



## Most Common Service Questions for the Icom IC-735

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**Symptom:** Erratic display, segments missing from frequency display. Radio seems to work OK otherwise.

**Probable Cause:** Bad solder at IC1 display driver on display unit.

**Cure:** Resolder pins on IC1.

**Remarks:** IC1 is a surface mount IC.

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**Symptom:** Intermittent RX/TX. Intermittent high SWR. Seems like antenna is intermittent.

**Probable Cause:** Cracked solder joint at antenna connector.

**Cure:** Resolder joint at antenna connector where it connects to the filter unit. We recommend replacing the thin wire between the filter unit and antenna connector with a thicker wire to prevent future failure.

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**Symptom:** Intermittent RX. Seems like antenna is disconnected in receive mode. TX is OK.

**Probable Cause:** Cracked solder at external RX phone jack on main unit.

**Cure:** Resolder phono jack to main unit.

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**Symptom:** No TX, or low TX output on one or more bands with high current draw from power supply. Other bands are OK.

**Probable Cause:** Damaged components in low-pass filter.

**Cure:** Replace all obviously burned/overheated components on filter unit. Also inspect PA for overheating

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**Symptom:** Raspy-sounding mic audio when used on antenna. Radio sounds good when transmitting into dummy load. Power output seems normal. May be complaints of RFI

**Probable Causes:** 1) Station ground is inadequate. 2) Astron power supply used with unit needs additional RF decoupling. 3) RF feedback in mic circuit.

**Cure:** Check station ground. If an Astron power supply is being used with radio, install additional decoupling capacitors across output terminals. Short pins 6 & 7 in microphone connector to remove RF

feedback.

**Remarks:** If nothing helps, radio should be checked for spurious output. (see below)

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**Symptom:** Spurious TX on some bands. SWR reading may be high when transmitting into a dummy load. Power is low on some bands. Ic may be high.

**Probable Cause:** Bad components on PA unit caused by over-voltage or overheating.

**Cure:** Check and replace as needed: C25 & C29 (1000uF, 16v) and R25 (4.7 ohm, 2 watt) on PA unit. Also look for overheated components and solder joints on the L4 assembly.

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**Symptom:** Power drops off as unit warms up. ALC meter deflection remains high.

**Probable Cause:** APC out of alignment.

**Cure:** Follow APC alignment procedures in the service manual. (R262 on main unit.)

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**Symptom:** Distorted RX/TX, or no RX/TX on one or more bands. Distorted SSB audio sounds raspy and rough. Problem may be temperature related.

**Probable Causes:** Bad trimmer capacitors on PL unit, HPL VCO section.

**Cure:** Replace plastic trimmer capacitors C37, C45, C52, and C59 with ceramic equivalents. Also replace the reference oscillator trimmer C138.

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**Symptom:** Frequency instability.

**Probable Causes:** Unstable plastic trimmer capacitor C138 on PL unit.

**Cure:** Replace C138 with a ceramic equivalent. We also recommend replacing the HPL trimmers at this time.

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**Symptom:** Intermittent mic audio.

**Probable Causes:** Dirty mic gain control.

**Cure:** Spray-clean control with *Blue Showers* solvent.

**Remarks:** Using a cleaning solvent other than *Blue Showers* may cause damage by removing a substance inside the control that allows smooth movement of the slider.

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**Symptom:** VFO tuning is erratic, sometimes lags or skips when changing frequencies or bands. Sometimes least-significant digit in frequency displays "flutters" back and forth instead of changing incrementally when the VFO knob is turned slowly.

**Probable Causes:** Bad rotary encoder.

**Cure:** Substitute rotary encoder with a known good one. It is recommended that the rotary encoder be replaced as a complete assembly if it is bad.

**Remarks:** If the frequency tunes in only one direction, i.e. either up or down, there may be a problem on the logic unit.

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**Symptom:** No display, RX/TX. Inspection reveals PLL unlock.

**Probable Causes:** 1) Low power supply voltage. 2) Bad IC8 on PL unit.

**Cure:** Measure power supply voltage at pin 7 of either accessory jack. Should be not less than 12 volts for reliable operation. If OK, replace IC8 on PL unit.

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**Symptom:** No RX/TX when cold or warm. May have dead spots in tuning range of each band.

**Probable Causes:** PLL unlock

**Cure:** Align LPL lock voltage on PL unit.

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**Symptom:** Frequency unstable in TX on 10 meters, especially after warm-up.

**Probable Causes:** PL unit needs factory update.

**Cure:** On PL unit, change value of R163 from 3.3k to 1.5k, and spread coil L36.

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**Symptom:** Mic gain is low when using Heil microphone element.

**Cure:** Change value of R235 on PL unit to 200k.

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**Symptom:** Radio trips/shuts down power supply when power connector is plugged in, even when radio is turned off.

**Probable Cause:** Shorted PA transistors.

**Cure:** Replace shorted PA transistors. The pre-driver and driver transistors are probably bad too. Check electrolytic capacitors C25 and C29 on PA unit for swelling and replace if needed.

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**Symptom:** Drastic change in audio frequency response between USB and LSB., i.e. USB audio has too much bass while LSB audio has too much treble. USB/LSB RX frequency response may be equalized, to a degree, by adjustment of the front panel PBT control. TX frequency response remains poor.

**Probable Cause:** Misadjustment of the BFO and/or PBT shift oscillator, or bad FL-30 on main unit.

**Cure:** Realign the BFO and PBT shift oscillator. If this doesn't help, replace the FL-30.

**Remarks:** Some filters are better than others so some test selection may be needed to satisfactorily alleviate the problem. The better-performing (but more expensive) FL-80 filter can be substituted for the FL-30.

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**Symptom:** "Chirp" in CW operation.

**Probable Cause:** 1) Low power supply voltage in TX. 2) Astron power supply needs additional RF decoupling. 3) Early production IC-735 needs factory update.

**Cure:** Check power supply voltage at pin 7 of either accessory jack in TX mode. It should not vary excessively from RX standby voltage or drop below 12 volts. If an Astron power supply is being used with radio, install additional RF decoupling capacitors to its output terminals. If the IC-735 is an early production unit, it may need a factory update to prevent chirp. Call Icom Technical Support for update information.

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