

Oumefar PLJ-8LED-H

Oumefar PLJ-8LED-H 0.1~1000MHz RF Signal Frequency Counter User Manual

Model: PLJ-8LED-H

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1. INTRODUCTION

The Oumefar PLJ-8LED-H is a versatile RF signal frequency counter module designed for precise frequency measurement. It features an 8-bit digital tube display and is suitable for displaying frequency values in transceivers and other equipment, as well as for general frequency measurement tasks. This module incorporates a Microchip PIC16F648A microcontroller and a temperature-compensated voltage-controlled crystal oscillator (VC-TCXO) for enhanced accuracy.

Key features include unique gate control, a precise time algorithm, and real-time frequency display with adjustable gate times. It offers three-channel frequency measurement (low, high, and auto) and a dual-frequency design with independent IF settings. The module is controlled via two buttons and features eight 0.56-inch high-brightness digital displays with adjustable brightness. Settings are automatically saved for convenience.

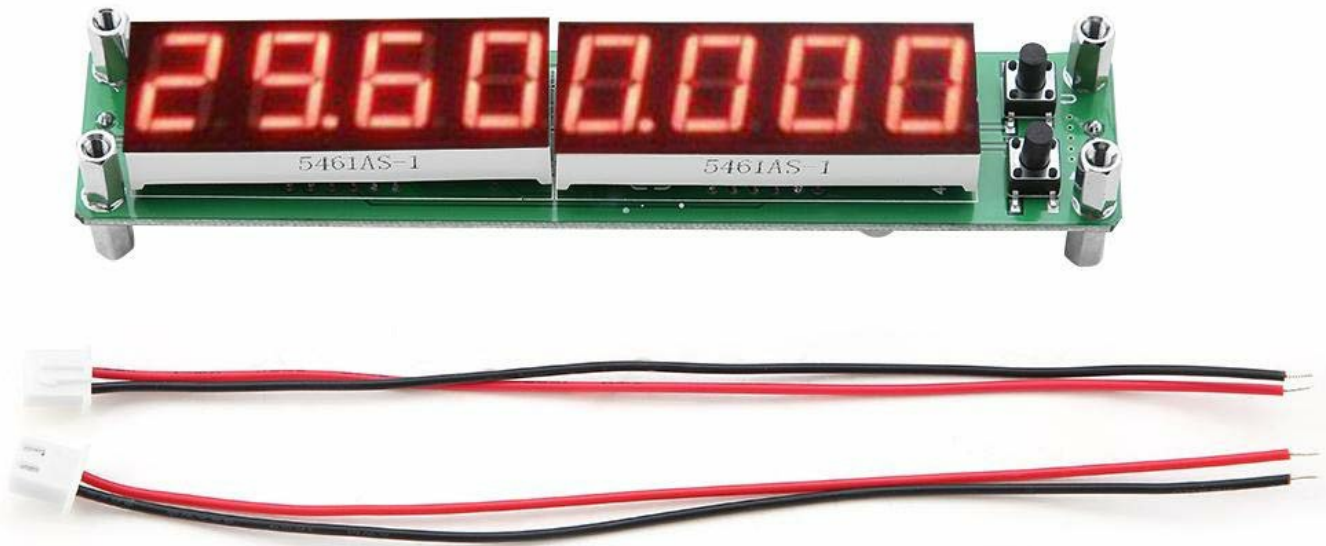


Figure 1: Oumefar PLJ-8LED-H Frequency Counter Module with connecting wires.

2. SETUP INSTRUCTIONS

Follow these steps to set up your PLJ-8LED-H frequency counter module:

1. **Power Connection:** Connect a DC power supply (9V to 15V) to the **DC IN** interface. This is typically an HX2.54-2P socket. Ensure correct polarity; the module includes reverse polarity protection.
2. **Signal Input:** Connect the RF signal you wish to measure to the **RF IN** interface. This is also an HX2.54-2P socket.
3. **Programming Interface (Optional):** The **ICSP** (2.54-6P Pin) is for programming purposes and is not typically used during standard operation.

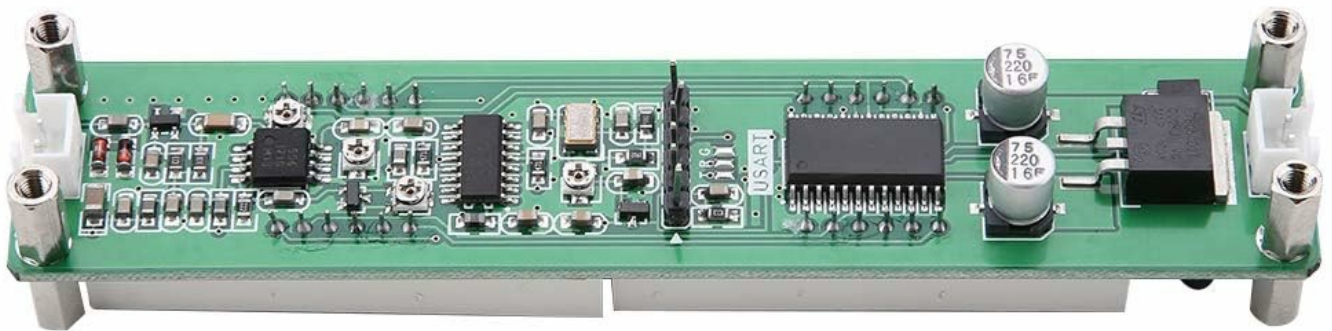


Figure 2: Rear view of the module, highlighting connection points.

Once power and signal are connected, the module's digital display will illuminate, showing the measured frequency.

3. OPERATING INSTRUCTIONS

The PLJ-8LED-H frequency counter offers straightforward operation through its two control buttons and digital display.

3.1. Measurement Channels

The module supports three measurement channels:

- **Low Channel:** Measures frequencies from 0.1 MHz to 60 MHz. This channel has low impedance.
- **High Channel:** Measures frequencies from 20 MHz to 2.4 GHz. This channel divides the input by 64.
- **Auto Channel:** Automatically selects the appropriate channel based on the input signal.

Refer to the specifications section for detailed sensitivity and accuracy information for each channel.

3.2. IF Settings

The module features an independent dual-IF design, allowing for intermediate frequency (IF) adjustments. You can set the IF frequency within a range of 0 to 99.9999 MHz, with a minimum step of 100 Hz. The IF frequency can be set to either increase or decrease the displayed frequency value.

Use the control buttons to navigate and adjust IF settings. The specific button functions for IF adjustment will be indicated on the device or in a more detailed product sheet.

3.3. Gate Time and Display Brightness

- **Gate Time:** The display refresh rate (gate time) can be set to 0.01 seconds, 0.1 seconds, or 1.0 seconds. A longer gate time generally provides higher accuracy for stable signals.
- **Display Brightness:** The eight 0.56-inch digital displays have adjustable brightness. Use the control buttons to cycle through brightness levels to suit your viewing environment.

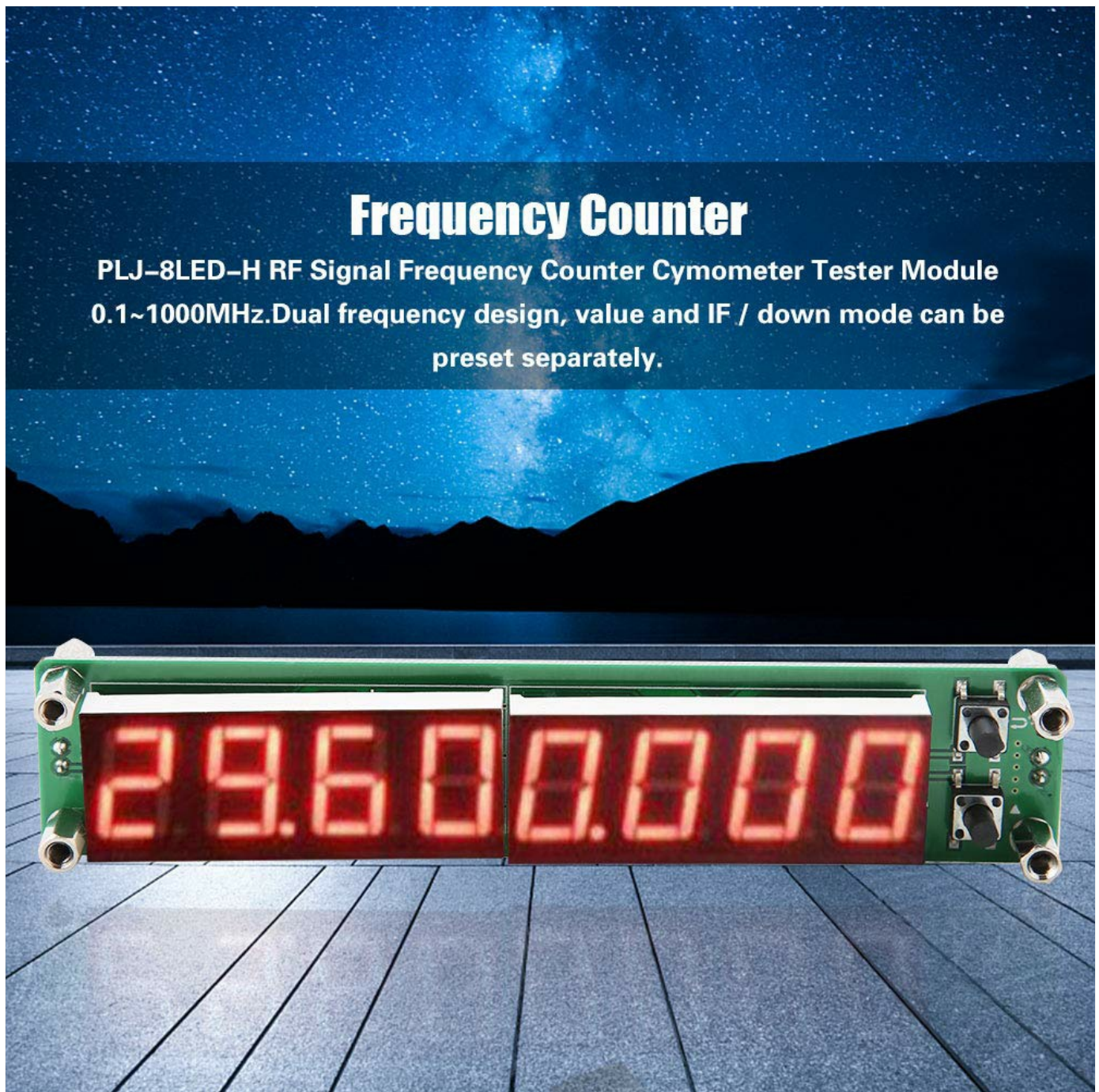


Figure 3: Front view of the frequency counter displaying a frequency value.

All settings, including IF and brightness, are automatically saved and recalled upon power-up.

4. MAINTENANCE

To ensure the longevity and optimal performance of your Oumefar PLJ-8LED-H frequency counter, follow these general maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to gently wipe the module. Avoid using abrasive cleaners, solvents, or liquids that could damage the electronic components or display.
- **Environment:** Operate and store the module in a clean, dry environment. Protect it from dust, moisture, and extreme temperatures.
- **Handling:** Handle the module with care to prevent physical damage. Avoid dropping it or subjecting it to strong vibrations.
- **Power Supply:** Always use a stable DC power supply within the specified voltage range (9V-15V).

No user-serviceable parts are inside the sealed components. Do not attempt to disassemble the module beyond accessing the connection ports.

5. TROUBLESHOOTING

If you encounter issues with your PLJ-8LED-H frequency counter, refer to the following troubleshooting tips:

- **No Display / Module Not Powering On:**
 - Verify that the DC power supply is connected correctly to the **DC IN** port.
 - Ensure the power supply is providing voltage within the 9V to 15V range.
 - Check the power supply itself to confirm it is functioning.
- **Inaccurate Frequency Reading:**
 - Ensure the input signal is within the specified measurement range for the selected channel (Low: 0.1-60MHz, High: 20MHz-2.4GHz).
 - Check the signal input connection to the **RF IN** port for secure contact.
 - Verify the input signal strength meets the sensitivity requirements for the respective channel.
 - Adjust the gate time setting; a longer gate time (e.g., 1.0 seconds) can improve accuracy for stable signals.
 - If IF settings are enabled, ensure they are configured correctly for your application.
- **No Signal Detected / Display Shows Zero:**
 - Confirm that a signal is present at the input source.
 - Check the cable connecting the signal source to the **RF IN** port for damage or loose connections.
 - Ensure the signal amplitude is sufficient for the module's sensitivity.
 - Try switching between Low, High, and Auto channels to see if the signal is detected on a different range.
- **Display Issues (e.g., flickering, dimness):**
 - Adjust the display brightness using the control buttons.
 - Ensure the power supply is stable and not fluctuating.

If the problem persists after attempting these steps, contact customer support for further assistance.

6. SPECIFICATIONS

Detailed technical specifications for the Oumefar PLJ-8LED-H frequency counter module:

Feature	Specification
Model	PLJ-8LED-H
Measurement Channels	Low Channel, High Channel, Auto Channel
Low Channel Measuring Range	0.1 MHz ~ 60 MHz
Low Channel Accuracy	$\pm 100\text{Hz}$ (0.01s gate), $\pm 10\text{Hz}$ (0.1s gate), $\pm 1\text{Hz}$ (1.0s gate)
Low Channel Sensitivity	0.1-10 MHz: $>60\text{mVPP}$; 10-60 MHz: $>60\text{mVPP}$
High Channel Measuring Range	20 MHz ~ 2.4 GHz (divided by 64)
High Channel Accuracy	$\pm 6400\text{Hz}$ (0.01s gate), $\pm 640\text{Hz}$ (0.1s gate), $\pm 64\text{Hz}$ (1.0s gate)
High Channel Sensitivity	20-30 MHz: $>100\text{mVPP}$; 30-60 MHz: $>50\text{mVPP}$
IF Settings	0 ~ 99.9999 MHz, 100 Hz step, increase/decrease mode
Frequency Reference	5032 package 13.000MHz VC-TCXO, $\pm 2.5\text{ ppm}$ stability
Operating Voltage	DC 9V ~ 15V (with reverse polarity protection)
Current Consumption	Max 160 mA (DC12V, red LED, eight brightness)
Physical Dimensions (LxWxH)	125.5 mm x 25.5 mm x 21.5 mm (approx. 15 x 3 x 2.5 cm)
Weight	46 g
Onboard Interfaces	DC IN (HX2.54-2P), RF IN (HX2.54-2P), ICSP (2.54-6P Pin)
Display	Eight 0.56 inches high brightness digital display (red or blue font)

Frequency Counter

Circuit is simple and reasonable structure, two-button control, simple operation.

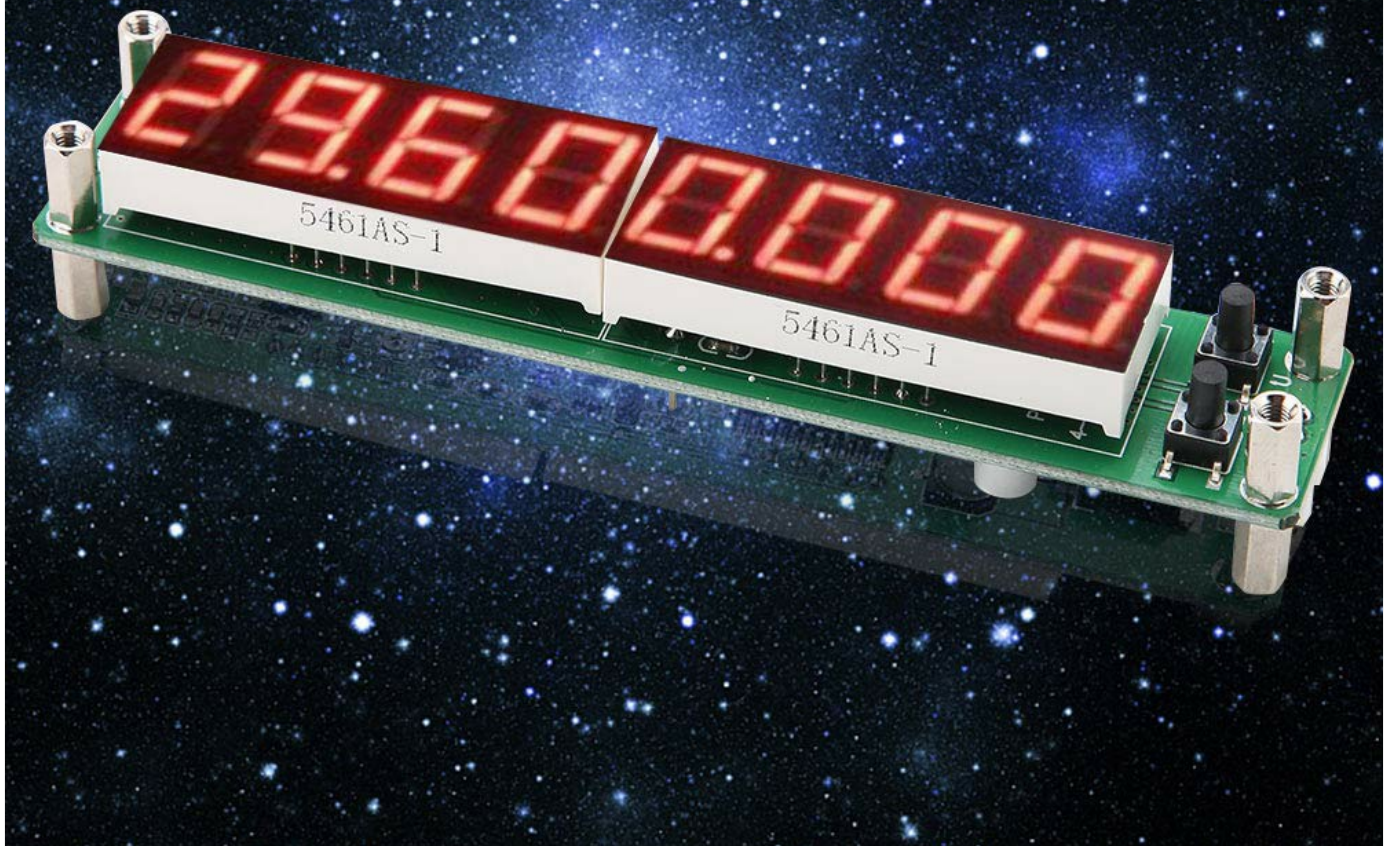


Figure 4: Angled view of the frequency counter module.

7. WARRANTY AND SUPPORT

For warranty information and technical support regarding your Oumefar PLJ-8LED-H frequency counter module, please refer to the documentation provided at the time of purchase or contact your retailer directly.

General product support may be available through the manufacturer, Oumefar. Please visit their official website or contact their customer service department for assistance with product inquiries, troubleshooting, or warranty claims.

This product may be eligible for a 10-day replacement policy through certain retailers. Extended warranty options, such as a 1-year extended warranty by Onsitego, may also be available for purchase separately. Please check with your vendor for details on these programs.

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

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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