Walfront PLJ-8LED-H

PLJ-8LED-H RF Frequency Counter Cymometer Tester Module

Model: PLJ-8LED-H | Brand: Walfront

INTRODUCTION

The Walfront PLJ-8LED-H RF Frequency Counter Cymometer Tester Module is a compact and versatile device designed for precise frequency measurement in the range of 0.1 MHz to 1000 MHz. Featuring an 8-digit LED display, this module is ideal for various applications including radio frequency testing, amateur radio, and electronic circuit debugging. Its dual-frequency design allows for independent adjustment of IF frequencies, making it adaptable for different measurement scenarios.

Figure 1: The PLJ-8LED-H module displaying a frequency, highlighting its compact design and clear LED readout.

FEATURES

- **Wide Frequency Range:** Measures frequencies from 0.1 MHz to 1000 MHz.

- **8-Digit LED Display:** Provides clear and precise frequency readings. Available with backlit red or blue font.

- **Dual-Frequency Design:** Allows independent adjustment of IF frequencies (0-99.9999 MHz) for both increasing and reducing IF frequency modes.

- **Two Measuring Channels:** Includes a low channel (0.1 MHz ~ 60 MHz) and a high channel (20 MHz ~ 2.4 GHz, divided by 64).

- **Adjustable LED Brightness:** Eight levels of brightness adjustment, factory set to maximum.

- **Compact Design:** Small physical dimensions for easy integration into various setups.

- **Simple Operation:** Two-button control for straightforward use.

SPECIFICATIONS

Attribute	Value
Model	PLJ-8LED-H
Display Type	8-digit LED (Backlit Red or Blue Font)
Low Channel Measuring Range	0.1 MHz ~ 60 MHz
Low Channel Accuracy	± 100 Hz (0.01s gate)
High Channel Measuring Range	20 MHz ~ 2.4 GHz (divided by 64)
High Channel Accuracy	± 6400 Hz (0.01s gate), ± 640 Hz (0.1s gate), ± 64 Hz (1.0s gate)
IF Adjustment Range	0 ~ 99.9999 MHz (adjustable for increase/reduce mode)
Working Voltage	DC 9 V ~ 15 V (with reverse polarity protection)
Current Consumption	~160 mA (DC12V, red LED, max brightness)
Dimensions (L x W x H)	125.5 mm x 25.5 mm x 21.5 mm (approx. 4.94 x 1.00 x 0.85 inches)
Weight	46 g (approx. 1.62 oz)
Interfaces	DC In (HX2.54-2P), RF In (HX2.54-2P), ICSP (PIN 2.54-6p)

SETUP

Before operating the PLJ-8LED-H module, ensure you have a stable DC power supply (9V-15V) and the necessary cables for connecting to your signal source. The module comes with two cables for power and signal input.

1. **Power Connection:** Connect the provided 2-pin power cable to the "DC In" port (socket HX2.54-2P) on the module. Connect the other end to your DC 9V-15V power source. Ensure correct polarity; the module has reverse polarity protection.

2. **Signal Input:** Connect the provided 2-pin signal cable to the "RF In" port (socket HX2.54-2P). Connect the other end to the RF signal source you wish to measure.

3. **Initial Power-Up:** Once connections are secure, apply power. The LED display should illuminate and show a frequency reading.
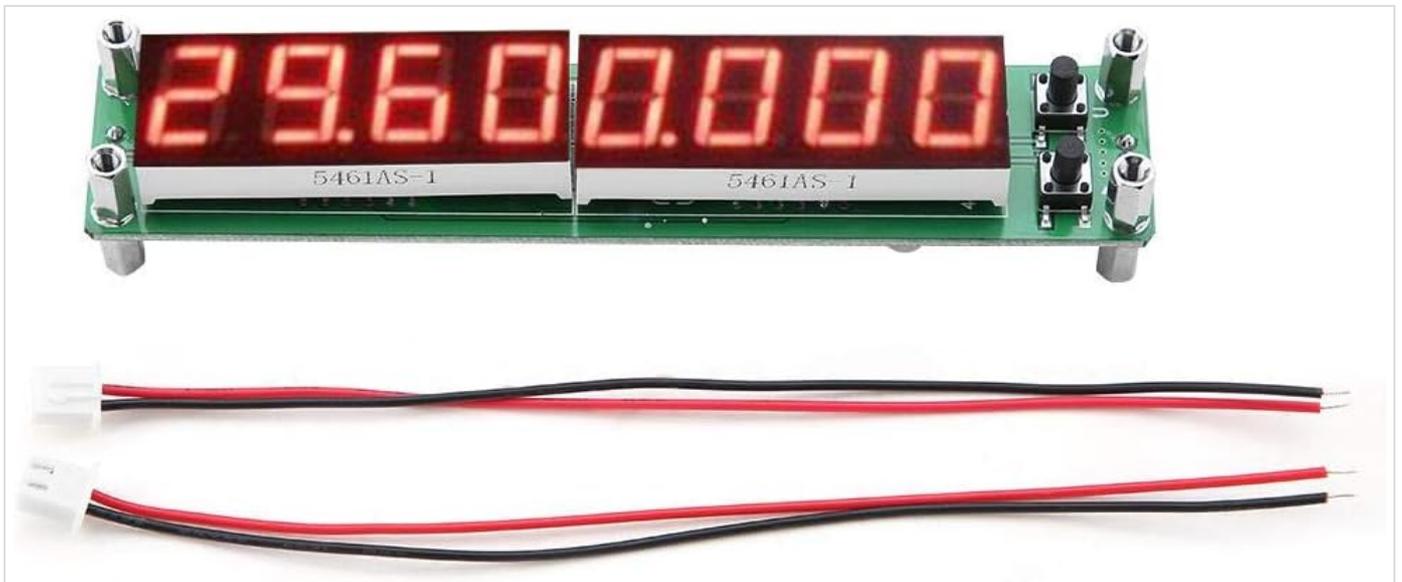

Figure 2: The PLJ-8LED-H module along with its power and signal input cables, ready for connection.
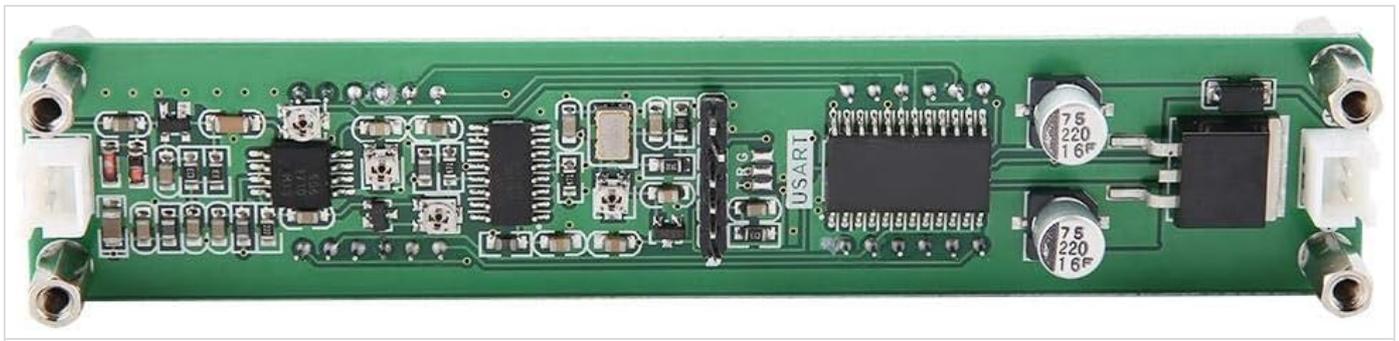
Figure 3: Underside view of the module, illustrating the layout of components and connection interfaces for power, RF input, and programming.

OPERATING INSTRUCTIONS

The PLJ-8LED-H module features two buttons for operation and configuration. These buttons allow for adjusting settings such as IF frequency offset and LED brightness.

- **Frequency Measurement:** Once powered and connected to a signal, the module will automatically display the measured frequency on its 8-digit LED screen.

- **IF Frequency Adjustment:** The module supports independent IF frequency adjustment. This feature is crucial when measuring signals that have an intermediate frequency offset, such as in radio receivers or transceivers. The IF frequency can be set from 0 to 99.9999 MHz and can be configured to either add or subtract from the measured frequency. Refer to the detailed programming interface (ICSP) for advanced configuration.

- **LED Brightness Control:** The brightness of the 8-digit LED display can be adjusted. Use the onboard buttons to cycle through the brightness levels. The factory default is set to maximum brightness.

- **Gate Time:** The module typically offers different gate times (e.g., 0.01s, 0.1s, 1.0s) which affect the measurement accuracy and update speed. A shorter gate time provides faster updates but lower resolution, while a longer gate time offers higher resolution but slower updates.

Figure 4: A detailed view of the module's display and the two control buttons used for setting adjustments.

MAINTENANCE

To ensure the longevity and accurate performance of your PLJ-8LED-H module, follow these maintenance guidelines:

- **Cleaning:** Use a soft, dry cloth to clean the module. Avoid using abrasive cleaners or solvents that could damage the display or electronic components.

- **Storage:** Store the module in a cool, dry environment away from direct sunlight, excessive heat, and humidity.

- **Handling:** Handle the module with care to prevent physical damage. Avoid dropping it or subjecting it to strong impacts.

- **Power Supply:** Always use a stable DC power supply within the specified voltage range (9V-15V). Incorrect voltage can damage the device.

TROUBLESHOOTING

If you encounter issues with your PLJ-8LED-H module, refer to the following common troubleshooting steps:

- **No Display/No Power:**
  - Check the power supply connection. Ensure it is securely plugged into the "DC In" port.
  - Verify that the power supply voltage is within the 9V-15V DC range.
  - Inspect the power cable for any damage or reversed wiring. Some users have reported that the power cable wires might be reversed, requiring a minor correction. Ensure the black wire connects to negative (-) and red to positive (+).

- **Inaccurate Frequency Reading:**
  - Ensure the signal input cable is properly connected to the "RF In" port and the signal source.
  - Verify the input signal strength. The module has specified sensitivity ranges for low and high channels.
  - Check if an IF frequency offset is incorrectly set. Adjust or reset the IF frequency settings if necessary.
  - Allow the module a few minutes to warm up for stable and accurate readings, especially after initial power-on.

- **Display Flickering or Unstable Readings:**
  - This can occur with very low-level signals or noisy environments. Try to improve the signal-to-noise ratio of your input.
  - Ensure proper grounding of your setup.
  - Consider using a longer gate time if available, as this can stabilize the display by averaging measurements over a longer period.

WARRANTY AND SUPPORT

Walfront products are manufactured to high-quality standards. For specific warranty information and technical support, please refer to the documentation included with your purchase or contact Walfront customer service directly. Keep your purchase receipt as proof of purchase for any warranty claims.