

TYT TYT-TH-9800

TYT TH-9800 Quad Band Mobile Transceiver User Manual

Comprehensive guide for setup, operation, and maintenance of your TYT TH-9800 radio.

1. INTRODUCTION

The TYT TH-9800 is a versatile Quad Band FM Radio Transceiver designed for amateur radio enthusiasts. It supports transmit and receive operations across the 10 Meter, 6 Meter, VHF 2 Meter, and UHF 70cm bands. This manual provides essential information for the proper installation, operation, and maintenance of your TH-9800 transceiver.

2. PRODUCT OVERVIEW

2.1 Key Features

- **Quad Band Operation:** Transmits on 10M (29MHz), 6M (52MHz), 2M (146MHz), and 70cm (440MHz) bands.
- **Dual Display & Twin Receive:** Allows simultaneous monitoring of two different frequencies.
- **Cross Band Repeater Mode:** Enables the radio to function as a cross-band repeater.
- **Extensive Memory Channels:** Over 800 alphanumeric memory channels for storing frequencies.
- **Signaling Capabilities:** Supports CTCSS, DCS, DTMF, 2-Tone, and 5-Tone signaling.
- **Remote Mountable Faceplate:** Detachable front panel for flexible installation options.
- **Full Keypad Microphone:** Included microphone with full numeric keypad for direct frequency entry and control.
- **Wide Receive Range:** Capable of receiving frequencies from 26-33MHz, 47-54MHz, 110-180MHz (including AM Air band), 350-399MHz, 430-512MHz, and 750-947MHz.
- **Adjustable Power Output:** Offers multiple lower power settings in addition to 50W (2M & VHF) / 40W (10M & UHF).
- **Built-in Cooling Fan:** Ensures stable operation during extended use.

2.2 Package Contents

Upon opening the package, verify that all items listed below are present and in good condition:

- 1x TYT TH-9800 Mobile Transceiver Unit
- 1x Handheld Microphone with Keypad
- 1x DC Power Cable with Fuses
- 1x Remote Mountable Faceplate
- 1x Fixed Mounting Bracket
- 1x Microphone Hanger
- 1x Screws and Accessories Kit
- 1x User's Manual (this document)



Figure 2.2.1: All components included in the TYT TH-9800 package, including the main transceiver unit, handheld microphone, power cable, mounting hardware, and user manual.

3. SPECIFICATIONS

Table 3.1: General Specifications

Category	Specification
Frequency Range (RX/TX)	26-33MHz, 47-54MHz, 136-174MHz, 400-480MHz
Frequency Range (RX only)	108-136MHz (AM band), 320-399MHz, 750-950MHz
Channel Capacity	809 channels
Channel Spacing	5/10/12.5/15/20/25/50KHz
Modes of Emission	F3, F2, F1

Category	Specification
Antenna Impedance	50 Ohms, unbalanced (SO-239 connector)
Frequency Stability	±5 PPM (-10°C to +60°C)
Operating Voltage	13.8VDC (±15%), Negative ground
Current Consumption (Approx.)	RX: 0.5A (Squelched); TX: 8.0A (50/430MHz), 8.5A (29/144MHz)
Case Size (WxHxD)	140x41.5x168mm (w/o knobs & connectors)
Weight (Approx.)	1Kg (2.2lb)

Table 3.2: Transmitter Specifications

Category	Specification
Output Power	50/20/10/5W (29/50/144MHz)
Modulation Type	Variable Reactance
Maximum Deviation	Better than -60dB (29MHz: Better than -50dB)
Modulation Distortion	Less than 3%
Microphone Impedance	2kΩ
DATA Jack Impedance	10KΩ

Table 3.3: Receiver Specifications

Category	Specification
Circuit Type	Double-conversion super-heterodyne
Intermediate Frequency	45.05MHz/450KHz (left band), 47.25MHz/450KHz (right band)
Sensitivity (for 12dB SINAD)	Better than 0.2μV
Squelch Sensitivity	Better than 0.16μV
Selectivity (-6dB/-60dB)	12KHz/30KHz
Maximum AF Output	2W@8Ω for 5% THD
AF Output Impedance	4-16Ω

4. SETUP

The TYT TH-9800 can be installed in a vehicle or at a fixed station. The main unit and faceplate can be mounted separately for flexible placement.

1. **Select a Location:** Choose a stable, well-ventilated location for the main transceiver unit, away from direct sunlight and excessive heat. Ensure adequate space for the cooling fan.
2. **Install Mounting Bracket:** Use the provided fixed mounting bracket and screws to secure the main unit.
3. **Connect Faceplate:** If using the remote mountable faceplate, connect it to the main unit using the provided control cable. The faceplate can be mounted in a convenient location for operation.



Figure 4.1.1: Side view of the TYT TH-9800 transceiver unit, showing its compact design suitable for mobile or fixed installations.



Figure 4.1.2: Rear view of the TYT TH-9800, highlighting the built-in cooling fan and SO-239 antenna connector.

4.2 Power Connection

Connect the supplied DC power cable to a 13.8VDC power source (e.g., vehicle battery or regulated power supply). Ensure correct polarity (red to positive, black to negative). The power cable includes inline fuses for protection.



Figure 4.2.1: Close-up of the cooling fan and SO-239 antenna connector on the rear of the transceiver, emphasizing the importance of proper ventilation and antenna connection.

4.3 Antenna Connection

Connect a compatible quad-band antenna to the SO-239 antenna connector on the rear of the transceiver. Using an antenna designed for the specific bands (10M, 6M, 2M, 70cm) is crucial for optimal performance and to prevent damage to the radio. *Note: A dual-band antenna is not compatible with this quad-band radio.*

4.4 Microphone Connection

Plug the handheld microphone into the designated port on the front panel of the transceiver. The microphone features a full keypad for direct frequency entry and function control.



Figure 4.4.1: The handheld microphone for the TYT TH-9800, featuring a coiled cord and numeric keypad.



Figure 4.4.2: Detailed view of the TYT TH-9800 microphone, showing the keypad and side function buttons for easy operation.

5. OPERATING INSTRUCTIONS

The TYT TH-9800 offers a wide array of functions for amateur radio operation. Familiarize yourself with the front panel controls and microphone keypad for efficient use.



Figure 5.0.1: The TYT TH-9800 mobile transceiver connected to its handheld microphone, ready for operation.

5.1 Basic Operation

- **Power On/Off:** Press and hold the power button (usually located on the front panel or microphone) to turn the unit on or off.
- **Volume Control:** Adjust the volume using the dedicated volume knob. The TH-9800 features separate volume controls for twin receive.
- **Squelch Control:** Adjust the squelch level to eliminate background noise when no signal is present. Separate squelch controls are available for twin receive.
- **Frequency Selection:** Use the main tuning knob or the microphone keypad for direct frequency entry.
- **Band Switching:** Utilize the band selection buttons (A, B, C, D, E, F) to switch between the different operating bands.
- **Display Brightness:** Adjust the display brightness setting for optimal visibility in various lighting conditions.

5.2 Advanced Functions

- **Dual Band / Dual Receive (Full Duplex):** The radio can receive on two different bands simultaneously. This allows for full duplex operation, transmitting on one band while receiving on another.
- **Cross Band Repeat:** Configure the radio to act as a cross-band repeater, re-transmitting signals received on one band to another. Refer to the detailed user manual for specific setup procedures.
- **Memory Channels:** The TH-9800 supports 809 memory channels.
 - *Storing Frequencies:* Enter the desired frequency and settings (offset, tone, etc.), then follow the manual's instructions to save it to a memory channel.
 - *Recalling Frequencies:* Switch to memory mode and use the tuning knob or keypad to select stored channels.

- *Channel Name Editing:* Customize memory channels with alphanumeric names for easy identification.

- **CTCSS/DCS (PL & DPL):** Use Continuous Tone-Coded Squelch System (CTCSS) or Digital-Coded Squelch (DCS) for selective calling and to filter out unwanted signals. Ensure correct CTCSS/DCS settings for both transmitting and receiving.
- **DTMF Signaling:** The DTMF microphone allows for sending Dual-Tone Multi-Frequency signals for repeater control or other applications.
- **Scanning:** The radio supports multi-function scanning modes to find active frequencies.
- **Repeater Offset:** Set appropriate repeater offsets for transmitting on repeater frequencies.
- **Keypad Lock:** Activate the keypad lock function to prevent accidental changes to settings.

6. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your TYT TH-9800 transceiver.

- **Cleaning:** Regularly wipe the radio's exterior with a soft, dry cloth. Avoid using harsh chemicals or abrasive cleaners.
- **Ventilation:** Ensure the built-in cooling fan and ventilation slots are free from dust and obstructions to prevent overheating.
- **Fuse Replacement:** The power cable includes fuses for protection. If the radio does not power on, check and replace the fuses if necessary. Always use a fuse of the correct rating.
- **Antenna & Cable Inspection:** Periodically inspect antenna connections and cables for wear, damage, or corrosion.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your TH-9800 transceiver.

Table 7.1: Common Troubleshooting Steps

Problem	Possible Cause / Solution
Radio does not power on / No display	Check power cable connections. Verify power source (13.8VDC). <i>Replace the backup fuse on the power cable if blown.</i>
No audio / Weak audio	Adjust volume knob. Adjust squelch level. Ensure microphone is securely connected.
Cannot transmit / Transmitting with noise	Verify antenna connection and SWR. <i>Ensure CTCSS/DCS settings are correctly matched on both transmitting and receiving radios to avoid noise during transmission.</i> Check power output settings.
Limited range	Ensure a compatible quad-band antenna is used and properly tuned. Check antenna cable for damage. Verify power output setting (ensure it's not set to low power).

8. WARRANTY AND SUPPORT

For detailed warranty information, please refer to the documentation provided with your purchase. For technical support or further assistance, please contact TYT customer service.

An official User Manual (PDF) is available for download: [Download User Manual PDF](#)

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question