

# Motorola XTS2500 Portable Radio Care and Troubleshooting

## Radio Care

- The XTS2500 'B' model radio casing has two vent ports that allow for pressure equalization in the radio. Never poke these vents with any objects, such as needles, tweezers, or screwdrivers. This could create leak paths into the radio and the radio's submergibility will be lost.
- If the radio battery contact area has been submerged in water, dry and clean the radio battery contacts with a lint-free cloth before attaching a battery to the radio. Otherwise, the water could short-circuit the radio.
- If the radio has been submerged in water, shake the radio well so that any water that may be trapped inside the speaker grille and microphone port can be removed. Otherwise, the water will decrease the audio quality of the radio.
- Do not disassemble the radio. This could damage radio seals and result in leak paths into the radio. Any radio maintenance should be performed only by a qualified radio technician.

|   |  |
|---|--|
|  <p><b>Caution</b></p> | <p><b>Do not use solvents to clean your radio. Spirits may permanently damage the radio housing.</b></p> |
|   | <p><b>Do not submerge the radio in the detergent solution.</b></p>                                       |

## Handling

- Do not pound, drop, or throw the radio unnecessarily. Never carry the radio by the antenna.
- Avoid subjecting the radio to an excess of liquids.
- Avoid subjecting the radio to corrosives, solvents or spirits.
- Do not disassemble the radio.
- Keep the accessory-connector cover in place until ready to use the connector. Replace the cover immediately once the accessory has been disconnected.

## Troubleshooting

| Symptom   | Possible Cause                      | Correction or Test  |
|---|-------------------------------------|---|
| Radio Dead; Display Does Not Turn On  | 1. Dead Battery                     | Replace with charged battery.   |
|   | 2. Blown Fuse                       | Send radio to the Radio Shop.   |
|   | 3. On/Off Switch                    |   |
|   | 4. Regulators                       |   |
| Radio Will Not Turn Off   | VOCON Board                         | Send radio to the Radio Shop.   |
| Radio Dead; Display Turns Off   | RF or VOCON Board                   | Send radio to the Radio Shop.   |
| No Receive Audio or Receiver Does Not Unmute  | Programming                         | Send radio to the Radio Shop.   |
| Audio Distorted or Not Loud Enough  | Synthesizer Not On Frequency        | Send radio to the Radio Shop.   |
| RF Sensitivity Poor – Does not receive radio traffic.                                       | 1. Synthesizer Not On Frequency     | Send radio to the Radio Shop.   |
|   | 2. Antenna Switch/Connector         |   |
|   | 3. Receiver Front-End Tuning        |   |
| No RF Power Out – Poor transmit range.  | 1. TX Power Level or Frequency      | Send radio to the Radio Shop.   |
|   | 2. No Injection To Power Amplifier  |   |
|   | 3. Antenna Switch/Connector         |   |
| No Modulation; Distorted Modulation   | 1. Programming                      | Send radio to the Radio Shop.   |
|   | 2. VOCON Board                      |   |
| Bad Microphone Sensitivity  | 1. Check Deviation and Compensation | Send radio to the Radio Shop.   |
|   | 2. Microphone                       |   |
| No/Low signaling (PL, DPL, MDC)   | 1. Programming                      | Send radio to the Radio Shop.   |
|   | 2. VOCON Board                      |   |
| No "KEYLOAD" on Radio Display When Keyloading Cable is Attached to the Radio Side Connector | 1. Defective Keyloader Cable        | Send radio to the Radio Shop.   |
|   | 2. Defective Radio                  |   |
| Keyloader Displays "FAIL."  | 1. Wrong Keyloader Type             | Use correct keyloader type. Refer to Keyloader User Guide for more information. |
|   | 2. Bad Keyloader                    | Try another keyloader   |
|   | 3. Defective Radio                  | Send radio to the Radio Shop.   |

# Battery

## Battery Life

Battery life is determined by several factors. Among the more critical are the regular overcharge of batteries and the average depth of discharge with each cycle. Typically, the greater the overcharge and the deeper the average discharge, the fewer cycles a battery will last. For example, a battery which is overcharged and discharged 100% several times a day, will last fewer cycles than a battery that receives less of an overcharge and is discharged to 50% per day. Further, a battery which receives minimal overcharging and averages only 25% discharge, will last even longer.

## Charging the Battery

Motorola batteries are designed specifically to be used with a Motorola charger and vice-versa. Charging in non-Motorola equipment may lead to battery damage and void the battery warranty. Motorola-authorized battery chargers may not charge batteries other than the ones listed in the user manual. The battery should be at about 77 °F (25 °C) (room temperature), whenever possible. Charging a cold battery (below 50 °F [10 °C]) may result in leakage of electrolyte and ultimately in failure of the battery. Charging a hot battery (above 95 °F [35 °C]) results in reduced discharge capacity, affecting the performance of the radio. Motorola rapid-rate battery chargers contain a temperature-sensing circuit to ensure that batteries are charged within the temperature limits stated above.

## Battery Charge Status

Your radio can indicate your battery's charge status through:

- LED and sounds
- Conventional fuel gauge symbol on the display
- Smart fuel gauge symbol on the display

### **LED and Sounds**

When your battery is low:

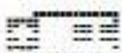
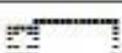
- You see the LED flash red when the **PTT** button is pressed
- You hear a low-battery "chirp" (short, high-pitched tone)

### **Conventional Fuel Gauge Symbol**

A blinking fuel gauge symbol () is displayed only when the battery voltage drops to low level. In this case, replace the battery with a fully charged one.

### **Smart Fuel Gauge Symbol**

Consult the Smart Battery manual. All conditions must be met for a battery to be classified as a "Smart Battery." When your radio has a Smart Battery installed, the fuel gauge symbol is always displayed:

| <b>Gauge shows</b>  | <b>if the battery's charge is</b>               |
|---|---|
|  | 71% to 100% full                                |
|  | 41% to 70%                                      |
|  | 11% to 40%                                      |
|  | 10% or less (at 10%, the gauge begins blinking) |

Replace the battery with a fully charged one when the fuel gauge shows the lowest level.