

MFJ MFJ-1026

MFJ MFJ-1026 Noise Canceller Instruction Manual

Model: MFJ-1026 | Frequency Range: 1.5-30 MHz

1. INTRODUCTION AND OVERVIEW

The MFJ-1026 Noise Canceller is designed to enhance the performance of your radio equipment by effectively reducing unwanted electrical interference across the 1.5-30 MHz frequency range. This device helps achieve clearer signals and improved overall operation by targeting and eliminating various forms of noise before they affect sensitive receiver circuits.

Key features include:

- **Effective Noise Reduction:** Reduces background noise for improved signal clarity.
- **Wide Compatibility:** Suitable for various electronic setups and radio applications.
- **Easy Installation:** Simple setup for quick integration into existing equipment.
- **Adjustable Control:** Customizable settings for fine-tuning noise reduction levels.
- **Compact Design:** Space-saving form factor.
- **Automatic and Manual Modes:** Offers flexibility for precise noise control.
- **Works on All Modes:** Compatible with various radio operation modes.
- **Antenna Options:** Can utilize a built-in antenna or an external auxiliary antenna.



Figure 1: Front view of the MFJ-1026 Noise Canceller, showing the control panel and connections.

2. SETUP AND INSTALLATION

Proper setup is crucial for optimal performance of your MFJ-1026 Noise Canceller. This device requires connection to your main receiver antenna and a separate auxiliary noise antenna.

1. **Power Connection:** Connect the MFJ-1026 to a stable 12-volt DC power source. Ensure the polarity is correct to prevent damage.
2. **Main Antenna Connection:** Connect your primary receiving antenna to the "MAIN ANTENNA" input on the MFJ-1026.
3. **Auxiliary Noise Antenna Connection:** Connect a separate auxiliary antenna to the "NOISE ANTENNA" input. This antenna is critical for the noise cancellation process.
 - For best results, the auxiliary antenna should ideally pick up the noise source effectively but not necessarily the desired signal as strongly as the main antenna.
 - While a built-in telescopic antenna is provided, an external auxiliary antenna is highly recommended for superior noise reduction performance. Consider a simple wire antenna or a small loop for this purpose.
4. **Receiver Connection:** Connect the "RECEIVER" output of the MFJ-1026 to the antenna input of your radio receiver.
5. **Grounding:** Ensure proper grounding of your radio equipment and the MFJ-1026 to minimize potential interference and ensure safe operation.

3. OPERATING INSTRUCTIONS

Once connected, the MFJ-1026 can be operated to reduce noise. The process involves adjusting the phase and gain controls to null out the unwanted noise.

1. **Power On:** Turn on the MFJ-1026 using the power switch.
2. **Select Mode:** Choose between automatic or manual noise reduction modes if available. Manual mode typically offers more precise control.
3. **Tune to Noise:** Tune your radio receiver to a frequency where the noise is prominent and the desired signal is weak or absent.

4. **Adjust Phase Control:** Slowly rotate the "PHASE" control knob. You should hear the noise level change. The goal is to find a setting where the noise is significantly reduced or completely nulled.
5. **Adjust Gain Control:** Simultaneously adjust the "GAIN" control for the noise antenna. This control balances the strength of the noise signal from the auxiliary antenna against the noise signal from the main antenna. Fine-tune both "PHASE" and "GAIN" for maximum noise reduction.
6. **Monitor Signal:** After reducing the noise, tune to your desired signal. The signal-to-noise ratio should be improved, making the desired signal clearer.
7. **Re-adjustment:** Noise characteristics can change with frequency or time. Be prepared to re-adjust the "PHASE" and "GAIN" controls as needed for different operating conditions or frequencies.

Note: The effectiveness of noise cancellation heavily relies on the auxiliary antenna picking up the same noise as the main antenna, but ideally not the desired signal. Experimentation with auxiliary antenna placement and type may be necessary.

4. MAINTENANCE

The MFJ-1026 Noise Canceller is designed for reliable operation with minimal maintenance. Follow these guidelines to ensure its longevity:

- **Cleaning:** Keep the unit clean and free from dust. Use a soft, dry cloth for cleaning. Avoid abrasive cleaners or solvents.
- **Environment:** Operate the device in a dry environment, away from extreme temperatures and direct sunlight. While rated as "Water Resistant," it is not waterproof and should be protected from moisture.
- **Connections:** Periodically check all cable connections to ensure they are secure and free from corrosion.
- **Power Supply:** Use only a compatible 12V DC power supply that meets the device's specifications.

5. TROUBLESHOOTING

If you encounter issues with your MFJ-1026, refer to the following troubleshooting tips:

Problem	Possible Cause / Solution
No noise reduction or minimal effect.	<ul style="list-style-type: none"> • Incorrect Antenna Setup: The auxiliary noise antenna may not be effectively picking up the noise, or its signal strength relative to the main antenna is not optimal. Ensure both antennas are connected and functioning. • Improper Adjustment: The PHASE and GAIN controls may not be correctly tuned. Carefully re-adjust both controls while listening for noise reduction. • Weak Noise Antenna: The built-in telescopic antenna might be insufficient for your noise environment. An external auxiliary antenna is strongly recommended for better performance. • Noise Characteristics: Some types of noise may be more difficult to cancel than others.
Desired signal is also reduced or distorted.	<ul style="list-style-type: none"> • Over-cancellation: The PHASE and GAIN controls are set too aggressively, causing the desired signal to be nulled along with the noise. Reduce the GAIN or adjust the PHASE slightly. • Auxiliary Antenna Picking Up Signal: The auxiliary antenna might be picking up too much of the desired signal. Try repositioning or using a different type of auxiliary antenna.

Problem	Possible Cause / Solution
Unit does not power on.	<ul style="list-style-type: none"> • Power Supply Issue: Check the 12V DC power supply connection and ensure it is providing power. Verify correct polarity. • Power Switch: Ensure the power switch is in the "ON" position.
Missing components (e.g., antenna).	<ul style="list-style-type: none"> • Inspect Packaging: Thoroughly check all packaging materials. • Contact Seller/Manufacturer: If a component is genuinely missing, contact your retailer or MFJ customer support for assistance.

6. SPECIFICATIONS

Feature	Detail
Model Number	MFJ-1026
Frequency Range	1.5 to 30 MHz
Special Feature	Noise Canceller
Voltage	12 Volts DC
Item Weight	2.88 pounds
Product Dimensions	6.25 x 6.5 x 1.5 inches
Number of Channels	2 (for main and noise antennas)
Water Resistance Level	Water Resistant
Included Components	MFJ-120 Deluxe Noise Cancelling Signal Echo Enhancer (Note: This seems to be a typo in the source data, likely referring to the MFJ-1026 itself or a specific component within it. Assuming it refers to the main unit for clarity.)

7. WARRANTY AND SUPPORT

MFJ products typically come with a manufacturer's warranty covering defects in materials and workmanship. Please refer to the warranty card included with your product or visit the official MFJ website for detailed warranty terms and conditions. For technical support, service, or inquiries regarding your MFJ-1026 Noise Canceller, please contact MFJ customer service directly. Contact information can usually be found on the manufacturer's website or in the product packaging.

