

YZTERA CQV-SWR-508

SWR Power Meter CQV-SWR-508

INSTRUCTION MANUAL

1. Product Overview

The YZTERA CQV-SWR-508 is a 200W Digital SWR & Power Meter designed for radio enthusiasts and professionals. It operates across a wide frequency range of 1.8-54Mhz, providing direct readings of forward power, reflected power, and Standing Wave Ratio (SWR). Equipped with a 4.3-inch IPS color LCD display, it offers clear and comprehensive data visualization. Key features include a high SWR alarm, adjustable auto-shutdown, and fine-tuning capabilities for both power and SWR readings.

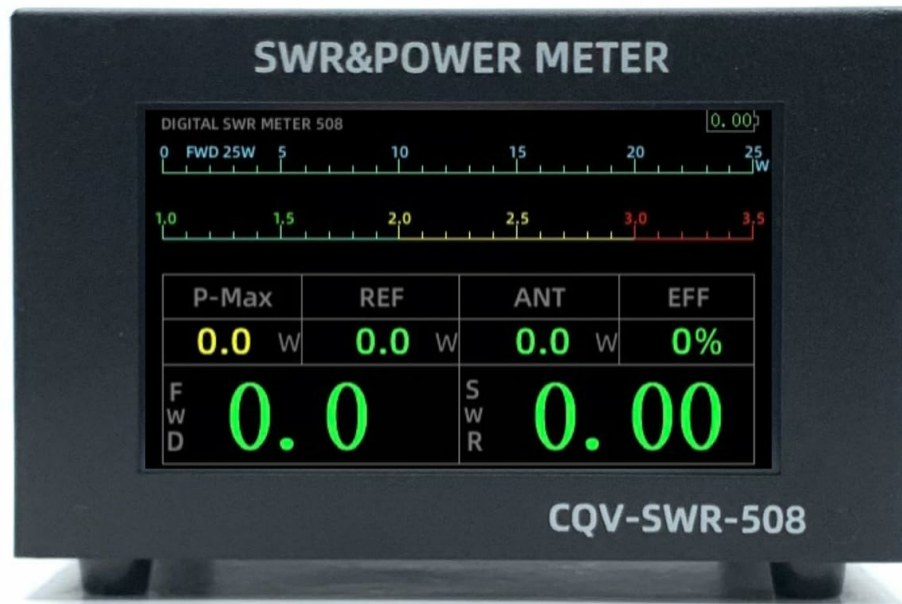
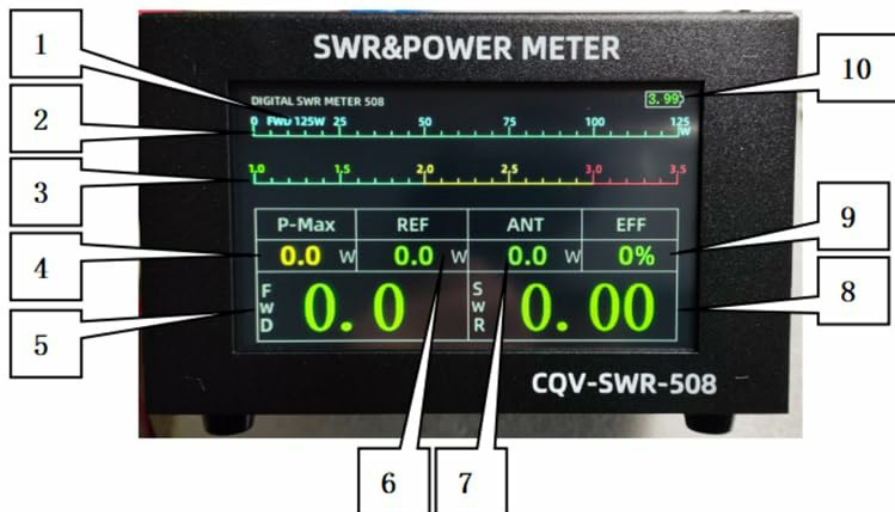


Figure 1: Front view of the CQV-SWR-508 Digital SWR & Power Meter, showing the display screen.

This device supports various modes including FM, CW, AM, and FT8, with a recommended long-term use power limit of 120W to ensure optimal performance and longevity. Its robust design and intuitive interface make it an essential tool for monitoring and optimizing antenna system performance.

2. Product Components and Display Interface

Familiarize yourself with the main components and the information presented on the meter's display.



- 1, Gear display: 25W/125W/200W
- 2, Power progress bar: indicates the current power
- 3, Standing wave progress bar: indicates the current standing wave
- 4, Maximum power: the maximum power when the radio is transmitted (hold for 2 seconds)
- 5, Forward power: radio transmission power
- 6, Reflected power: match poor reflected back to the radio signal power
- 7, Antenna power: forward power minus reflected power remaining power
- 8, Standing wave ratio: the ratio of reflected power to forward power
- 9, Antenna efficiency: the percentage of antenna power and forward power
- 10, Battery voltage: indicates the current battery voltage

Figure 2: Labeled display interface of the CQV-SWR-508.

Display Elements:

1. **Gear display:** Indicates the current power range (25W/125W/200W).
2. **Power progress bar:** Visually represents the current power output.
3. **Standing wave progress bar:** Visually represents the current standing wave ratio.
4. **Maximum power (P-Max):** Displays the peak power when the radio transmits (hold for 2 seconds to reset).
5. **Forward power (FWD):** Shows the radio transmission power.
6. **Reflected power (REF):** Indicates power reflected back to the radio due to impedance mismatch.
7. **Antenna power (ANT):** Calculated as forward power minus reflected power, representing power delivered to the antenna.
8. **Standing Wave Ratio (SWR):** The ratio of reflected power to forward power.
9. **Antenna efficiency (EFF):** The percentage of antenna power relative to forward power.
10. **Battery voltage:** Indicates the current battery charge level.

3. Setup and Connections

Proper connection of the SWR & Power Meter is crucial for accurate readings and safe operation.



- 1, Power switch: "I" Turn on, "O" Turn off
- 2, ANT: Connect the antenna
- 3, TX: Connect the station
- 4, charging port: type_c interface, input voltage DC Max 5.5v, current greater than 1 amp.

Figure 3: Rear panel connections of the CQV-SWR-508.

Connection Points:

1. **Power Switch:** Toggle to "I" to turn on the device, "O" to turn off.
2. **ANT (Antenna) Port:** Connect your antenna to this UHF (SL16) interface.
3. **TX (Transceiver) Port:** Connect your radio transceiver (station) to this UHF (SL16) interface.
4. **CHARGE Port:** Type-C DC5V/1A interface for charging the internal 3.7V/4000mAh battery. Ensure input voltage does not exceed 5.5V and current is at least 1 Amp.

Charging the Device: Connect a compatible Type-C charger to the CHARGE port. The battery voltage is displayed on the screen. An alarm will flash if the voltage drops below 3.4V, and the device will automatically shut down if it falls below 3.35V to protect the battery.

4. Operating Instructions

The CQV-SWR-508 features an intuitive menu system for configuration and calibration.

Operation Menu



Figure 4: Operation Menu interface and settings.

Menu Navigation:

Access the operation menu to adjust various settings. The menu typically includes options for Brightness, Off time, SWR-ALM (SWR Alarm), and Calibration.

- **Brightness Settings:** Adjust the display brightness from 0 to 100.
- **Off Time:** Configures the automatic shutdown timer.
 - Default setting is 0, meaning no automatic shutdown without operation.
 - Can be set from 2 to 98 minutes for automatic shutdown.
 - Setting to 99 minutes will turn off the automatic shutdown function.
- **SWR-ALM (SWR Alarm Point Set):** Sets the SWR threshold for an alarm.
 - Default alarm point is 2.0.
 - Adjustable range is 1.5 to 5.0.
 - If set to 5.1, the buzzer alarm function is turned off.
- **Calibration (FWD & SWR Fine-tuning):** Allows for fine adjustment of power and SWR readings.
 - **FWD (Forward Power) Fine-tuning:** Default value is 1.00. Power can be fine-tuned within

±20%. It is recommended to calibrate power first.

- **SWR (Standing Wave) Fine-tuning:** Default value is 1.00. SWR can be fine-tuned within ±20%.
- *Note:* If the unit is not a high-precision instrument, self-calibration is not recommended without professional equipment.

5. Maintenance

To ensure the longevity and optimal performance of your CQV-SWR-508 SWR & Power Meter, follow these general maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Avoid using abrasive cleaners or solvents, which may damage the casing or display.
- **Storage:** Store the meter in a cool, dry place away from direct sunlight, extreme temperatures, and high humidity.
- **Handling:** Handle the device with care to prevent physical damage. Avoid dropping or subjecting it to strong impacts.
- **Battery Care:** For optimal battery life, avoid fully discharging the battery frequently. Recharge the device when the low battery alarm is triggered. If storing for extended periods, charge the battery to approximately 50% and recharge every few months.
- **Connections:** Ensure all cable connections are secure and free from dust or debris. Periodically check the UHF connectors for any signs of wear or corrosion.

Do not attempt to open the device or perform internal repairs, as this may void the warranty and could lead to damage or injury. Refer to qualified service personnel for any repairs beyond basic maintenance.

6. Troubleshooting

This section addresses common issues you might encounter with your CQV-SWR-508 SWR & Power Meter.

Problem	Possible Cause	Solution
Device suddenly shuts off or resets during use.	Low battery voltage, unstable power supply, or internal protection mechanism triggered by high power/SWR.	Ensure the battery is fully charged. Use a stable power source for charging. Check if operating within recommended power limits (e.g., not exceeding 120W for long periods in FM/CW/AM/FT8 modes). Verify SWR is within acceptable limits.
Inaccurate SWR or Power readings.	Improper calibration, faulty cables/connectors, or external interference.	Check all cable connections (ANT, TX) for proper seating and condition. If you suspect calibration issues, and have access to a known accurate reference meter, you may attempt fine-tuning via the menu (refer to Operating Instructions). Ensure no strong RF interference sources are nearby.
Battery does not hold charge or drains quickly.	Aging battery, improper charging, or device not fully shutting down.	Ensure you are using a compatible Type-C charger (DC5V/1A). Verify the auto-shutdown setting in the menu. If the issue persists, the battery may need replacement by a qualified technician.

Problem	Possible Cause	Solution
Display is dim or unreadable.	Brightness setting is too low.	Adjust the brightness setting in the operation menu.

If you encounter a problem not listed here or if the suggested solutions do not resolve the issue, please contact customer support for further assistance.

7. Technical Specifications

Parameter	Value
Working Frequency	1.8 - 54 Mhz
Measuring Range (Power)	0.5 - 200W (Recommended max 120W for long-term use in FM, CW, AM, FT8 modes)
Standing Wave Range	1 - 99.9 (Default alarm at >2.0, adjustable)
Charging Interface	Type-C DC5V/1A (Max 5.5V)
Battery Model	3.7V/4000mAh (Auto-shutdown at <3.35V)
Interface Type	UHF (SL16)
Shell Size (Excluding Protrusions)	132mm x 100mm x 82mm (5.2"L x 3.23"H approx.)
Bare Metal Weight	Approx. 800 grams (1.96 pounds)
Display	4.3-inch IPS Color LCD (480*272 resolution)

8. Warranty and Support

For information regarding the warranty period and terms for your YZTERA CQV-SWR-508 SWR & Power Meter, please refer to the purchase documentation or contact the retailer from whom you purchased the product. Warranty details may vary based on region and seller policies.

If you require technical assistance, have questions about product operation, or need to report a defect, please contact YZTERA customer support or your authorized dealer. When contacting support, please have your product model (CQV-SWR-508) and purchase details readily available.

Manufacturer: YZTERA