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> [FMUSER CB100 CB Base Antenna User Manual](#)

fmuser CB100

FMUSER CB100 CB Base Antenna User Manual

Model: CB100 | Brand: fmuser

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1. INTRODUCTION

The FMUSER CB100 CB Base Antenna is designed to enhance the signal reception and transmission range for 27MHz CB radio systems. This antenna features a durable, weatherproof construction suitable for outdoor environments and is engineered for optimal performance with a wide range of CB radios. Proper installation and maintenance, as outlined in this manual, will ensure reliable communication and extend the lifespan of your CB radio system.

2. SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating the antenna. Failure to follow these instructions may result in injury or damage to equipment.

- **Electrical Hazard:** Never install the antenna near power lines. Contact with power lines can be fatal.
- **Lightning Protection:** Install appropriate lightning arrestors and ensure proper grounding for the antenna and associated equipment.
- **Fall Hazard:** Use caution when working at heights. Ensure stable footing and use appropriate safety gear.
- **Structural Integrity:** Ensure the mounting structure can safely support the antenna's weight and withstand wind loads.
- **Tools:** Use correct tools for assembly and installation.
- **Children:** Keep children away from the installation area.

3. PACKAGE CONTENTS

Verify that all components are present before beginning installation.



Figure 3.1: All components included in the FMUSER CB100 CB Base Antenna package.

- Antenna Base Unit with SO239 UHF Female Connector
- Multiple Aluminum Radiating Elements (various lengths)
- Ground Plane Radials
- Mounting Brackets (U-bolts, nuts, washers)
- Assembly Hardware (screws, bolts)

4. SETUP & INSTALLATION

This section provides instructions for assembling and installing your FMUSER CB100 CB Base Antenna. It is recommended to have assistance for safe installation, especially when working at heights.

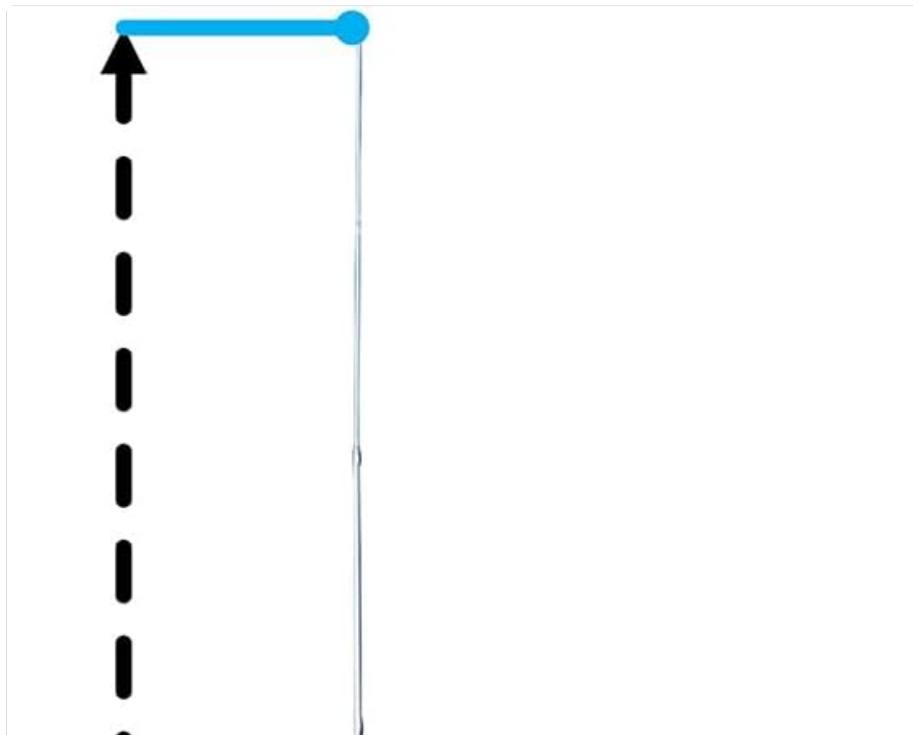
4.1. Assembly

1. **Identify Components:** Lay out all antenna components and familiarize yourself with each part as shown in Figure 3.1.
2. **Attach Radiating Elements:** Carefully connect the aluminum radiating elements to the antenna base unit. Ensure all connections are secure but do not overtighten. Refer to the diagram for correct order and orientation of elements.
3. **Install Ground Plane Radials:** Attach the ground plane radials to the designated points on the antenna base. These typically extend outwards from the base.
4. **Connect Coaxial Cable:** The antenna features an SO239 UHF Female connector. Connect your 50 Ohm coaxial cable (PL259 UHF Male connector) to this port. Ensure a tight, weatherproof connection.



Figure 4.1: SO239 UHF Female connector for coaxial cable attachment.

5. **Verify Total Length:** Once assembled, the antenna should measure approximately 18 feet in total length.



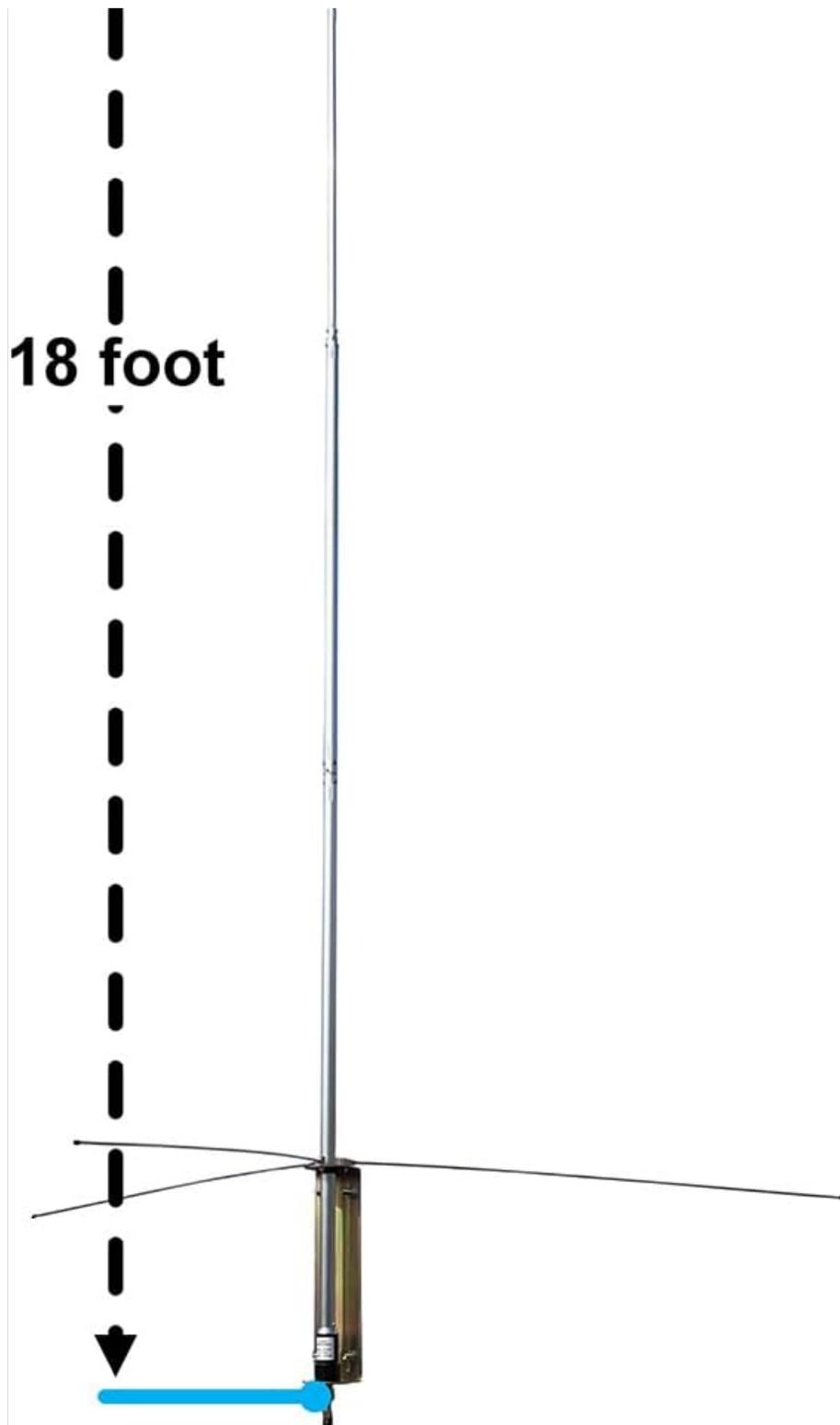


Figure 4.2: Assembled antenna length.

4.2. Mounting

6. **Choose Mounting Location:** Select a high, clear location free from obstructions (trees, buildings, power lines) to maximize signal range. A sturdy mast or pole is recommended.
7. **Secure Mounting Brackets:** Attach the provided U-bolts and mounting brackets to your chosen mast or pole. Ensure the brackets are securely fastened and level.
8. **Mount Antenna:** Carefully lift the assembled antenna and secure its base to the mounting brackets using the provided hardware. Tighten all bolts firmly to prevent movement in wind.

Network Analyzer VSWR Test Results

27MHz VSWR: 1.2

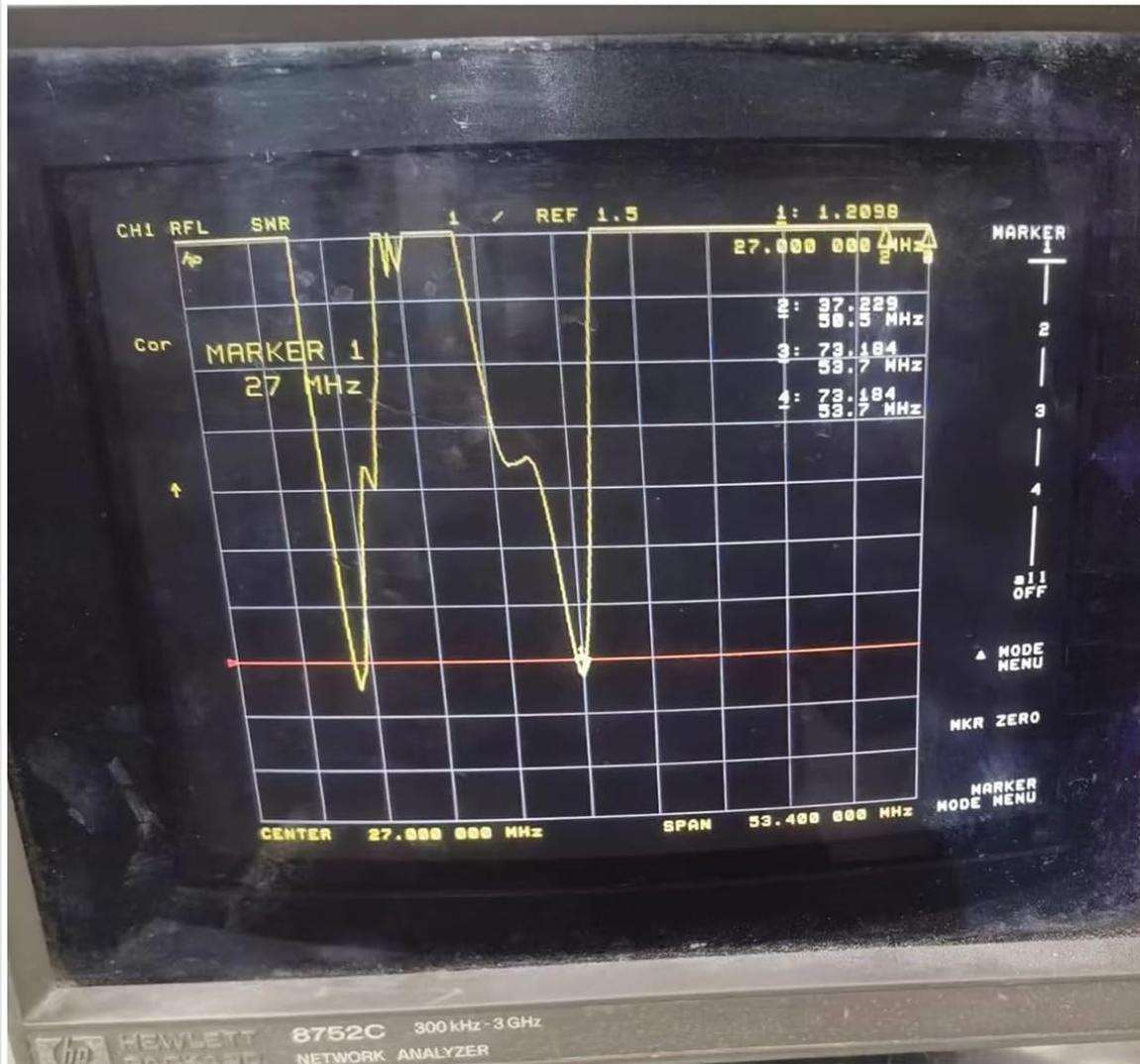


Figure 4.3: Example of a mounted FMUSER CB Base Antenna connected to a CB Base Station.

9. **Route Coaxial Cable:** Route the coaxial cable from the antenna to your CB radio, ensuring it is secured to the mast and building to prevent damage from wind or strain. Avoid sharp bends in the cable.
10. **Grounding:** Connect the antenna system to a proper earth ground using a heavy-gauge wire and a suitable grounding rod. This is crucial for lightning protection and optimal performance.

4.3. VSWR Testing

After installation, it is essential to test the Voltage Standing Wave Ratio (VSWR) to ensure optimal performance and prevent damage to your CB radio. An SWR meter is required for this step.

11. **Connect SWR Meter:** Connect the SWR meter between your CB radio and the antenna coaxial cable.
12. **Perform Test:** Follow the instructions for your SWR meter to measure the VSWR across the 27MHz CB band. Aim for a VSWR reading as close to 1:1 as possible, ideally below 1.5:1.

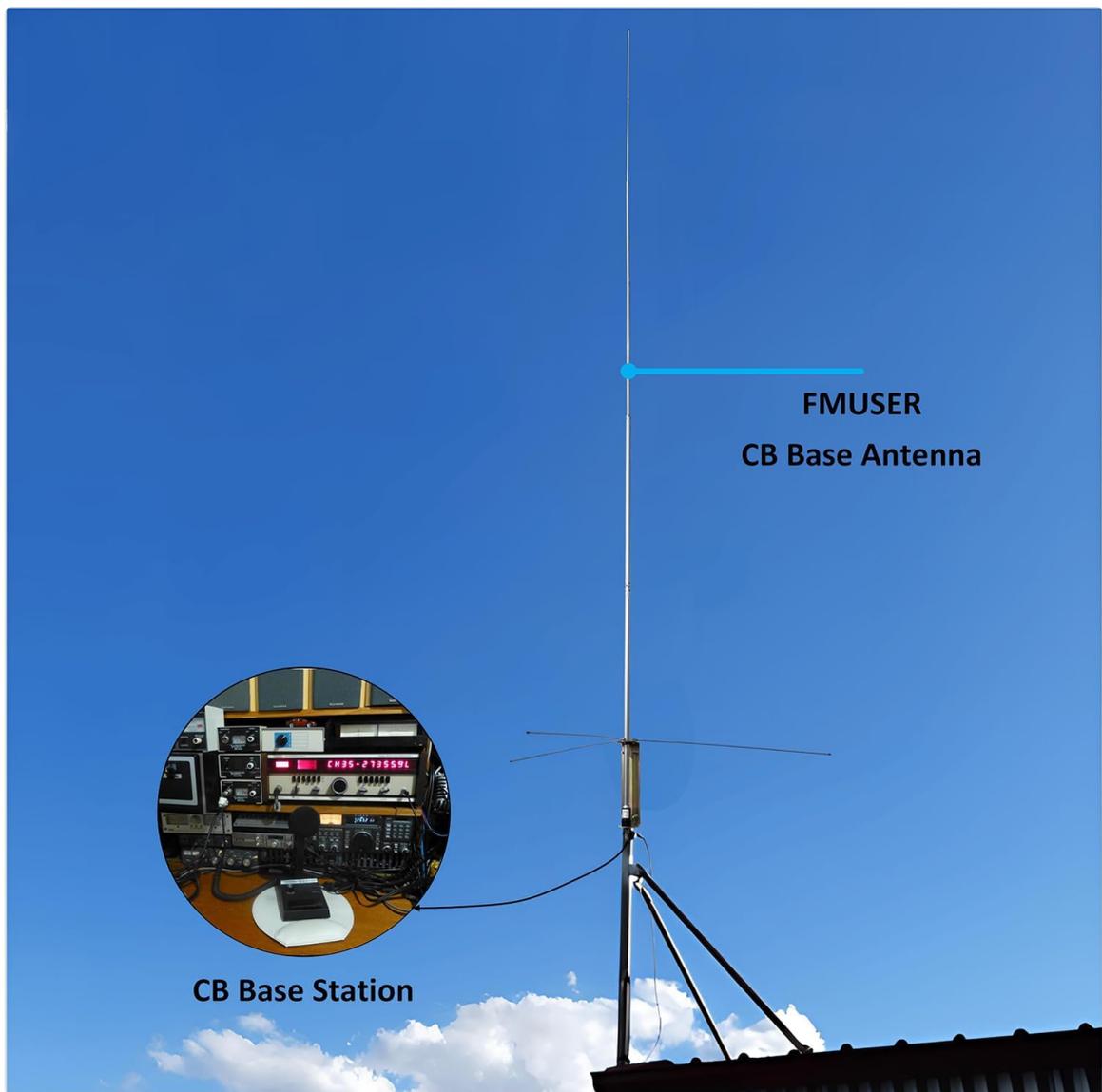


Figure 4.4: Example VSWR test results on a network analyzer showing 1.2 at 27MHz.

13. **Adjust if Necessary:** If the VSWR is too high, minor adjustments to the length of the radiating elements or ground plane radials may be required. Consult a qualified technician if you are unsure.

Installation Video Resources

Your browser does not support the video tag.

Video 4.1: FMUSER CB100 CB Base Antenna VSWR Testing Video. This video demonstrates the VSWR testing process for the CB100 antenna.

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Video 4.2: CB Base Station Antenna Overview. This video provides a general overview of the CB Base Station Antenna.

5. OPERATION

Once the FMUSER CB100 CB Base Antenna is properly installed and connected to your CB radio, its operation is passive. The antenna functions by receiving and transmitting radio frequency signals. Ensure your CB radio is correctly tuned to the 27MHz band for optimal performance. The antenna's design provides extended range and clear communication.

6. MAINTENANCE

Regular maintenance helps ensure the longevity and performance of your antenna.

- **Visual Inspection:** Periodically inspect the antenna for any physical damage, loose connections, or corrosion, especially after severe weather.
- **Cleanliness:** Keep the antenna elements clean from dirt, dust, and debris. A soft cloth and mild detergent can be used if necessary.
- **Connection Check:** Ensure the coaxial cable connection at the antenna base and to the radio remains tight and free of moisture.
- **Grounding Check:** Verify that the grounding connection is secure and free from corrosion.
- **VSWR Re-check:** It is advisable to re-check the VSWR periodically, or if you notice a degradation in signal quality.

7. TROUBLESHOOTING

If you experience issues with your FMUSER CB100 CB Base Antenna, refer to the table below for common problems and solutions.

Problem	Possible Cause	Solution
Poor signal reception/transmission	High VSWR, loose connections, antenna obstruction, damaged cable.	Check VSWR, tighten all connections, ensure clear line of sight, inspect coaxial cable for damage.
No signal	Disconnected cable, faulty radio, severe antenna damage.	Verify all cable connections, test radio with another antenna if possible, inspect antenna for breakage.
Intermittent signal	Loose connections, damaged cable, environmental interference.	Secure all connections, check cable for intermittent faults, identify and mitigate sources of interference.
Antenna noise/static	Poor grounding, electrical interference, damaged components.	Ensure proper grounding, check for nearby electrical noise sources, inspect antenna for internal damage.

8. SPECIFICATIONS

Feature	Detail
Model	CB100
Frequency Range	27 MHz (CB Band)
Antenna Type	CB Base Antenna
Gain	4.3 dB
Impedance	50 Ohms

Feature	Detail
Maximum Range	18 Feet (physical length)
Connector Type	SO239 UHF Female
Material	Aluminum Alloy (rust-resistant, waterproof)
Item Weight	4.5 pounds
Product Dimensions	5"L x 5"W x 39"H (packaged)

9. WARRANTY & SUPPORT

The FMUSER CB100 CB Base Antenna is covered by a standard manufacturer's warranty against defects in materials and workmanship. For specific warranty details, please refer to the product packaging or contact FMUSER customer support.

For technical assistance, troubleshooting, or warranty claims, please contact FMUSER customer support through their official website or the retailer where the product was purchased. Please have your product model number (CB100) and purchase information ready.