

Jopwkuin KDT2400B 007

Jopwkuin RF2126 Amplifier 1500-2600MHz Instruction Manual

Model: KDT2400B 007



1. INTRODUCTION

This manual provides detailed instructions for the proper installation, operation, and maintenance of the Jopwkuin RF2126 Amplifier. This RF power amplifier is designed for applications requiring signal amplification within the 1500-2600MHz frequency range, featuring a compact design and integrated heatsink for stable performance.

2. PRODUCT FEATURES

- **Frequency Range:** Operates within 1500-2600MHz.
- **Compact Design:** Mini size with SMA input/output connectors, suitable for space-constrained applications.
- **Dual Version Capability:** Available in a wideband version for saturated output across 1500-2600MHz, or a narrow 2.4GHz bandwidth version for maximum gain.
- **Robust PCB:** Features a 1.6mm thick double-sided board for enhanced durability and performance.
- **Integrated Heatsink:** Equipped with a heatsink for efficient heat dissipation, ensuring long-term stable operation.
- **High Power Output:** P1dB power compression point at 30dBm.

3. SPECIFICATIONS

| Parameter | Value |
|-------------------|-------------------|
| Model | KDT2400B 007 |
| Working Frequency | 1500-2600MHz |
| Gain | 30dB (at 2000MHz) |

| | |
|------------------------------|--|
| Power Supply | 6V (450mA at Maximum Power Output) |
| P1dB Power Compression Point | 30dBm |
| Maximum Input | 10dBm |
| Input/Output Impedance | 50Ω |
| Product Dimensions | 5.12 x 3.54 x 0.79 inches (approx. 130 x 90 x 20 mm) |
| Item Weight | 1.66 ounces (approx. 47 grams) |
| Manufacturer | Jopwkuin |

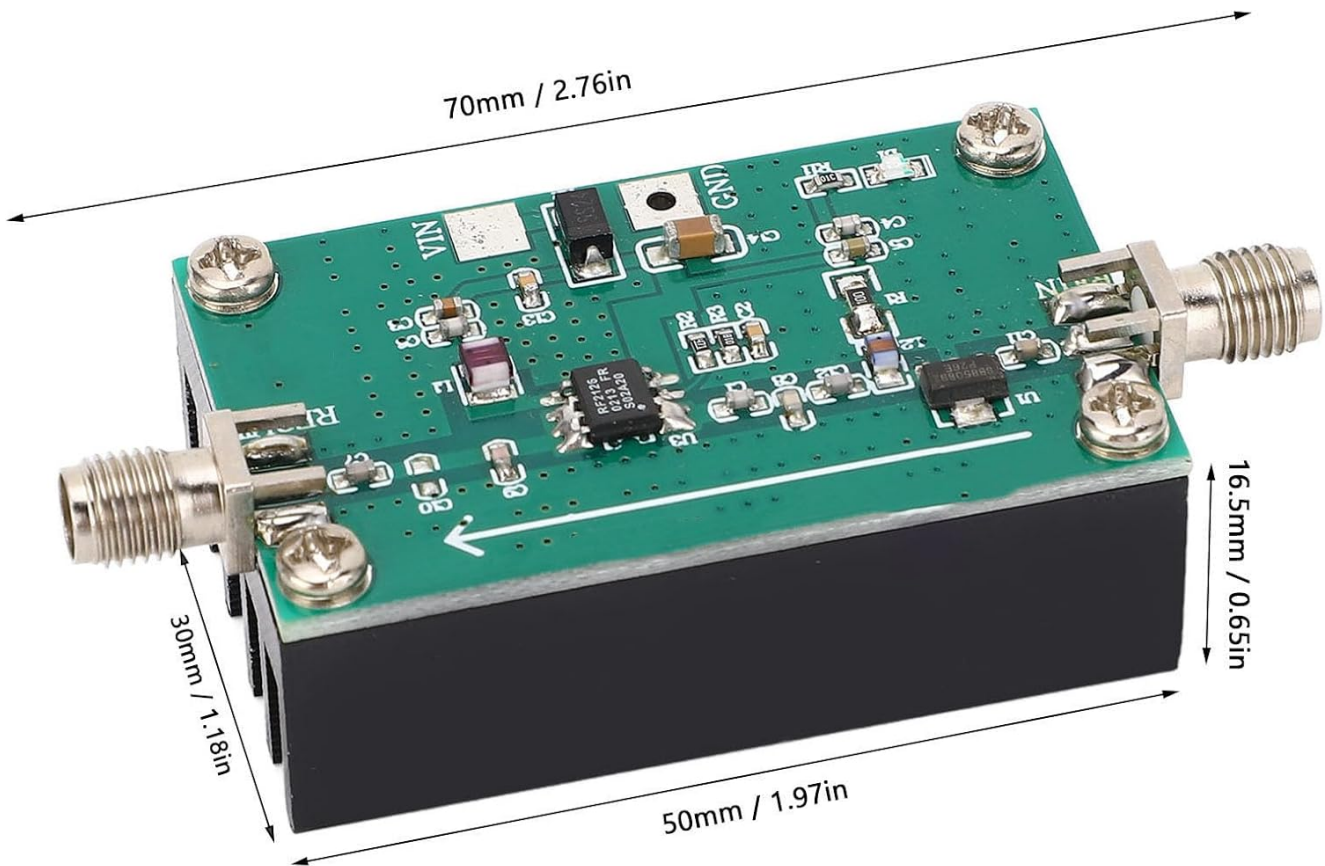


Image: Diagram illustrating the physical dimensions of the RF amplifier, including its length, width, and height, with measurements in both millimeters and inches.

4. PACKAGE CONTENTS

- 1 x RF Power Amplifier (Model: KDT2400B 007)

5. SETUP AND CONNECTION

The RF2126 Amplifier is designed for direct connection and use. Follow these steps for proper setup:

1. **Prepare Load:** Ensure that a proper load (e.g., antenna, dummy load) is connected to the output SMA connector of the amplifier. **Warning: The output must never be suspended. Connect the load before applying power.**
2. **Connect Input:** Connect your RF signal source to the input SMA connector.
3. **Power Supply:** Connect a stable 6V DC power supply to the designated soldering points on the board. The

amplifier requires approximately 450mA at maximum power output.

4. **Verify Connections:** Double-check all connections for security and correct polarity before powering on.



Image: Top view of the RF amplifier circuit board, highlighting the SMA input/output ports and power supply connection points (VIN, GND).

6. OPERATING INSTRUCTIONS

Once the amplifier is correctly set up and connected, operation is straightforward:

1. **Apply Power:** Turn on the 6V DC power supply.
2. **Input Signal:** Provide the RF input signal within the 1500-2600MHz frequency range to the input SMA connector. Ensure the input power does not exceed 10dBm.
3. **Monitor Output:** The amplifier will boost the input signal. Monitor the output signal with appropriate test equipment (e.g., spectrum analyzer, power meter) to ensure desired performance.



Image: Side profile of the RF amplifier, showing the heatsink and SMA connectors.

7. MAINTENANCE AND CARE

To ensure the longevity and optimal performance of your RF2126 Amplifier, observe the following maintenance guidelines:

- **Heat Dissipation:** The module will generate heat during prolonged operation. Ensure adequate airflow around the heatsink to facilitate proper heat dissipation. Avoid obstructing the heatsink fins.
- **Cleanliness:** Keep the amplifier free from dust and debris. Use a soft, dry cloth for cleaning. Do not use liquid cleaners.
- **Storage:** Store the amplifier in a cool, dry environment when not in use, away from direct sunlight and extreme temperatures.
- **Connection Integrity:** Periodically check SMA connections for tightness and ensure the power supply connections are secure.



Image: Angled view of the RF amplifier, emphasizing the heatsink structure for thermal management.

8. SAFETY INFORMATION AND WARNINGS

- **Never operate the amplifier without a proper load connected to its output.** Operating without a load can cause damage to the amplifier.
- Ensure the power supply voltage is exactly 6V DC. Incorrect voltage can damage the device.
- Do not exceed the maximum input power of 10dBm.
- Avoid touching the heatsink during operation, as it may become hot.
- This device is intended for professional or hobbyist use in RF applications. Handle with care.

9. TROUBLESHOOTING

| Problem | Possible Cause | Solution |
|-------------------------------|--|--|
| No output signal or low gain. | <ul style="list-style-type: none">• Incorrect power supply voltage or no power.• Input signal too weak or incorrect frequency.• Output load not connected or faulty.• Damaged SMA connectors or cables. | <ul style="list-style-type: none">• Verify 6V DC power supply and connections.• Check input signal strength and frequency range (1500-2600MHz).• Ensure a proper 50Ω load is connected to the output.• Inspect and replace faulty connectors or cables. |

| | | |
|---|--|---|
| <p>Amplifier becomes excessively hot.</p> | <ul style="list-style-type: none"> • Insufficient heat dissipation. • Operating at maximum power for extended periods without adequate cooling. • Output load mismatch. | <ul style="list-style-type: none"> • Ensure proper airflow around the heatsink. • Consider adding external cooling if operating continuously at high power. • Verify the output load impedance is 50Ω. |
| <p>Device not powering on.</p> | <ul style="list-style-type: none"> • Power supply issue. • Incorrect wiring to VIN/GND. | <ul style="list-style-type: none"> • Check power supply functionality and voltage. • Re-verify power connections to the amplifier board. |

