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› [SPORTARC](#) /

› SPORTARC Malahit DSP2 Malachite Radio Receiver Firmware 2.40 User Manual

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Model: Malahit DSP2

INTRODUCTION

Thank you for choosing the SPORTARC Malahit DSP2 Malachite Radio Receiver. This advanced Software Defined Radio (SDR) receiver offers a wide frequency range and numerous features for radio enthusiasts. This manual provides comprehensive instructions to help you set up, operate, and maintain your device, ensuring optimal performance and an enjoyable listening experience.

PRODUCT OVERVIEW

The Malahit DSP2 is a portable radio receiver designed for versatility and high performance. It features a 3.5-inch touchscreen LCD and a robust aluminum casing.

Components and Controls

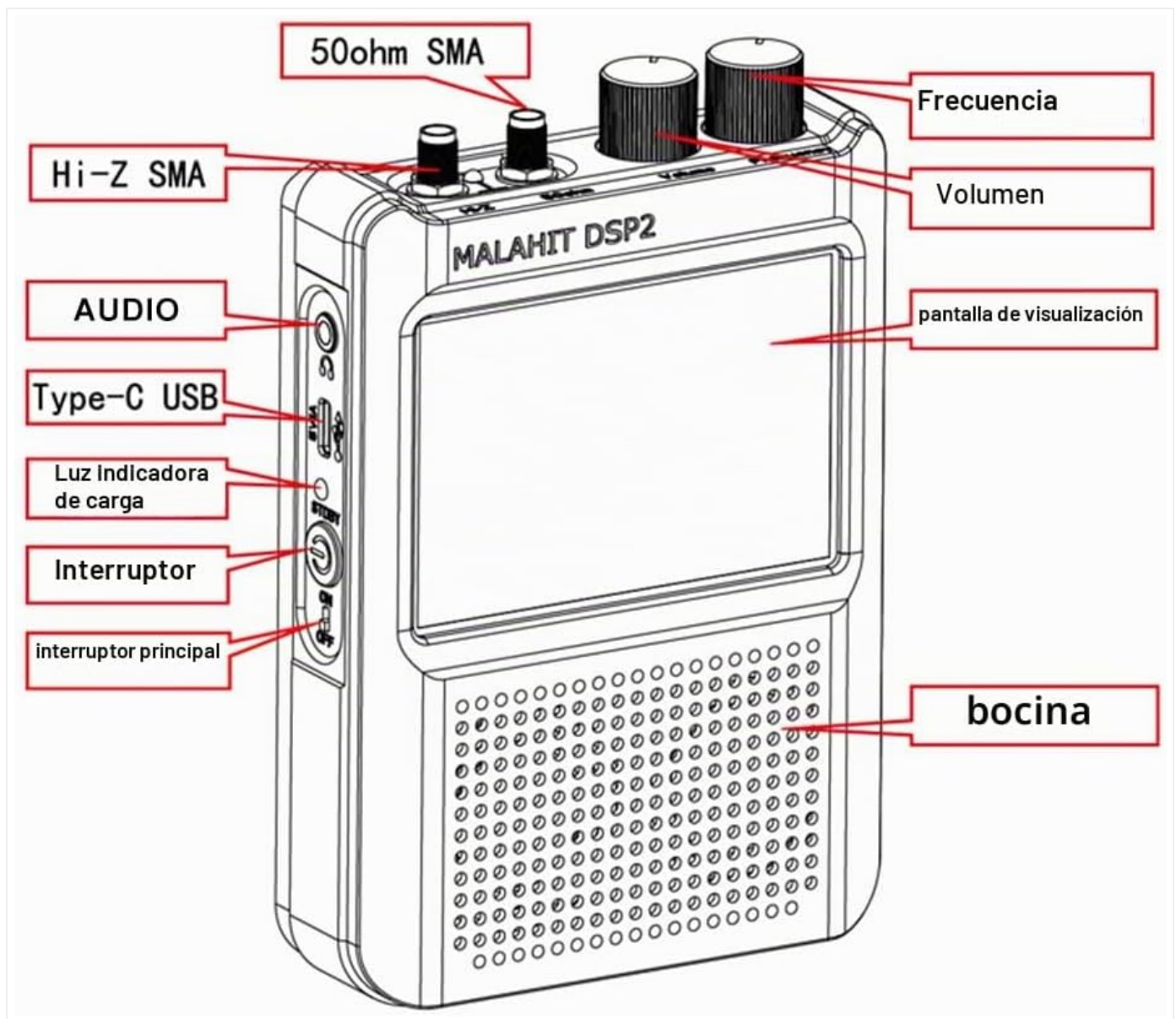


Image Description: A detailed diagram of the Malahit DSP2 receiver, highlighting its various components and controls.

1. **50ohm SMA:** Standard antenna input.
2. **Hi-Z SMA:** High impedance antenna input (for optional board).
3. **Frecuencia (Frequency Knob):** Adjusts frequency.
4. **Volumen (Volume Knob):** Adjusts audio volume.
5. **AUDIO:** 3.5mm audio jack for headphones.
6. **Type-C USB:** USB-C port for charging and data.
7. **Luz Indicadora de carga (Charging Indicator Light):** Shows charging status.
8. **Interruptor (Power Switch):** Main power control.
9. **Interruptor principal (Main Switch):** Secondary power control.
10. **Pantalla de visualización (Display Screen):** 3.5-inch LCD touchscreen.
11. **Bocina (Speaker):** Integrated speaker for audio output.



Image Description: A side view of the Malahit DSP2 receiver, clearly showing the USB-C charging port and the 3.5mm audio jack.

SETUP

Package Contents



Image Description: An overhead view of all items included in the Malahit DSP2 package.

Before using your Malahit DSP2 receiver, please ensure all components are present:

- 1 x Malahit DSP2 Host Unit
- 1 x Rod Antenna
- 1 x 2-in-1 Touch Pen
- 1 x Stand
- 1 x Scratch-free Adhesive
- 1 x TYPE-C Data Cable
- 1 x EVA Storage Bag
- 1 x Lanyard
- 1 x Transparent Foot Mat (300 cm)
- 1 x English Instruction Manual (this document)

Initial Charging

The device is powered by a built-in 5000 mAh lithium-ion battery. For first-time use, fully charge the receiver using the

provided TYPE-C data cable and a compatible USB power adapter (not included). The charging indicator light will show the charging status.

Antenna Connection

Connect the included rod antenna to the 50 Ohm SMA female thread connector on the top of the receiver. For advanced users, an optional high-impedance (Hi-Z) SMA input is available if your DSP2 unit is equipped with the optional board.

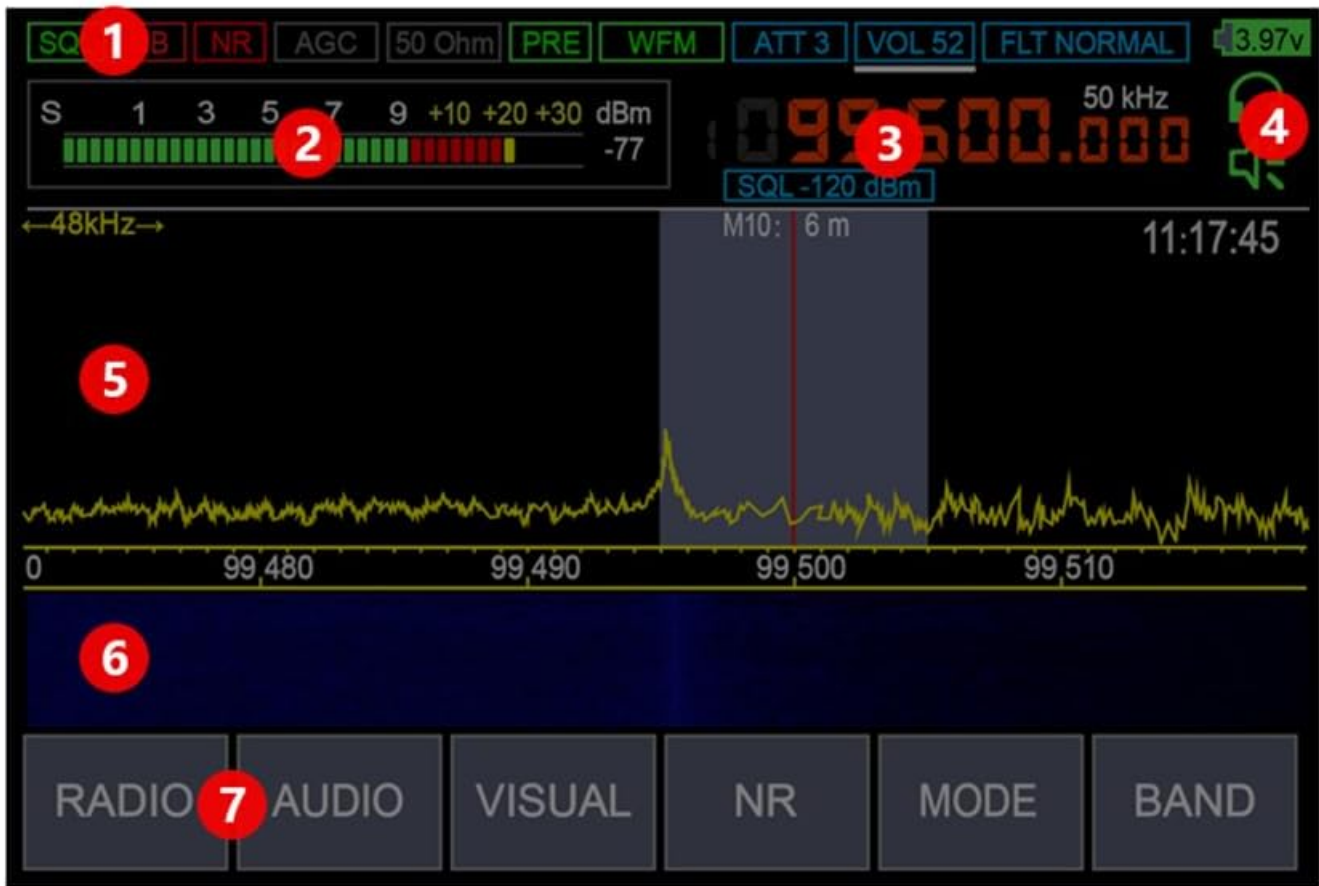
OPERATING INSTRUCTIONS

Powering On/Off

To power on the device, locate the main power switch and the secondary switch on the side of the unit. Ensure both are in the 'On' position. To power off, reverse this process.

Main Interface Overview

Main Interface



- ①Various indicator lights
- ②Signal strength meter (S-meter)
- ③Current tuning frequency and tuning step
- ④Headphone and speaker indicators
- ⑤Signal spectrum display, the spectrum shows signal strength by frequency, with the center line representing the current tuning frequency
- ⑥Signal waterfall display, the waterfall shows how the signal changes over time;
- ⑦Menu button

Image Description: The main operating screen of the Malahit DSP2, showing various indicators and the spectrum display.

1. Various indicator lights: Display status of functions like SQL, NB, NR, AGC, 50 Ohm, PRE, WFM, ATT.

2. Signal strength meter (S-meter): Indicates the strength of the received signal.

3. Current tuning frequency and tuning step: Shows the active frequency and step size.

4. Headphone and speaker indicators: Shows if headphones are connected or speaker is active.

5. Signal spectrum display: A visual representation of signal strength by frequency, with the center line representing the current tuning frequency.

6. Signal waterfall display: Shows how the signal changes over time.

7. Menu buttons: Access various settings and functions (RADIO, AUDIO, VISUAL, NR, MODE, BAND).

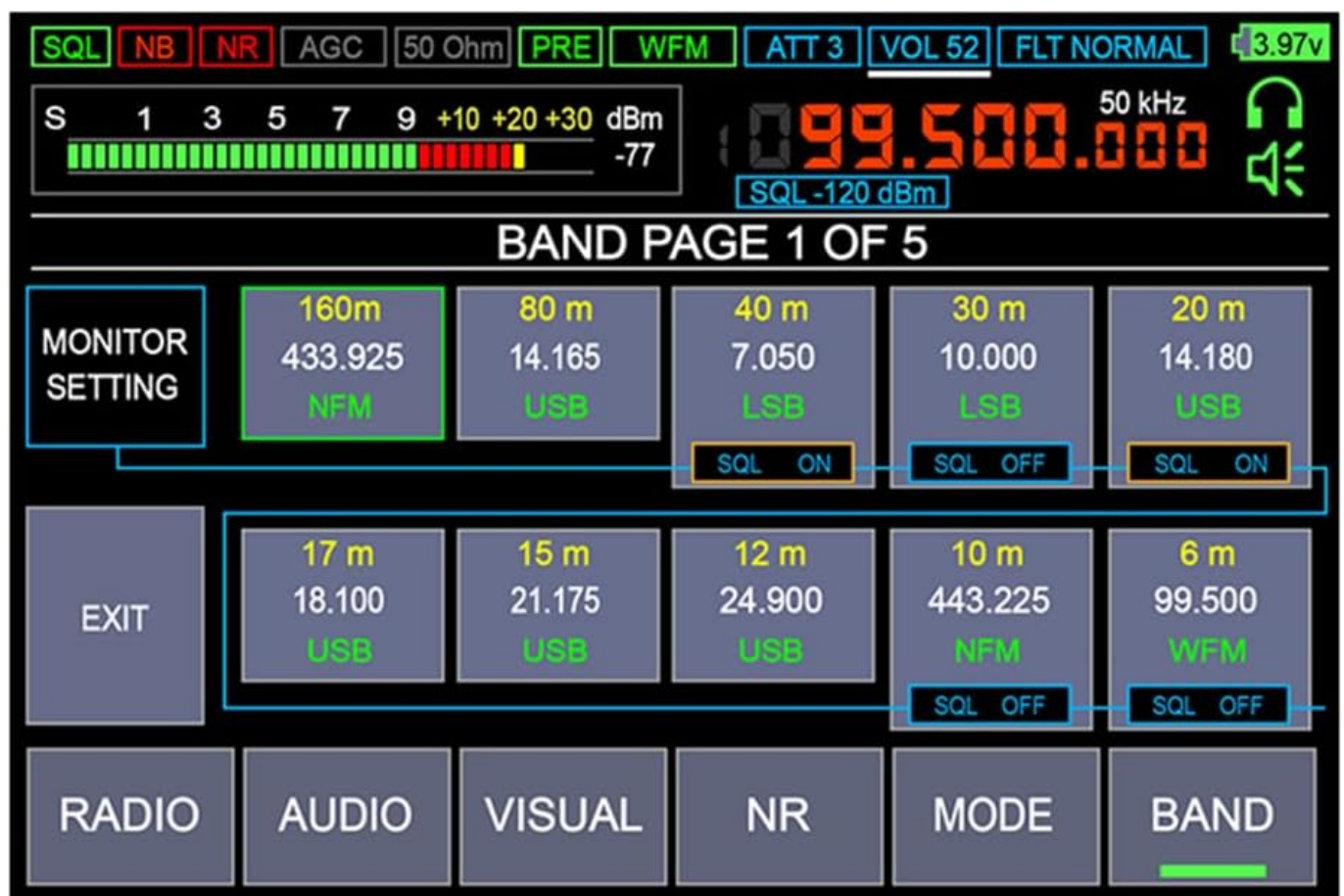
The 3.5-inch LCD touchscreen serves as the primary interface. Use the included touch pen or your finger to navigate menus and adjust settings. The main screen displays the current frequency, signal strength, and a spectrum/waterfall display.

Frequency Tuning and Modulation

Rotate the **Frequency Knob** to adjust the receiving frequency. The Malahit DSP2 supports various modulation types: AM, SSB, DSB, CW, NFM, and WFM. Select the appropriate modulation type from the **MODE** menu for optimal reception.

BAND Options

BAND Options

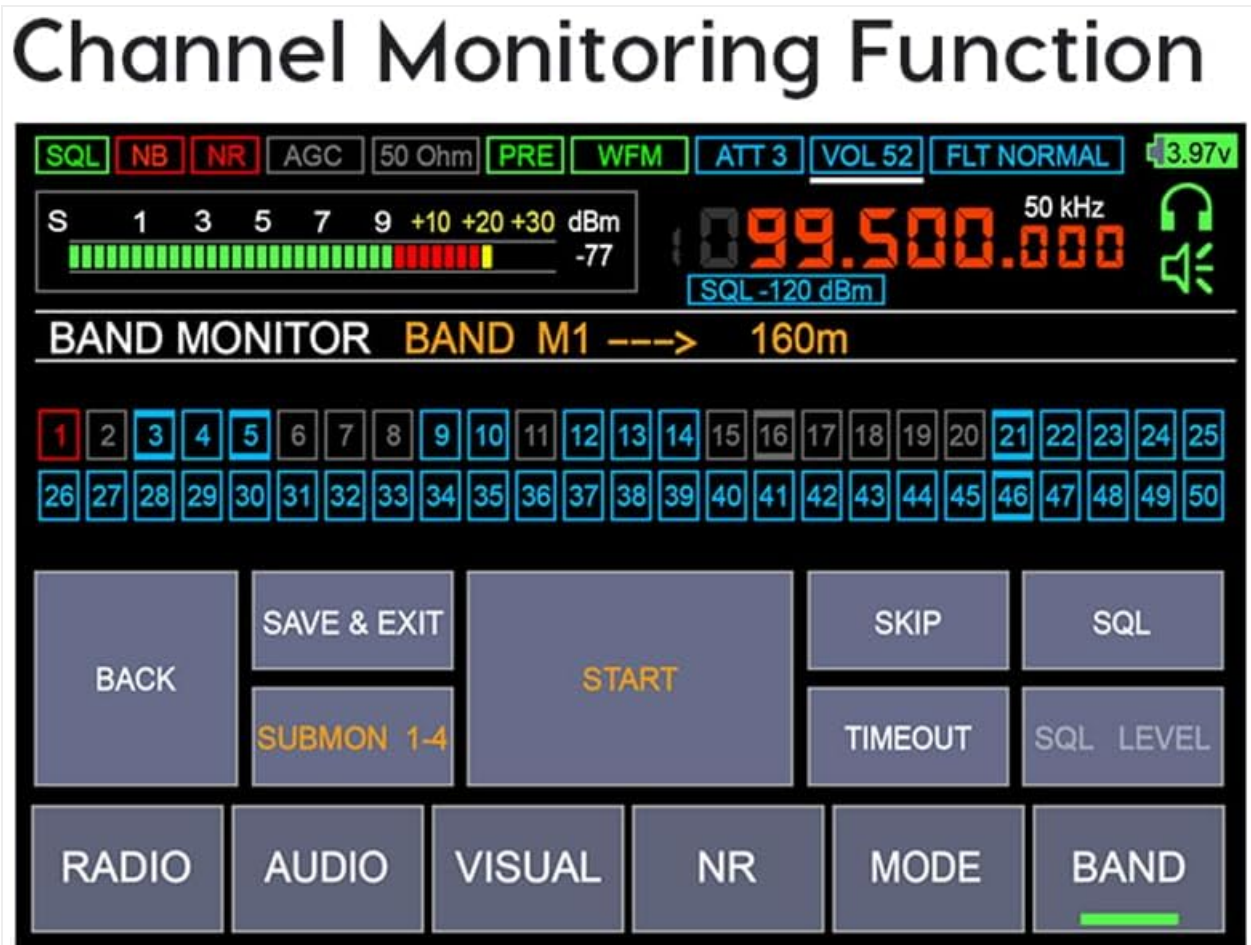


The BAND menu is used to save and load the settings of the radio. Clicking the BAND icon opens the menu, and clicking the BAND icon again or clicking the EXIT icon exits the menu. These tabs are laid out by page and can be flipped through by rotating the Frequency knob.

Image Description: The "BAND Options" screen, displaying various frequency bands (e.g., 160m, 80m, 40m) with their respective frequencies and modulation types. It also shows options like MONITOR SETTING and menu buttons.

The **BAND** menu allows you to save and load radio settings. Tap the **BAND** icon to open the menu. You can navigate through different pages of band settings by rotating the Frequency knob. To exit, tap the **EXIT** icon.

Channel Monitoring Function



In the BAND interface, press MONITOR SETTING to enter the channel monitoring interface. . The Frequency knob can switch storage points, a total of 50 storage points. . BACK is used to return to the channel storage menu BAND. . SAVE & EXIT is used to save and return to the main user interface. . SKIP is used to set whether the storage point is monitored. Listening is displayed in blue, skipping is displayed in gray. . SQL selects a storage point and clicks the SQL icon to enable squelch. When enabled, the storage point is displayed with a bold border, otherwise a thin border. Each storage point can be set independently with squelch levels. If the signal level is below this squelch level, the listener will automatically jump to the next storage point. . SQL LEVEL After turning on the squelch function, the threshold can be adjusted by clicking this icon and then using the Frequency knob. . START Clicking this icon will start listening to different storage points until the STOP icon is clicked.

Image Description: The "Channel Monitoring Function" screen, showing a grid of numbered storage points (1-50) and control buttons like SAVE & EXIT, SKIP, SQL, START, TIMEOUT, and SQL LEVEL.

To access the channel monitoring interface, press **MONITOR SETTING** in the BAND interface. The Frequency knob can switch between 50 storage points.

- **SAVE & EXIT:** Saves current settings and returns to the main user interface.
- **SKIP:** Used to set whether a storage point is monitored. Skipped points are displayed in gray.
- **SQL:** Selects a storage point and activates the squelch function. When enabled, the storage point has a bold border.
- **SQL LEVEL:** After turning on squelch, adjust the threshold by tapping this icon and using the Frequency knob.

- **START:** Begins listening to different storage points. Tap **STOP** to end.

Software Features

The Malahit DSP2 includes advanced software features to enhance your listening experience:

- **Adjustable Filter Width:** Customize the audio filter width.
- **Adaptive Noise Reduction (NR):** Reduces background noise for clearer audio.
- **Threshold Noise Suppression:** Suppresses noise below a set threshold.
- **Noise Blanker (NB):** Eliminates pulse-type noise.
- **Automatic Gain Control (AGC):** Automatically adjusts signal gain.
- **Automatic Notch Filter (ANF):** Automatically removes interfering tones.
- **Stereo FM with RDS Support:** Enjoy stereo FM broadcasts with Radio Data System information.
- **Analog Stereo Equalizer:** Adjust audio equalization settings.



Image Description: The Malahit DSP2 receiver displaying a menu of advanced software settings, including options for brightness, FFT scale, and various noise reduction parameters. A stylus is shown interacting with the touchscreen.

Retro Scale Function

Retro Scale

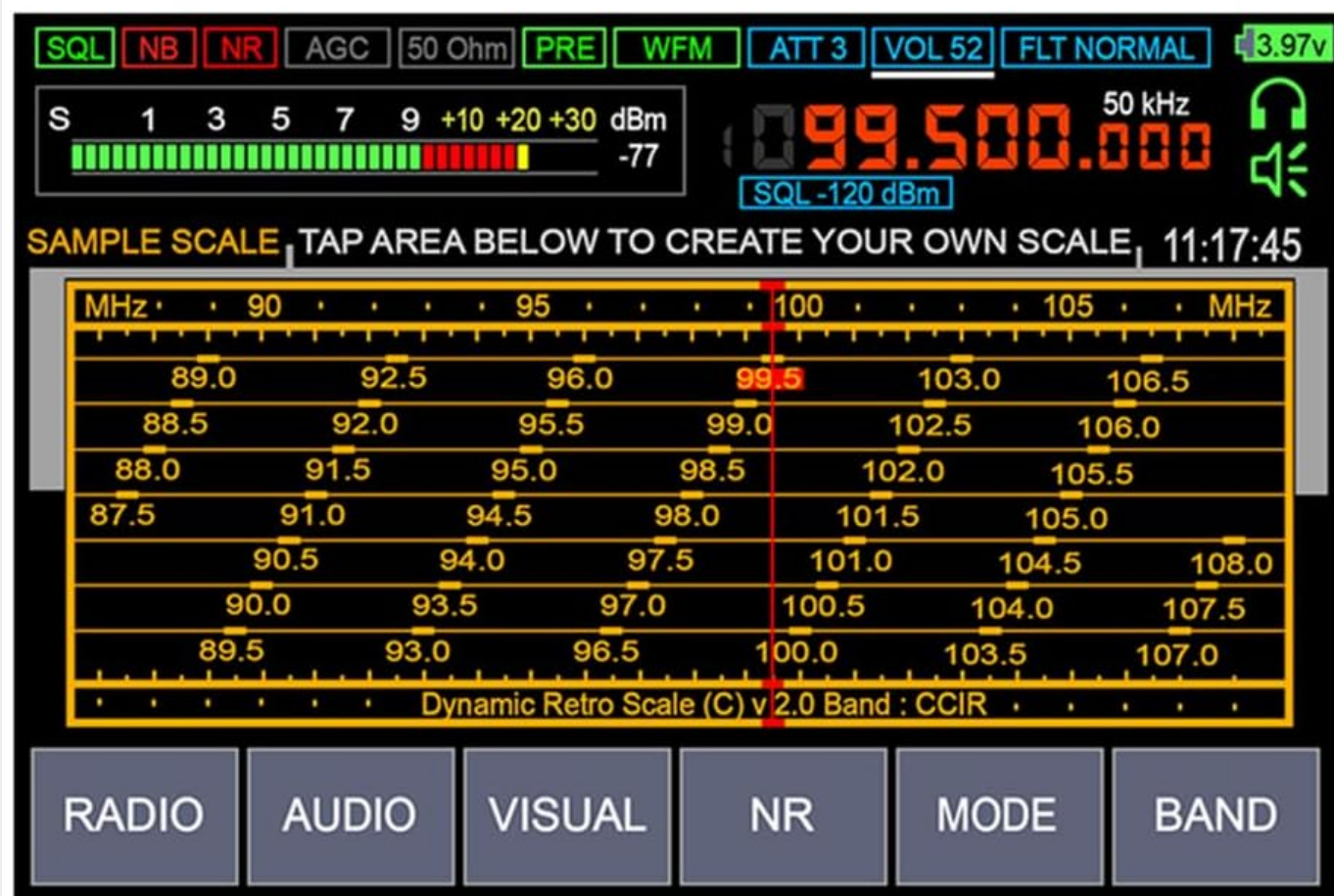


Image Description: The "Retro Scale" screen, presenting a grid-like frequency display reminiscent of older radio tuners, allowing for quick frequency selection.

The Retro Scale function provides a classic visual interface for frequency selection. Tap an area on the scale to tune to a specific frequency.

MAINTENANCE

Cleaning

Use a soft, dry cloth to clean the exterior of the receiver. For the touchscreen, use a microfiber cloth specifically designed for electronics. Avoid using abrasive cleaners or solvents, as they may damage the device.

Storage

When not in use, store the Malahit DSP2 in the provided EVA storage bag to protect it from dust and scratches. Keep the device in a cool, dry place, away from direct sunlight and extreme temperatures.

Firmware Updates

The receiver comes with original firmware (version 2.40) and supports official website updates. Periodically check the SPORTARC official website for the latest firmware versions and instructions on how to update your device.

TROUBLESHOOTING

- **Device does not power on:** Ensure the battery is charged. Connect the device to a power source using the USB-C cable. Check both power switches are in the 'On' position.

- **No audio:** Check the volume level. Ensure headphones are properly connected if in use, or that the internal speaker is enabled. Verify the correct modulation type is selected for the received signal.
- **Poor reception:** Ensure the antenna is securely connected. Extend the rod antenna fully. Try repositioning the receiver or using an external antenna if available. Check for local interference sources.
- **Touchscreen unresponsive:** Restart the device. Ensure the screen is clean and dry. Use the provided touch pen for precise input.
- **Software features not working as expected:** Refer to the specific feature's settings within the menu. Consider performing a factory reset (if available in settings) or checking for firmware updates.

SPECIFICATIONS

Feature	Specification
Frequency Range	10 kHz - 380 MHz, 404 MHz - 2 GHz
Panoramic Width	96kHz, 48kHz, 192kHz
Modulation Types	AM, SSB, DSB, CW, NFM, WFM
Sensitivity	0.3 uV up to 1 GHz
Dynamic Bandwidth	82 dB
Antenna Connector	50 Ohm SMA Female
Power Supply	5000 mAh Li-ion Battery, USB-C (Wired Electric)
Display	3.5-inch Touchscreen LCD
Dimensions (L x W x H)	22 x 12 x 6 cm
Weight	850 g
Supported Radio Bands	AM, FM, VHF, UHF
Audio Output Mode	Stereo
Hardware Interface	3.5 mm Audio
Model Number	1401900427

WARRANTY AND SUPPORT

Information regarding warranty coverage and customer support for the SPORTARC Malahit DSP2 receiver is typically provided with your purchase documentation or can be found on the official SPORTARC website. Please retain your proof of purchase for warranty claims. For technical assistance or inquiries, refer to the contact information provided by the seller or manufacturer.

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

you@example.com

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