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› Cryfokt SDR QRP HF Transceiver User Manual

Cryfokt Cryfokt4hf51tv93r

Cryfokt SDR QRP HF Transceiver User Manual

Model: Cryfokt4hf51tv93r

1. INTRODUCTION

This manual provides detailed instructions for the Cryfokt SDR QRP HF Transceiver, a versatile Variable Frequency Oscillator (VFO) and RF Generator. Designed for amateur radio enthusiasts and DIY projects, this device offers a wide frequency range and high stability. Please read this manual thoroughly before operating the device to ensure proper use and longevity.

2. SAFETY INFORMATION

- Do not expose the device to moisture or extreme temperatures.
- Ensure proper ventilation to prevent overheating.
- Use only the specified power supply (USB 5V/1A).
- Avoid disassembling the unit, as this may void the warranty and expose you to electrical hazards.
- Keep out of reach of children.
- Disconnect power before cleaning or maintenance.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- 1 x SDR QRP HF Transceiver Unit
- 1 x USB Data Cable
- 1 x Connector

New and old models are shipped randomly



New Type

Old Type

Image: Package contents including the transceiver unit, USB cable, and connector.

4. PRODUCT FEATURES

- **Wide Frequency Range:** Operates from 10kHz to 220MHz.
- **High Stability TCXO Clock:** Features a 0.5ppm high TCXO clock for accurate frequency generation.
- **Adjustable Tuning Steps:** Supports 1Hz, 10Hz, 1kHz, 5kHz, 10kHz, and 1MHz tuning steps.
- **Versatile Application:** Can be used in homemade devices such as Ultrabinary Receivers, DCR, SDR, or HAM QRP Transceivers.
- **I2C Display Support:** Utilizes a General 128x64 I2C display for clear information.
- **I2C Data Interface:** Requires only 2 lines to connect to the display or SI5351 module.
- **Bar Graph Indicators:** Includes bar graph indicators for signal strength (S meter).
- **Frequency Band Presets:** Features 20 frequency band presets.
- **Multi-functionality:** Can also function as an RF or clock generator.



Image: Front panel of the transceiver with display and controls.



Variable Frequency Oscillator

Used for self made equipment

Superheterodyne receiver, DCR, SDR or Ham QRP transceiver

Bar graph indicator for signal strength(S Meter) and 20 Band presets

RF or clock generator

Image: Angled view emphasizing the device's function as a Variable Frequency Oscillator.

5. SETUP

1. **Power Connection:** Connect the provided USB data cable to the USB 5V/1A port on the rear of the transceiver. Connect the other end to a compatible USB power source (e.g., computer USB port, USB wall adapter).
2. **Antenna/Output Connection:** Connect your antenna or desired output device to the appropriate connectors on the unit. The unit features an "OUT: 10kHz-20MHz" port for signal output and an "IN: 0-3.3V" port for input.
3. **Display Connection (if external):** If using an external 128x64 I2C display or SI5351 module, connect it using only two lines to the designated I2C data pins.
4. **Power On:** Locate the ON/OFF switch on the rear panel and slide it to the 'ON' position. The display should illuminate.



Image: Rear panel connections of the transceiver.

6. OPERATION

6.1. Basic Controls

- **Rotary Encoder:** The large knob on the front panel is used to adjust the frequency. Rotate clockwise to increase frequency, counter-clockwise to decrease.
- **STEP Button:** Press the 'STEP' button to cycle through available tuning steps (1Hz, 10Hz, 1kHz, 5kHz, 10kHz, 1MHz). The current step is displayed on the screen.
- **TX/RX Button:** This button switches between Transmit (TX) and Receive (RX) modes. The current mode is indicated on the display.

6.2. Frequency Adjustment

To set the desired frequency:

1. Turn on the device.

2. Use the 'STEP' button to select the desired tuning increment. For fine adjustments, select smaller steps (e.g., 1Hz, 10Hz). For large frequency changes, select larger steps (e.g., 1MHz).
3. Rotate the large rotary encoder to adjust the frequency. The current frequency will be displayed prominently on the screen.

6.3. Bar Graph Indicator (S Meter)

The display includes a bar graph indicator, functioning as an S meter, to show signal strength. Observe this indicator to assess the strength of received signals.

6.4. Using as a Generator

The unit can function as an RF or clock generator. Connect the output to your desired circuit or device via the "OUT: 10kHz-20MHz" port. Adjust the frequency as needed using the rotary encoder and STEP button.



Video: Demonstration of the Cryfokt SDR QRP HF Transceiver in operation, showcasing its features and functionality.

7. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the device. Do not use liquid cleaners or solvents.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures when not in use.
- **Firmware Updates:** Periodically check the manufacturer's website for any available firmware updates to ensure optimal performance.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not power on.	No power supply, faulty USB cable, power switch off.	Ensure USB cable is securely connected to a 5V/1A source. Check the ON/OFF switch. Try a different USB cable or power source.
Display is blank or shows errors.	Loose internal connection, software issue.	Power cycle the device. If using an external display, check I2C connections. For advanced users, consider checking or re-uploading the Arduino sketch if familiar with the process.
Inaccurate frequency output.	Incorrect calibration, external interference.	Ensure the device is operating in a stable environment. While the device has a high stability TCXO, external factors can affect accuracy. Refer to advanced user forums for calibration procedures if necessary.
No signal detected (S meter shows no activity).	Antenna not connected, incorrect frequency, no active signals.	Verify antenna connection. Ensure you are tuned to an active frequency. Check the TX/RX mode.

For issues not listed here, please contact Cryfokt customer support.

9. SPECIFICATIONS

Feature	Detail
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Feature	Detail
Working Range	10kHz to 220MHz
Clock Accuracy	0.5ppm high TCXO
Tuning Steps	1Hz, 10Hz, 1kHz, 5kHz, 10kHz, 1MHz
Display	General 128x64 I2C
Power Input	USB 5V/1A
Package Dimensions	5.28 x 5.2 x 1.93 inches
Item Weight	8.11 ounces
Model Number	Cryfokt4hf51tv93r
Manufacturer	Cryfokt
Country of Origin	China

10. WARRANTY AND SUPPORT

Cryfokt provides a comprehensive after-sales service for this product.

- **Refund Policy:** 60-day refund period from the date of purchase.
- **Warranty Period:** 12-month warranty from the date of purchase.
- **Customer Support:** If you encounter any problems or have questions regarding your Cryfokt SDR QRP HF Transceiver, please feel free to contact Cryfokt customer service. Contact information can typically be found on the product packaging or the official Cryfokt website.

