GOOZEEZOO Malahit DSP2

GOOZEEZOO Malachite DSP2 SDR Radio Receiver User Manual

Model: Malahit DSP2
Brand: GOOZEEZOO

1. Introduction

The GOOZEEZOO Malachite DSP2 SDR Radio Receiver is a versatile and high-performance software-defined radio designed for enthusiasts and professionals. Featuring an upgraded Version 2.4, it offers a broad frequency range and multiple demodulation options, ensuring a superior listening experience across various bands. Its robust design and advanced signal processing capabilities make it an essential tool for radio monitoring and communication.



Overview of the GOOZEEZOO Malachite DSP2 SDR Radio Receiver.

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Official product video showcasing the GOOZEEZOO Malachite DSP2 Radio.

2. What's in the Box

Upon unboxing your Malachite DSP2 SDR Radio Receiver, you should find the following components:

- Malachite DSP2 SDR Radio Receiver
- EVA Protective Case
- Bracket/Stand
- USB Type-C Cable

- Telescopic Antenna
- Portable Lanyard
- Spare Knobs (2)
- 3M Transparent Foot Pads
- Quick Start Guide (User Manual)



All components included with the Malachite DSP2 SDR Radio Receiver.

3. Key Features

The Malachite DSP2 SDR Radio Receiver is packed with advanced functionalities to enhance your radio experience:

3.1. Upgraded Version 2.4

This version employs SDR architecture with powerful functions including adjustable filter width, adaptive noise reduction (NR), threshold noise reduction, noise blanker (NB), automatic gain control (AGC), automatic notch filter (ANF), stereo FM with RDS, and analog stereo support.



Key features of the Malachite DSP2 Version 2.4.

3.2. Various Modulation Modes

Enjoy a wide array of demodulation options: AM, SSB (LSB USB), DSB, CW, NFM, WFM, Air, NOAA Weather, FT8, and RTTY Decoder Modulation, providing exceptional versatility.



Supported modulation types and frequency ranges.

3.3. Upgraded Sensitivity

The receiver boasts unrivaled signal sensitivity (0.3uV up to 1GHz, 82dB dynamic bandwidth) with dual antenna inputs for exceptional reception and seamless communication.



Visual representation of the radio's high sensitivity.

3.4. High Audio Quality

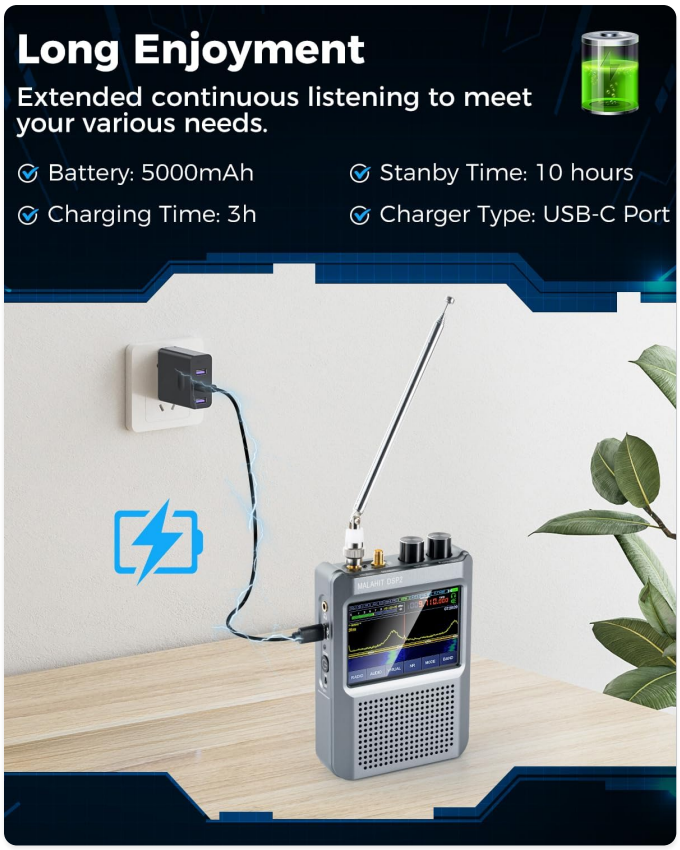
Thanks to advanced noise reduction features (NR, threshold noise reduction, NB, AGC, ANF), the audio quality is excellent, even on stereo FM. It effectively removes pulse-like noises and provides remarkable noise reduction for weak stations.



Features contributing to the high audio quality of the receiver.

3.5. Portable, Sturdy and Long-Lasting Design

Housed in a durable CNC aluminum shell, the radio features a 3.5-inch LCD touchscreen with backlight control. It includes a built-in 5000mAh battery and an improved charging circuit for consistent performance. Connectivity via USB Type-C allows for CAT, IQ, and audio transmission to a computer.



The robust build quality and touchscreen interface of the Malachite DSP2.



The long-lasting 5000mAh battery and USB-C charging capability.

4. Setup

4.1. Connecting the Antenna

The Malachite DSP2 features dual antenna inputs: a Hi-Z (high impedance) port and a 50-ohm SMA port. Select the

appropriate port based on your antenna type for optimal reception. The included telescopic antenna is suitable for general use.



Top and side views of the Malachite DSP2, showing antenna ports and controls.

4.2. Powering On/Off and Charging

To power on the device, use the dedicated power switch on the side. The unit is equipped with a 5000mAh battery and charges via the USB Type-C port. An improved charging circuit ensures efficient power management.

5. Operating Instructions

5.1. Touchscreen Interface

The Malachite DSP2 features a 3.5-inch LCD touchscreen for intuitive navigation and control. Use the included stylus or your finger to interact with the menus and settings.



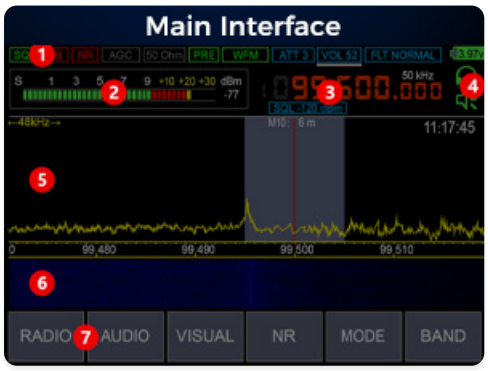
Demonstration of touchscreen interaction.

5.2. Main Interface and Navigation

The main screen displays frequency, signal strength, and a waterfall spectrum. Navigate through different settings using the bottom menu buttons: RADIO, AUDIO, VISUAL, NR, MODE, and BAND.



The main operating interface of the Malachite DSP2.



Detailed view of the main interface elements.

5.3. Radio Settings

Access various radio-specific settings, including antenna selection (Hi-Z/50 Ohm), preamp enable/disable, RF gain, and EMI reduction.



Configuration options within the Radio menu.

5.4. Audio Settings

Adjust audio output, noise blanker (NB), automatic gain control (AGC) mode, automatic notch filter (ANF), and various filter settings for optimal sound clarity.



Audio adjustment options for enhanced listening.

5.5. Visual Settings

Customize the display, including brightness, waterfall gamma, FFT scale, and color. You can also enable or disable the FFT grid.



Customization options for the display interface.

5.6. Mode Selection

Select your desired modulation mode from CW, DSB, USB, LSB, AM, NFM, WFM, FT8, and RTTY. The device also supports CW and RTTY decoding functions.



Available modulation modes and decoding functions.

5.7. Band Selection and Monitoring

Choose from various pre-programmed bands, including amateur radio bands, shortwave, and FM broadcast. You can also set up custom monitoring settings.



Pre-programmed and customizable band options.

6. Maintenance

6.1. Cleaning

Use a soft, dry cloth to clean the exterior of the device. Avoid using abrasive cleaners or solvents that may damage the screen or casing.

6.2. Battery Care

To prolong battery life, avoid fully discharging the 5000mAh Lithium Ion battery frequently. Store the device in a cool, dry place when not in use for extended periods.

6.3. Firmware Upgrades

The Malachite DSP2 supports firmware upgrades. Refer to the official GOOZEEZOO website or support channels for the latest firmware versions and instructions on how to update your device.

7. Troubleshooting

7.1. Weak Signal Reception

- Ensure the correct antenna port (Hi-Z or 50-ohm) is selected for your antenna.
- Enable the preamp function in the Radio menu to boost weak signals.
- Adjust RF gain settings to optimize signal strength.

7.2. Excessive Noise/Interference

- Activate Noise Reduction (NR) and Noise Blanker (NB) features in the Audio menu.
- Enable EMI Reduction in the Radio menu if interference is suspected from the touchscreen or internal components.
- Adjust the Automatic Notch Filter (ANF) to remove specific interfering carriers.

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Video demonstrating noise reduction and signal improvement.

7.3. Touchscreen Unresponsiveness

- Perform a short press on the power button to turn the screen off and on, which can resolve minor glitches.
- Ensure the device battery is adequately charged.

8. Specifications

- **Product Dimensions:** 8.9 x 4.8 x 2.4 inches
- **Item Weight:** 1.8 pounds
- **Item Model Number:** Malahit DSP2
- **Batteries:** 1 Lithium Ion batteries required (included)
- **Manufacturer:** GOOZEEZOO
- **Country of Origin:** China
- **Color:** Silvery
- **Special Feature:** Portable, Lightweight, Rechargeable
- **Connectivity Technology:** USB
- **Tuner Technology:** FM
- **Power Source:** Battery Powered
- **Radio Bands Supported:** AM, SSB, DSB, CW, NFM, WFM, Air, FT8, RTTY Decoder Function



Physical dimensions of the Malachite DSP2 receiver.

9. Warranty and Support

GOOZEEZOO offers 24/7 technical support for any issues you may encounter with your Malachite DSP2 Radio. Their dedicated support team is available via email to assist with troubleshooting, signal reception problems, and other concerns. They prioritize resolving your concerns within 24 hours to ensure minimal disruption.

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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

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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