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Yuecoom Yuecoomi8czg4axv7

Yuecoom OCXO 10MHz Frequency Standard Reference Module

User Manual

1. INTRODUCTION

This manual provides essential information for the proper use and maintenance of your Yuecoom OCXO 10MHz Frequency Standard Reference Module. This module serves as a stable 10MHz frequency reference source, featuring a crystal oscillator with constant temperature control for consistent output and durability. It is designed for reliable connection and stable performance across various applications.

The constant temperature module is suitable for instrument benchmarks such as audio systems, decoders, shortwave radios, frequency meters, and signal sources. Please read these instructions carefully before operating the device.

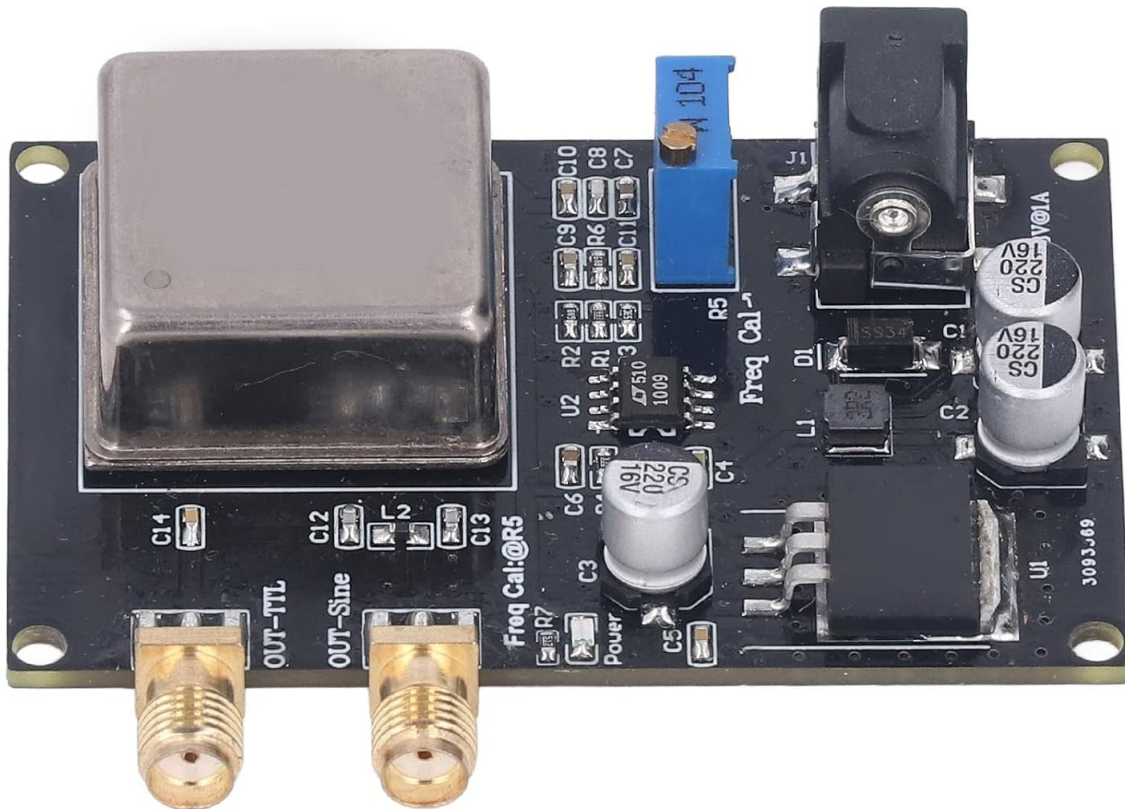


Figure 1: Top view of the OCXO 10MHz Frequency Standard Reference Module.

2. PRODUCT OVERVIEW

The Yuecoom OCXO 10MHz Frequency Standard Reference Module is engineered for precision and stability in frequency generation. Key features include:

- **OCXO Module:** Provides a 10MHz frequency reference source with a crystal oscillator and constant temperature control for stable and durable output.
- **SMA Interface:** Equipped with SMA female interfaces for ultra-low phase noise, ensuring reliable connections and stable performance.
- **High Performance:** Utilizes excellent PCB components, offering high calibration accuracy, good frequency stability, and low signal loss.
- **Versatile Application:** Ideal for instrument standards in audio systems, decoders, shortwave radios, frequency meters, and signal sources.
- **Easy Integration:** Designed for straightforward replacement or integration into existing setups.

10MHz Frequency Reference OCXO Module
 Stable output, efficient and durable
 Ultra low phase noise, high calibration accuracy
 For sound system, decoder, shortwave radio
 Frequency meter, signal source, etc.



Figure 2: Key features of the OCXO module.

3. SPECIFICATIONS

Parameter	Value
Item Model Number	Yuecoomi8czg4axv7
Current Consumption (Preheating)	<750mA
Current Consumption (Working)	<300mA
Warm-Up Time	Approximately 5 minutes
Calibration Accuracy	$\pm 0.01\text{Hz}$
Frequency Stability	$5\text{e-}12$
Output Level (DBm)	10dBm $\pm 2\text{dBm}$ at 50 Ω

Parameter	Value
Output Level (VRMS)	0.7071V at 50Ω
Output Level (VPeak)	1.0V at 50Ω
Output Level (VP-P)	2.0V at 50Ω
Output Impedance	50Ω
Interface Type	SMA Female
Power Input	DC 7-13V, 1A (via J1 power jack)
Item Weight	10 g

4. SETUP INSTRUCTIONS

Follow these steps to set up your OCXO 10MHz Frequency Standard Reference Module:

- Power Connection:** Connect a stable DC power supply (7-13V, 1A minimum) to the J1 power input jack on the module. Ensure correct polarity.
- Output Connection:** Identify the desired output type. The module provides two SMA female interfaces:
 - **OUT-Sine:** For sinusoidal 10MHz output.
 - **OUT-TTL:** For TTL-compatible 10MHz square wave output.

Connect your measurement device or target system to the appropriate SMA output using a 50Ω coaxial cable.

- Initial Placement:** Place the module on a stable, non-conductive surface, away from strong electromagnetic interference sources.

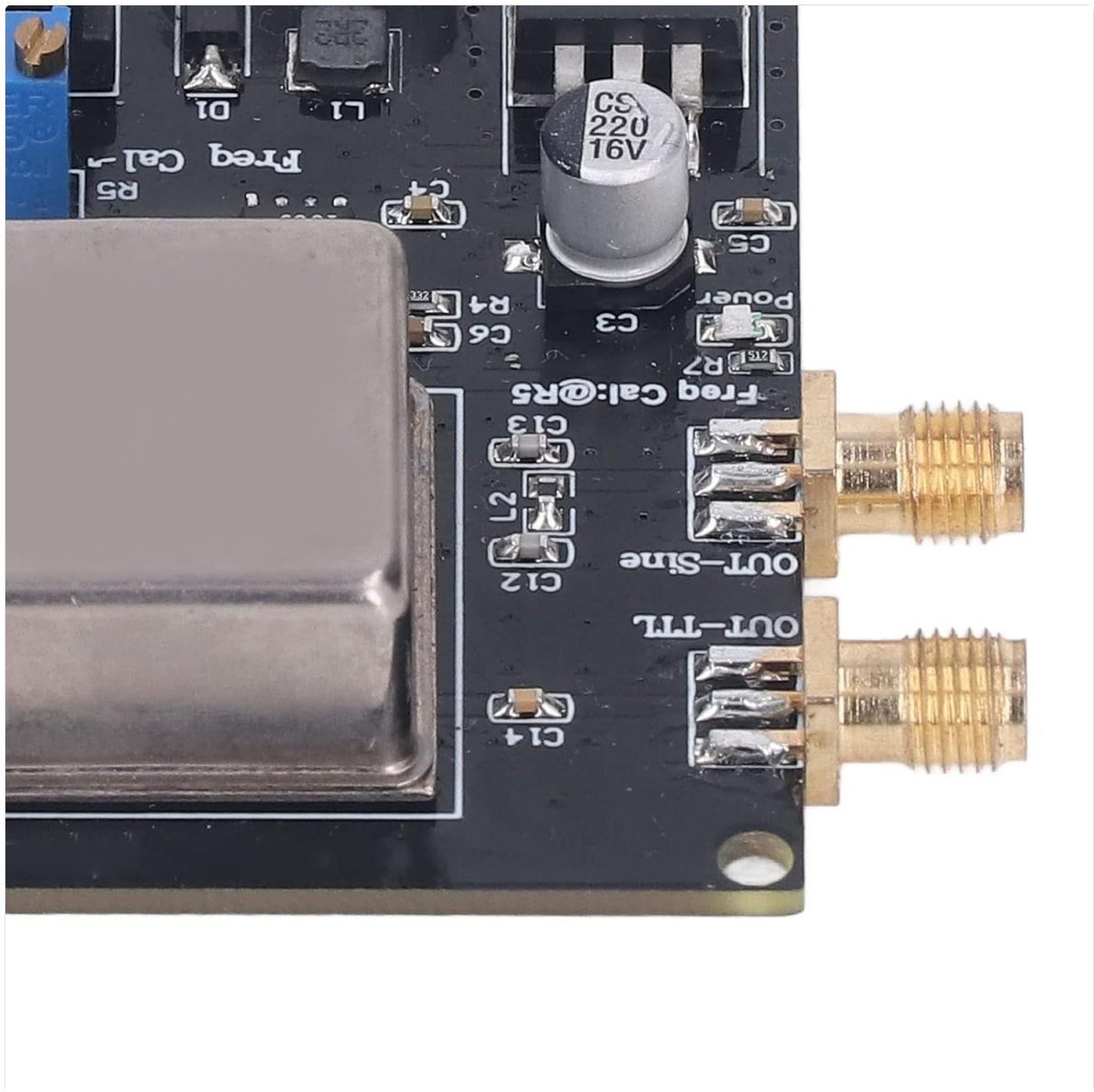


Figure 3: SMA Output Connectors (OUT-TTL and OUT-Sine).

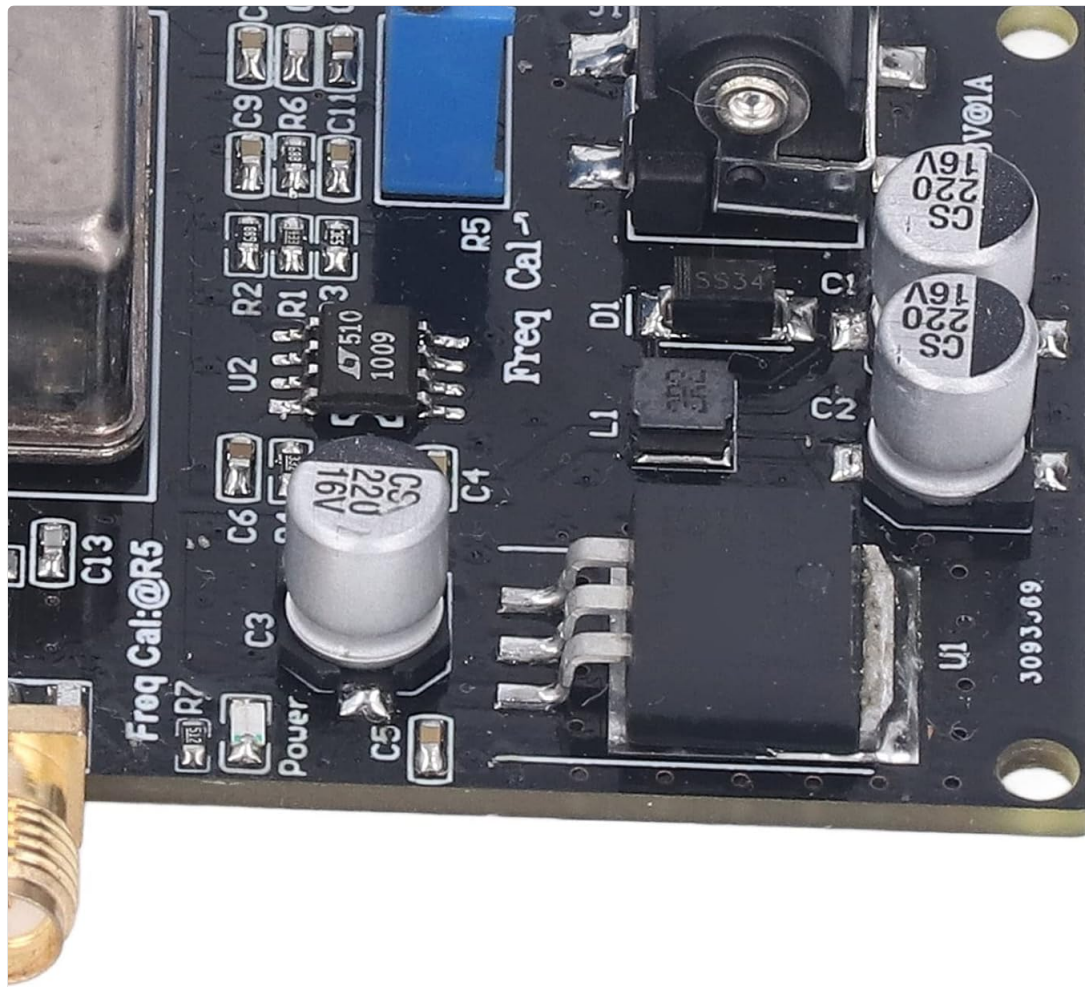


Figure 4: DC Power Input Jack (J1).

5. OPERATING INSTRUCTIONS

Once the module is set up, follow these steps for operation:

1. **Power On:** Apply power to the module. The module will begin its warm-up phase.
2. **Warm-Up Period:** Allow approximately 5 minutes for the module to reach its stable operating temperature. During this time, the frequency output may drift slightly. For optimal stability, a longer warm-up period (e.g., 30-60 minutes) is recommended, especially for critical applications.
3. **Frequency Calibration:** The module features a trim potentiometer (labeled 'W 104' or similar, near 'Freq Cal') for fine-tuning the output frequency. Using a high-precision frequency counter or a GPS-disciplined oscillator (GPSDO) as a reference, carefully adjust this potentiometer to achieve the desired 10MHz output frequency with maximum accuracy. Small adjustments can have a significant impact.
4. **Monitoring Output:** Continuously monitor the output frequency with your connected instrument to ensure stability and accuracy for your application.

6. MAINTENANCE

To ensure the longevity and optimal performance of your OCXO module, observe the following maintenance guidelines:

- **Cleaning:** Keep the module clean and free from dust and debris. Use a soft, dry cloth for cleaning. Avoid using liquid cleaners or solvents.
- **Environmental Conditions:** Operate and store the module in a dry environment, away from extreme temperatures, humidity, and corrosive gases.
- **Handling:** Handle the module with care to avoid physical damage to components or connectors. Avoid touching the circuit board directly with bare hands to prevent static discharge.
- **Power Supply:** Always use a stable and regulated power supply within the specified voltage range (DC 7-13V). Unstable power can affect frequency stability and module lifespan.
- **Recalibration:** For applications requiring extreme precision, periodic recalibration of the frequency may be necessary, especially after significant temperature changes or long periods of operation.

7. TROUBLESHOOTING

If you encounter issues with your OCXO module, consider the following troubleshooting steps:

- **No Output Signal:**
 - Verify that the power supply is correctly connected and providing the specified voltage (7-13V DC).
 - Check the output cable connections to your measuring instrument. Ensure SMA connectors are securely fastened.
 - Confirm your measuring instrument is correctly configured to detect a 10MHz signal.
- **Unstable Frequency:**
 - Ensure the module has completed its warm-up period (at least 5 minutes, preferably longer for critical stability).
 - Check for external interference sources (e.g., strong RF fields, noisy power supplies).
 - Verify the stability of your DC power supply. Fluctuations in input voltage can affect frequency stability.
 - Ensure the module is in a stable thermal environment, away from drafts or rapid temperature changes.
- **Incorrect Frequency:**
 - Perform the frequency calibration procedure using the trim potentiometer and a reliable reference.
 - Ensure your reference frequency counter is accurate and properly calibrated.
- **Module Not Powering On:**
 - Check the power supply voltage and current capacity.
 - Inspect the power input jack and cable for any damage or loose connections.

If these steps do not resolve the issue, please contact the manufacturer or seller for further assistance.

8. WARRANTY AND SUPPORT

For information regarding warranty coverage, technical support, or service, please refer to the documentation provided at the time of purchase or contact your vendor directly. Keep your purchase receipt as proof of purchase.