

Jectse GPSDO Disciplined Oscillator

Jectse GPSDO Disciplined Oscillator User Manual

Model: GPSDO Disciplined Oscillator

1. INTRODUCTION

The Jectse GPSDO Disciplined Oscillator is a high-performance device designed to provide a stable and precise 10MHz reference signal. It combines a high-precision time base with constant temperature crystal oscillator technology, ensuring high accuracy, low temperature drift, and stable output. This manual provides essential information for the proper setup, operation, and maintenance of your GPSDO unit.

2. SAFETY INFORMATION

- Ensure the power supply voltage matches the device's requirements (11-14V DC).
- Do not expose the device to moisture or extreme temperatures.
- Avoid disassembling the unit, as it contains sensitive electronic components.
- Place the device on a stable, flat surface to prevent accidental falls.
- Disconnect power before cleaning or performing any maintenance.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- 1 x GPSDO Disciplined Oscillator Unit
- 1 x Antenna Module
- 1 x Connection Cable



Image: The Jectse GPSDO Disciplined Oscillator unit shown with its accompanying antenna module and connection cable.

4. PRODUCT OVERVIEW

The GPSDO unit features a robust design with clear indicators and accessible ports for ease of use.

4.1 Front Panel



Combining GPS high precise time base and constant temperature crystal oscillator technology

Image: Front view of the GPSDO unit, highlighting the display, PPS indicator, LOCK indicator, LOAD/SAVE buttons, encoder, and 10MHz SINE output.

- **Display Screen:** Shows frequency, GPS lock status, and calibration values.
- **PPS Indicator:** Lights up when the 1PPS signal is active.
- **LOCK Indicator:** Indicates GPS satellite lock status.
- **LOAD/SAVE Buttons:** Used for loading and saving settings.
- **Encoder Switch:** For menu navigation and value adjustment.
- **10MHz SINE Output:** BNC connector for sine wave output (approximately 4Vpp).

4.2 Rear Panel

The rear panel includes essential interfaces for power and signal output.

- **10MHz Output Interface:** Provides a 10MHz square wave output (approximately 4Vpp).
- **1PPS Output Interface:** For precise pulse-per-second output.
- **Antenna Interface:** Connects to the external GPS antenna module.

- **Power Switch:** To turn the device on or off.
- **11-14V DC Power Interface:** For connecting the power adapter.

5. SETUP

1. **Connect the GPS Antenna:** Connect the provided antenna module to the antenna interface on the rear panel of the GPSDO unit. Place the antenna in a location with a clear view of the sky for optimal satellite reception.
2. **Connect Power:** Connect the 11-14V DC power adapter to the power interface on the rear panel. Ensure the power switch is in the OFF position before connecting.
3. **Connect Output (Optional):** Connect your audio decoder, instrument, or meter to the 10MHz output interface (sine or square wave) or 1PPS output interface as required by your application.

6. OPERATING INSTRUCTIONS

1. **Power On:** Flip the power switch to the ON position. The display screen will show "10.00MHz GPSDO".
2. **GPS Lock:** If the GPS antenna is not installed or cannot acquire a satellite signal, the display will continue to show "10.00MHz GPSDO". Once the antenna is installed and a satellite lock is achieved, the screen will show the PPb calibration value. The "LOCK" indicator on the front panel will illuminate.
3. **Initial Calibration:** The initial calibration process may take approximately 30 minutes. During this time, the device compares the 1PPS signal and the current PWM duty cycle value to determine the PPb calibration value.
4. **Saving Calibration:** When the PPb value stabilizes at 0.0 ± 1 , press the encoder switch to enter the menu. Rotate the encoder to find the "PWMSET" option and press the encoder switch again to save the current PWM value.
5. **Exiting Menu:** After saving, rotate the encoder to find "EXIT!! OK" and press the encoder switch to exit the menu. The calibration process is now complete.
6. **Operation Without Antenna:** Once the PWM value is calibrated and saved, the device can be used without the GPS antenna installed for future operations, maintaining its accuracy based on the saved calibration.

7. MAINTENANCE

- **Cleaning:** Use a soft, dry cloth to clean the exterior of the unit. 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.
- **Antenna Care:** Ensure the GPS antenna cable is not kinked or damaged. Protect the antenna from harsh weather conditions.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Display shows "10.00MHz GPSDO" continuously.	GPS antenna not connected or no satellite lock.	Ensure the GPS antenna is securely connected and placed in an outdoor location with a clear view of the sky. Wait for satellite acquisition.
PPb value does not stabilize or is outside 0.0 ± 1 .	Insufficient time for calibration or poor GPS signal.	Allow more time for initial calibration (up to 30 minutes). Verify GPS antenna placement and signal strength.

Problem	Possible Cause	Solution
No 10MHz output signal.	Device not powered on, cable disconnected, or internal fault.	Check power connection and switch. Ensure output cables are securely connected. If the issue persists, contact support.

9. SPECIFICATIONS

- **Item Type:** Disciplined Oscillator
- **Material:** Aluminum Alloy
- **Output Frequency:** 10MHz $\pm$ 0.001Hz
- **Output Waveform (1 Channel):** Square wave about 4Vpp
- **Output Waveform (2 Channel):** Sine wave about 4Vpp
- **Output Amplitude:** -45dBm
- **Constant Temperature Crystal:** OSC5A2B02
- **Module:** Dual mode ATGM336H module
- **Power Input:** 11-14V DC
- **Dimensions:** Approximately 88mm (3.46in) x 84mm (3.31in) x 39mm (1.54in)
- **Weight:** Approximately 10.8 ounces



Image: Diagram showing the approximate dimensions of the GPSDO unit.

10. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or contact Jectse customer service through their official channels. Keep your purchase receipt for warranty claims.

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