

## Mcbazel SW-102

# Mcbazel Surecom SW-102 Digital VHF/UHF Antenna Power & SWR Meter

## USER MANUAL

### Introduction

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The Mcbazel Surecom SW-102 Digital VHF/UHF Antenna Power & SWR Meter is a compact and versatile instrument designed for radio enthusiasts and professionals. It provides direct digital readout of forward and reflected power, along with Standing Wave Ratio (SWR), without the need for calibration. This meter is essential for optimizing antenna systems within the VHF (144-148MHz) and UHF (430-450MHz) amateur radio bands, supporting frequencies from 125MHz to 525MHz. It features a low insertion loss design, allowing for permanent connection, and comes with N-Type base connectors, including adapters for SO239.



Figure 1: Mcbazel Surecom SW-102 Digital VHF/UHF Antenna Power & SWR Meter.

## Product Features

- VSWR and Power Measurement:** Direct digital readout of forward and reflected power, and SWR, eliminating the need for manual calibration.
- Wide Frequency Range:** Operates within 125 - 525MHz, optimized for VHF (144-148MHz) and UHF (430-450MHz) amateur radio bands.

- **High Power Handling:** Capable of measuring power up to 120W.
- **Low Insertion Loss:** With an insertion loss of 0.3 decibels or less, it can be permanently connected to your setup.
- **N-Type Connectors:** Equipped with robust N-Type female ports for high-frequency accuracy and durability. Includes 2 N-Type to SO239 adapters.
- **Rechargeable Battery:** Features a built-in Lithium Polymer battery (600 mAh) for portable use.
- **Measurement Modes:** Measures CW, AM, and FM signals.



Figure 2: Visual representation of key product features.

## Package Contents

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

- 1x Surecom SW-102 Digital VHF/UHF Antenna Power & SWR Meter
- 2x N-Type to SO239 Adapters

- 1x USB Charging Cable
- 1x Power Adapter (plug)
- 1x User Manual (this document)
- 1x Lithium Polymer battery (pre-installed)

# Package Includes

## 1x SW-102 Power & SWR Meter



2x Accessories



1x USB Cable



1x plug



1x User Manual

Figure 3: Included items in the product package.

## Setup

1. **Initial Charging:** Before first use, connect the provided USB charging cable to the meter's 5V Micro USB port and plug it into the power adapter.

The LED indicator will be red while charging and turn green when fully charged.

# Convenient USB Charge

5V Micro USB Input



Figure 4: Connecting the USB charging cable to the meter.

## 2. Connecting to Radio and Antenna:

- Identify the "TX" port on the meter (for connection to your radio) and the "ANT" port (for connection to your antenna or dummy load).
- Connect your radio's antenna output to the "TX" port of the SW-102 meter.
- Connect your antenna or a dummy load to the "ANT" port of the SW-102 meter.
- Use the provided N-Type to SO239 adapters if your radio or antenna uses SO239 connectors. For other connector types (e.g., BNC, SMA, PL-259, TNC), additional third-party adapters are required and not included.

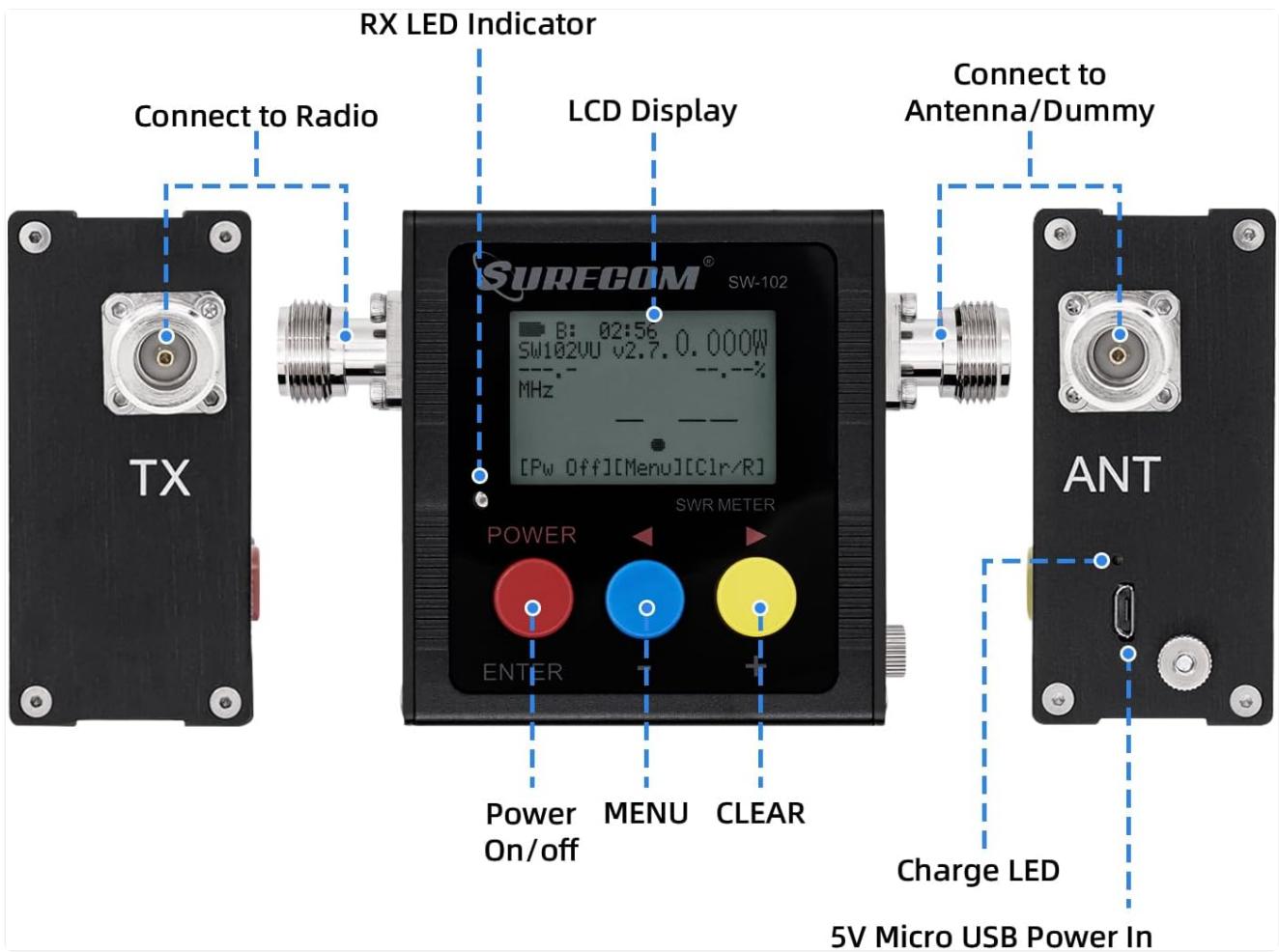


Figure 5: Port identification and connections.

3. **Optimal Measurement Conditions:** For the best SWR measurement results, it is recommended to use a metal sheet (not included) as a ground plane, especially with certain antenna types. Avoid placing objects nearby or horizontally during testing, as this can affect the accuracy of the measurements.

# Correctly use the radio to measure S.W.R.

If you want the best S.W.R. effect, please use metal sheet (excluded).



\*There are objects nearby and placed horizontally will affect the test

Figure 6: Guidelines for accurate SWR measurement.

## Operating Instructions

- Power On/Off:** Press and hold the red "POWER" button for 2 seconds to turn the device on or off.
- Display Features:** The LCD display shows various parameters including Battery Level, RF Power, Frequency Counter, VSWR Level, and VSWR.

# LCD Display Features

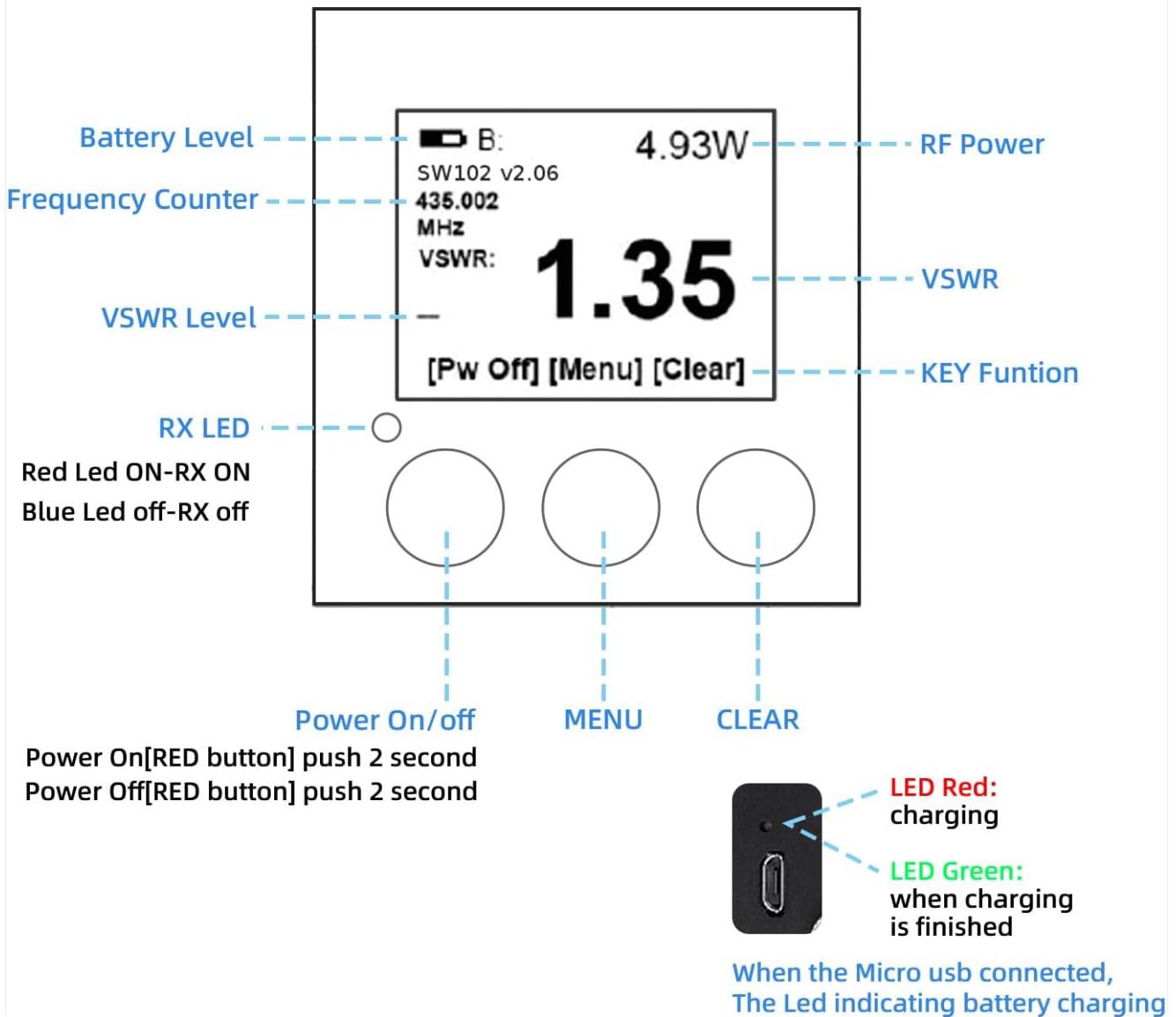


Figure 7: Understanding the LCD display.

### 3. Measuring SWR and Power:

- Ensure the meter is properly connected between your radio and antenna/dummy load.
- Power on the SW-102 meter.
- Activate the transmit function on your radio. The meter will automatically display the forward power, reflected power, and SWR.
- The meter measures CW, AM, and FM signals. It is not designed to measure RTTY or SSB signals.

### 4. Button Functions:

- Red Button (POWER/ENTER):** Long press for power on/off. Short press for Enter/Confirm.
- Blue Button (MENU/-):** Used to navigate menus or decrease values.
- Yellow Button (CLEAR/+):** Used to clear readings or increase values.

## Specifications

Feature	Value
Brand	Mcbazel
Model Number	4336324474 (SW-102)
Frequency Range	125 - 525MHz
Measurable Power Range	1 - 120W (+-0.5%)
Impedance	50 Ohm
Battery	600 mAh Lithium Polymer (included)
Connectors	N-Type Base Connectors
Item Weight	12 ounces (approx. 340g)
Product Dimensions	7.17 x 1.81 x 4.8 inches (approx. 18.2 x 4.6 x 12.2 cm)
Color	Black



Figure 8: Product dimensions.

## Maintenance

- Cleaning:** Use a soft, dry cloth to clean the exterior of the meter. Do not use liquid cleaners or aerosols.
- Protective Film:** The display comes with a protective film. Carefully remove this film before your first use to ensure optimal display clarity.
- Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- Battery Care:** To prolong battery life, avoid fully discharging the battery frequently. Recharge the device regularly, especially if it will be stored for extended periods.

## Troubleshooting

Problem	Possible Cause / Solution
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Problem	Possible Cause / Solution
<b>No Display / Device Not Powering On</b>	<ul style="list-style-type: none"> <li>◦ Battery is low or depleted. Recharge the device using the provided USB cable and power adapter.</li> <li>◦ Power button not held long enough. Press and hold the red POWER button for 2 seconds.</li> </ul>
<b>Inaccurate SWR Readings</b>	<ul style="list-style-type: none"> <li>◦ Incorrect connection. Ensure the radio is connected to "TX" and the antenna/dummy load to "ANT".</li> <li>◦ Interference from nearby objects. Ensure the meter is clear of obstructions during measurement.</li> <li>◦ Antenna tuning issue. The SWR reading indicates the antenna itself may need tuning.</li> <li>◦ Operating outside specified frequency range (125-525MHz).</li> <li>◦ Attempting to measure Digital Radio (DMR), RTTY, or SSB signals. This meter is not compatible with these modes.</li> </ul>
<b>Charging LED not illuminating</b>	<ul style="list-style-type: none"> <li>◦ USB cable or power adapter is faulty. Try a different cable or adapter.</li> <li>◦ Charging port is damaged. Contact customer support.</li> </ul>

#### Important Compatibility Notes:

- This meter is **NOT compatible** with Digital Radio (e.g., DMR Digital Radio).
- It is **NOT for CB Radio** operating on 27MHz CB channel frequencies. It is designed for higher VHF/UHF bands.
- The meter can measure **CW, AM & FM only**. It cannot measure RTTY and SSB.

## Warranty and Support

Mcbazel stands behind the quality of its products. This product is covered by a standard manufacturer's warranty against defects in materials and workmanship. For specific warranty terms and conditions, please refer to the warranty card included in your package or visit the official Mcbazel website.

If you encounter any issues or have questions regarding the operation, maintenance, or troubleshooting of your Surecom SW-102 meter, please contact Mcbazel customer support. Our dedicated team is available to assist you.

You can find contact information for support on the product packaging or through the retailer where you purchased the device.