

[Manuals.plus](#) /

› [Malahit](#) /

› Malahit tr usdx Transceiver 5-Band Multimode QRP User Manual

Malahit tr usdx

Malahit tr usdx Transceiver 5-Band Multimode QRP User Manual

Model: tr usdx

1. INTRODUCTION

The Malahit tr usdx is a compact 5-Band Multimode QRP Transceiver, designed through a collaboration between PE1NNZ and DL2MAN. This manual provides essential information for setting up, operating, and maintaining your device. The mainboard is version 1.2 and the RF board is version 1.0. This version incorporates mainboard changes to 1.2, while other components remain unchanged.

2. FEATURES

- **Bands:** Supports 80m, 60m, 40m, 30m, and 20m. Future support for 17m, 15m, 12m, and 10m is planned.
- **Modes:** Operates in CW, LSB, USB, AM, and FM modes.
- **Compact Design:** Pocket-sized (90x60x30mm, 140g) with an orange 3D-printed case and raised lettering.
- **Power Output:** Typically 5W at 13.8V power supply; can produce 0.5W from a 5V USB supply.
- **Display:** Equipped with an OLED display.
- **Audio:** Includes an onboard microphone and a small onboard speaker.
- **PTT Key:** Onboard PTT key can be used as an emergency CW key.
- **Connectivity:** Features a Micro USB CAT and programming interface.
- **Measurement:** Integrated SWR bridge and voltage/current measurement hardware for tuning and operation.
- **Power Jack:** 3.5mm x 1.35mm.

3. SETUP AND INITIAL USE

3.1. Device Overview

The Malahit tr usdx transceiver comes pre-assembled in an orange 3D-printed case.



Figure 1: Malahit tr usdx Transceiver with connected cables.

The device features an OLED display, onboard microphone, and speaker. Key controls are located on the front panel.

Front side:



Figure 2: Front view of the Malahit tr usdx Transceiver, showing the OLED display, speaker, and control buttons.

The rear panel includes various ports for external connections.

Back Side:



Figure 3: Back view of the Malahit tr usdx Transceiver, highlighting connection ports.

Side view showing the power input port.



Figure 4: Side view of the Malahit tr usdx Transceiver, showing the power input port.

Top view showing the antenna connector and other ports.



Figure 5: Top view of the Malahit tr usdx Transceiver, showing the antenna connector and other ports.

3.2. Bootloader and Firmware

The mainboard comes with the bootloader pre-installed and firmware programmed. The serial number is provided on a label inside the product packaging.

The serial number will not be displayed on the OLED screen as the bootloader is already finished.

If the serial number sticker is lost, you can enter eighteen '0' digits (000000000000000000) during programming to retrieve the original serial number.

3.3. Programming Your Call Sign or Reprogramming Firmware

To program your call sign or upgrade/reprogram the firmware, follow these steps:

1. **Download Firmware:** Obtain the latest firmware from DL2MAN's official page.
2. **Serial Number:** Enter the serial number (found in the package) to download the firmware.
3. **Install Drivers and Software:**
 - Install the USB Driver for the CH340.
 - Install AVR-Dude software. If installation issues occur, try another computer.
4. **Connect Device:** Restart your computer. Connect the mainboard to your computer using a USB cable. A "ding-dong" sound indicates successful CH340 driver installation. If no sound, ensure the USB cable supports data transmission; try a different cable if necessary.
5. **Program Firmware:** Open AVR-Dude software. Configure the software as instructed in the package (refer to the circled positions in the provided images, if available). The assigned COM-Port will be visible in Windows Device Manager.

3.4. Reset Function

To perform a reset:

1. Hold down the encoder button without releasing it.

- 2. While holding the encoder, turn on the power.
- 3. Once "restart" is displayed on the OLED, release the encoder button.

4. OPERATING THE TRANSCEIVER

The Malahit tr usdx is designed for ease of use in a compact form factor.

4.1. Power Output Testing

The transceiver's power output can be configured. It typically delivers 5W at 13.8V and 0.5W when powered solely by 5V USB.

Your browser does not support the video tag.

Video 1: Demonstrates power output testing of a similar transceiver, showing 5W and 10W settings across various bands (160m, 80m, 40m, 30m, 20m, 17m, 15m, 12m, 10m, 6m).

4.2. General Operation and Connectivity

The transceiver supports various modes and bands, making it versatile for amateur radio enthusiasts.

Your browser does not support the video tag.

Video 2: Overview of the USDX USDR HF QRP SDR Receiver SSB CW QRP Transceiver, demonstrating its compact size and basic functions.

5. TROUBLESHOOTING

5.1. Audio Settings and Device Detection

Proper audio setup is crucial for digital modes and general operation. Ensure your computer correctly detects the transceiver as a sound device.

Your browser does not support the video tag.

Video 3: Guide on configuring audio settings and troubleshooting device detection for a digital modes interface, applicable to USB audio devices like the tr usdx.

5.2. Serial Port and Attenuator Configuration

For advanced users or specific radio setups, configuring the serial port and attenuator may be necessary.

Your browser does not support the video tag.

Video 4: Detailed instructions on modifying a digital interface for serial port and attenuator settings, relevant for customizing the tr usdx for different radio models.

6. SPECIFICATIONS

Attribute	Value
Product Dimensions	4 x 2 x 2 inches
Item Weight	8.1 ounces
Brand	Malahit
Color	Orange

Number of Channels	2
Impedance	50 Ohms
Maximum Range	1000 Meters
Number of Items	5

7. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your Malahit tr usdx transceiver.

- **Firmware Updates:** Periodically check DL2MAN's official page for new firmware versions to access new features or performance improvements. Follow the programming instructions carefully.
- **Cleaning:** Keep the device clean and free from dust and debris. Use a soft, dry cloth for cleaning the exterior. Avoid using harsh chemicals or abrasive materials.
- **Storage:** Store the transceiver in a cool, dry place away from direct sunlight and extreme temperatures when not in use.
- **Battery Care:** If using an external battery, ensure it is charged and maintained according to its manufacturer's guidelines. The device does not include an internal battery case.

8. WARRANTY AND SUPPORT

For warranty information, please refer to the terms and conditions provided at the point of purchase or contact Malahit customer support directly.

For technical support or further inquiries, please consult the official product documentation or community forums related to PE1NNZ and DL2MAN designs.