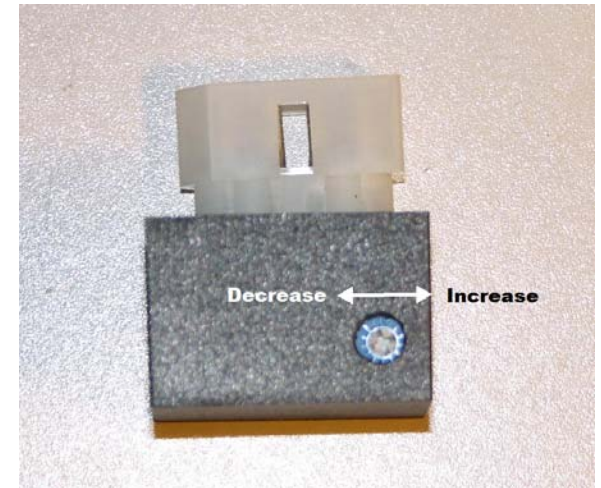
Power for the IcoTune is provided by the transceiver and fed to U1, a 78L05 regulator. Capacitors C1 and C2 ensure stable operation.

R1 pulls the START line up to signal to the transceiver that a tuner is connected. When the front panel Tune button is pressed, the level on the START pin falls approximately 3 volts. This signal is coupled to the trigger pin of U2, a 555 timer IC. The output of U2 goes high, driving Q1 into saturation. The collector of Q1 pulls the KEY line to ground, beginning the tune cycle. The discharge pin on U2 goes low at the same time, discharging timing capacitor C5.

Capacitor C5 is charged through R2 and R3 series resistors until the voltage reaches $\frac{2}{3}$ VCC (5V). When this happens, the output pin goes low and Q1 switches off, unkeying the transceiver.

Adjustment

To adjust the 'key down' time, use a small flat-blade screwdriver or an alignment tool. Counterclockwise decreases the time, clockwise increases it. Key down time is adjustable from about 5 seconds to 60 seconds.



Notes

Serial No. _____

Date of sale ____/____/____

