Comimark LY345

Comimark TEA5767 FM Stereo Radio Module User Manual

Model: LY345 | Brand: Comimark

1. Introduction

This manual provides comprehensive instructions for the Comimark TEA5767 Programmable Low-Power FM Stereo Radio Module. Designed for integration into various electronic projects, particularly with Arduino and similar microcontrollers, this module offers high-sensitivity FM reception. It is ideal for applications requiring compact and efficient radio functionality.

2. Key Features

- Built-in TEA5767 FM IC for reliable performance.
- High sensitivity with an integrated low-noise RF input amplifier.
- Wide frequency range: 76 MHz to 108 MHz, covering standard FM bands.
- Suitable for handheld and portable applications due to its low-power design.
- Includes a built-in 32.768 kHz clock crystal for stable operation.

3. What's in the Box

Your package includes the following items:

- 2 x Comimark TEA5767 Programmable Low-Power FM Stereo Radio Modules

4. Specifications

Specification	Value
Product Dimensions	1 x 1 x 1 inches (approximate)
Item Weight	0.634 ounces (approximate)

Specification	Value
Manufacturer	Comimark
Model Number	LY345
Frequency Range	76 MHz - 108 MHz
Tuner Technology	FM
Connectivity Technology	Auxiliary, USB (for host connection)
Power Source	External (e.g., from microcontroller)
Hardware Interface	I2C (typical for TEA5767)

5. Product Overview

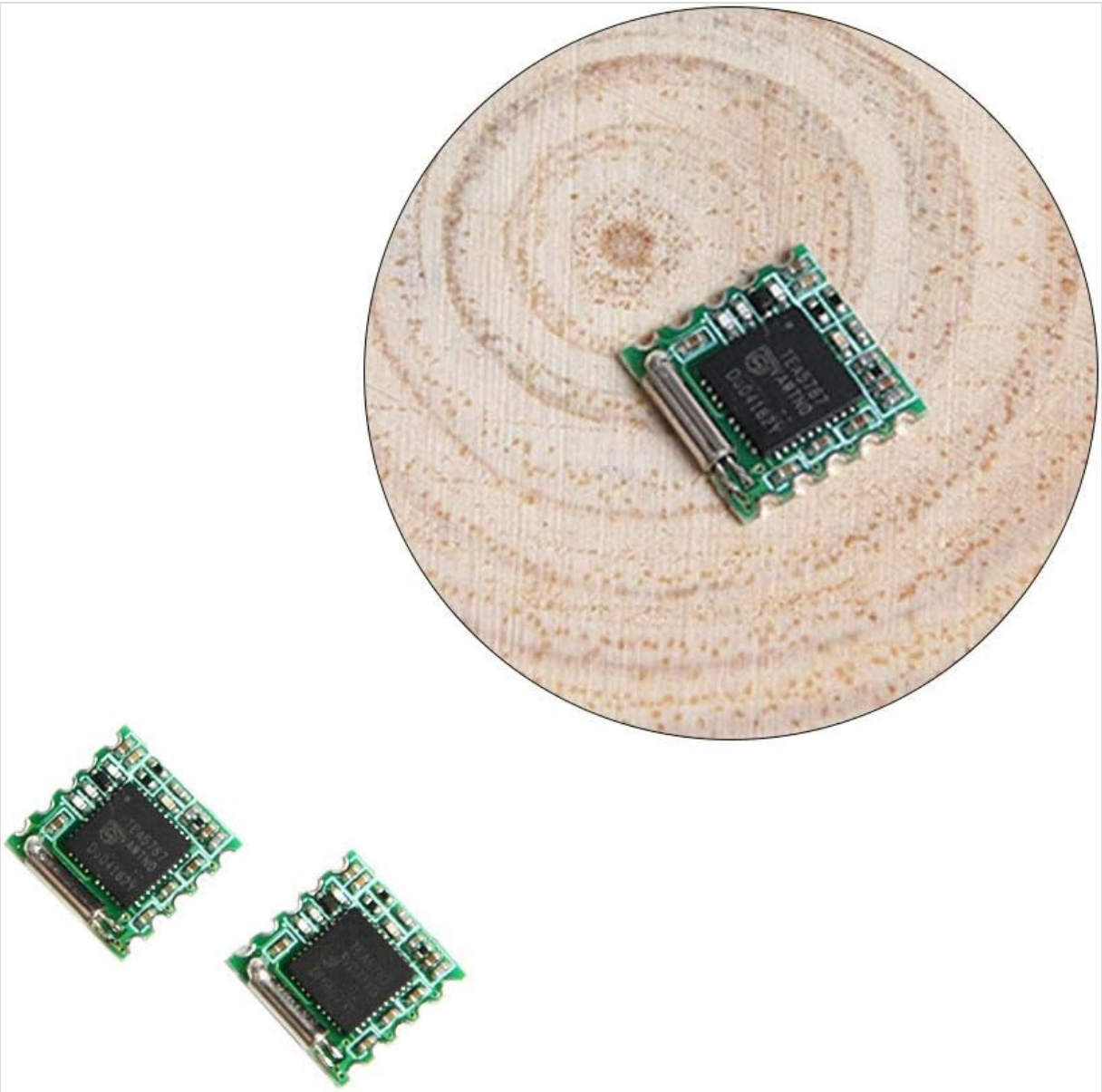

Figure 5.1: Overview of the TEA5767 modules. This image displays two modules, with one prominently featured on a light wooden surface, highlighting its compact size and pin configuration.

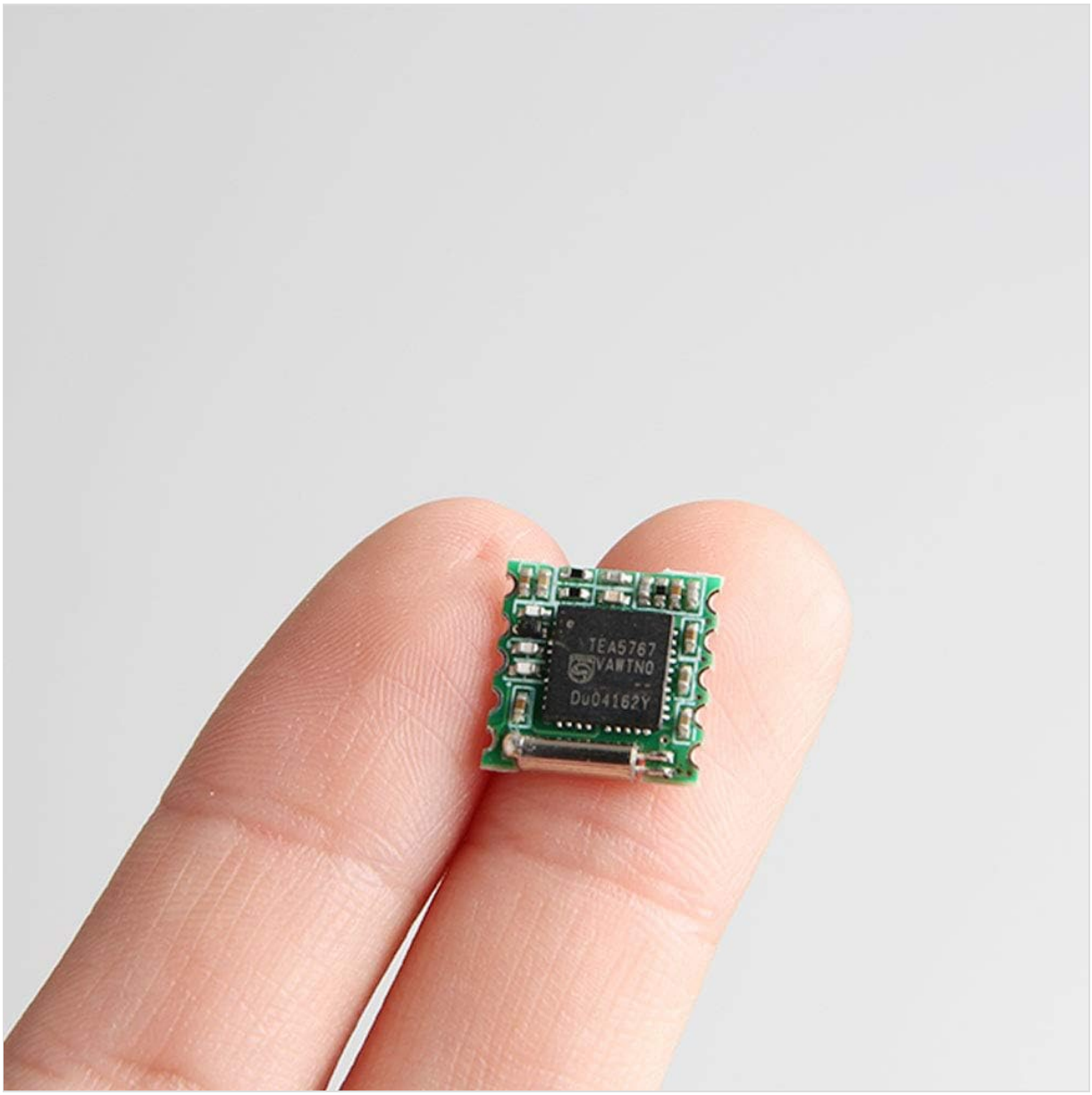

Figure 5.2: Module size comparison. This image illustrates the extremely small footprint of the TEA5767 module by showing it held between a person's thumb and forefinger.

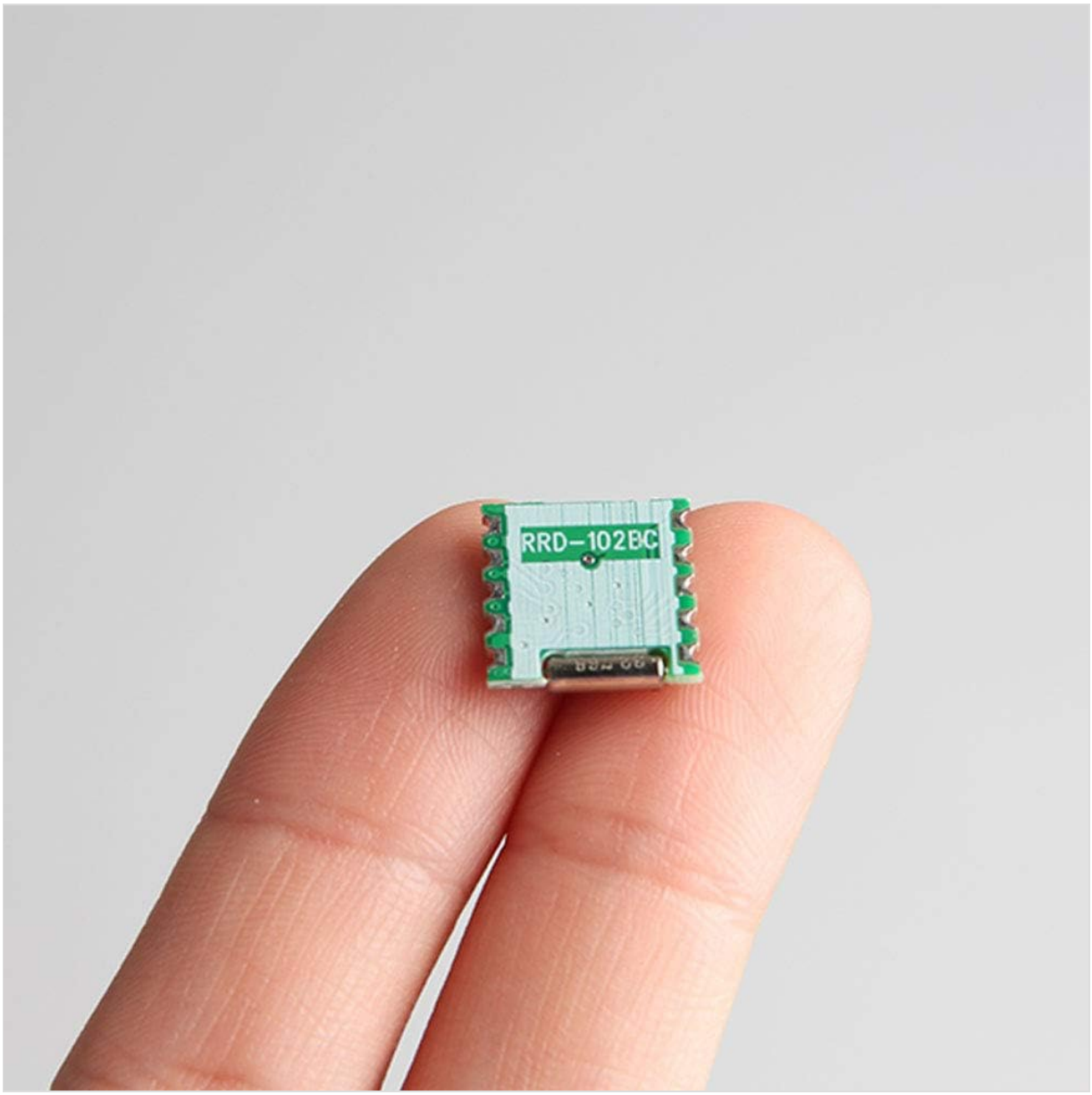

Figure 5.3: Underside view of the module. This perspective reveals the reverse side of the TEA5767 module, including the 'RRD-102BC' marking, again demonstrating its compact dimensions.

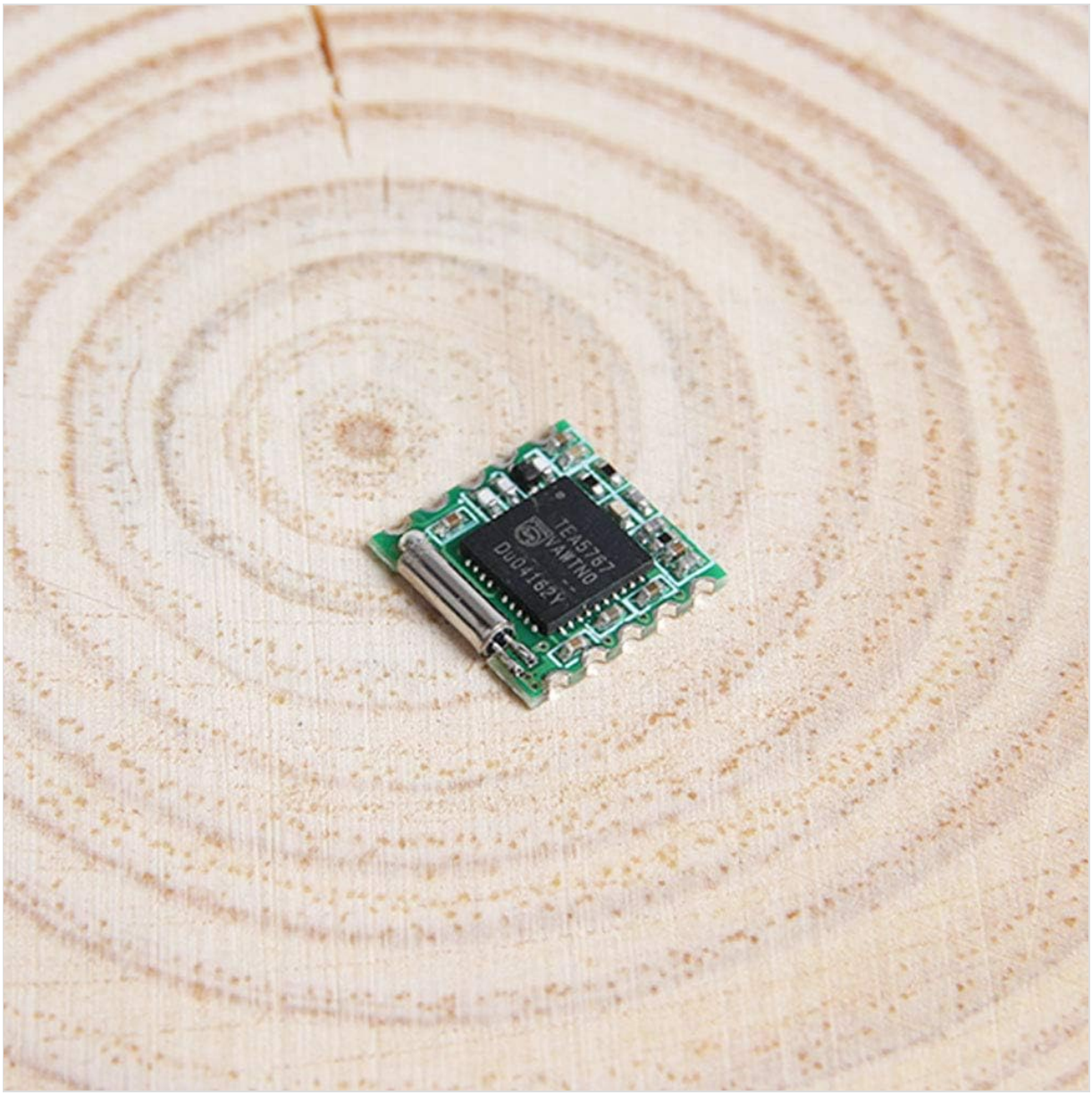

Figure 5.4: Angled view on wood. A single TEA5767 module is shown at an angle on a wooden surface, providing a clear view of its top components and pins.

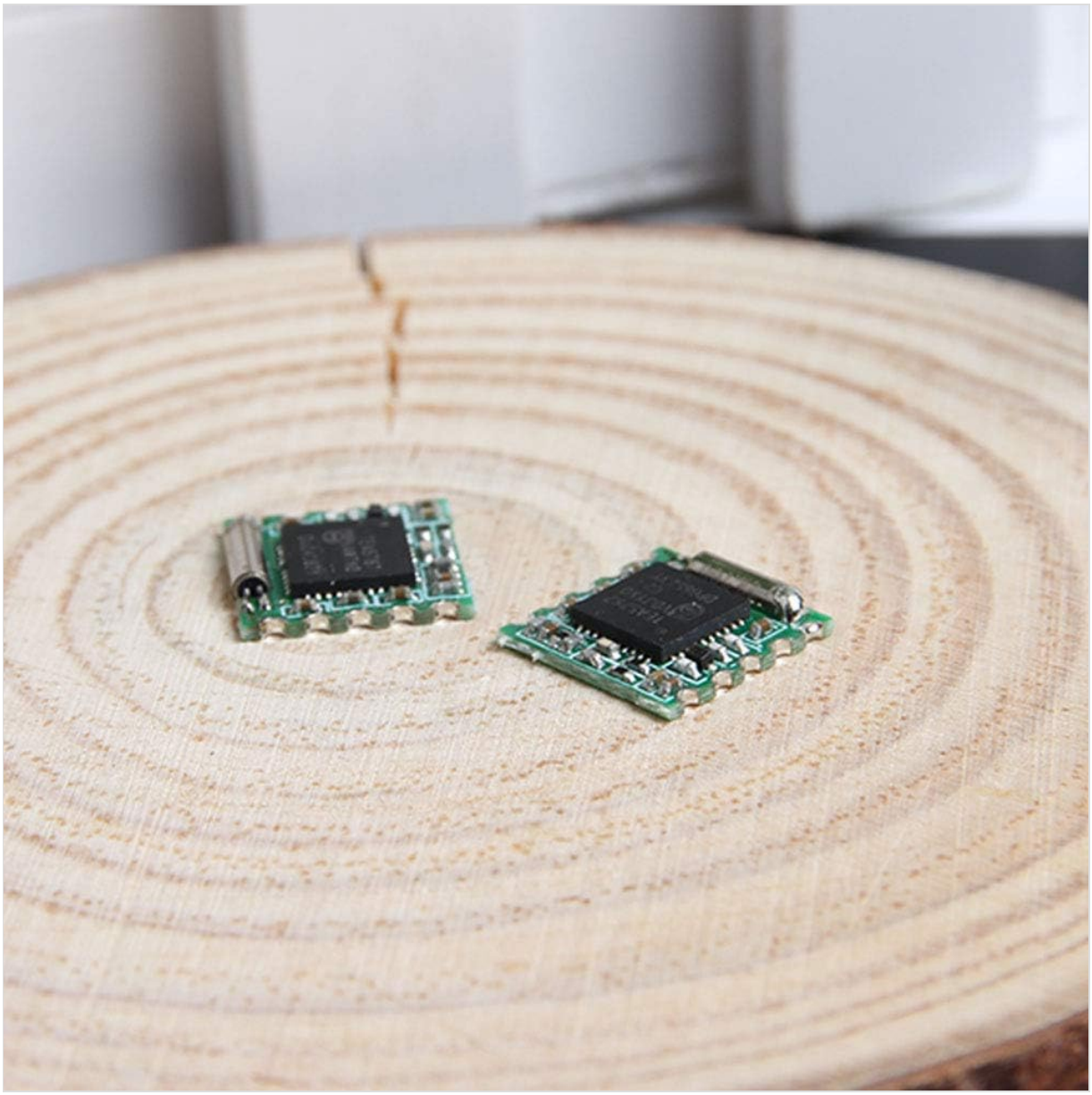

Figure 5.5: Two modules on wood. This image presents two TEA5767 modules placed next to each other on a wooden background, emphasizing the quantity included in the package.

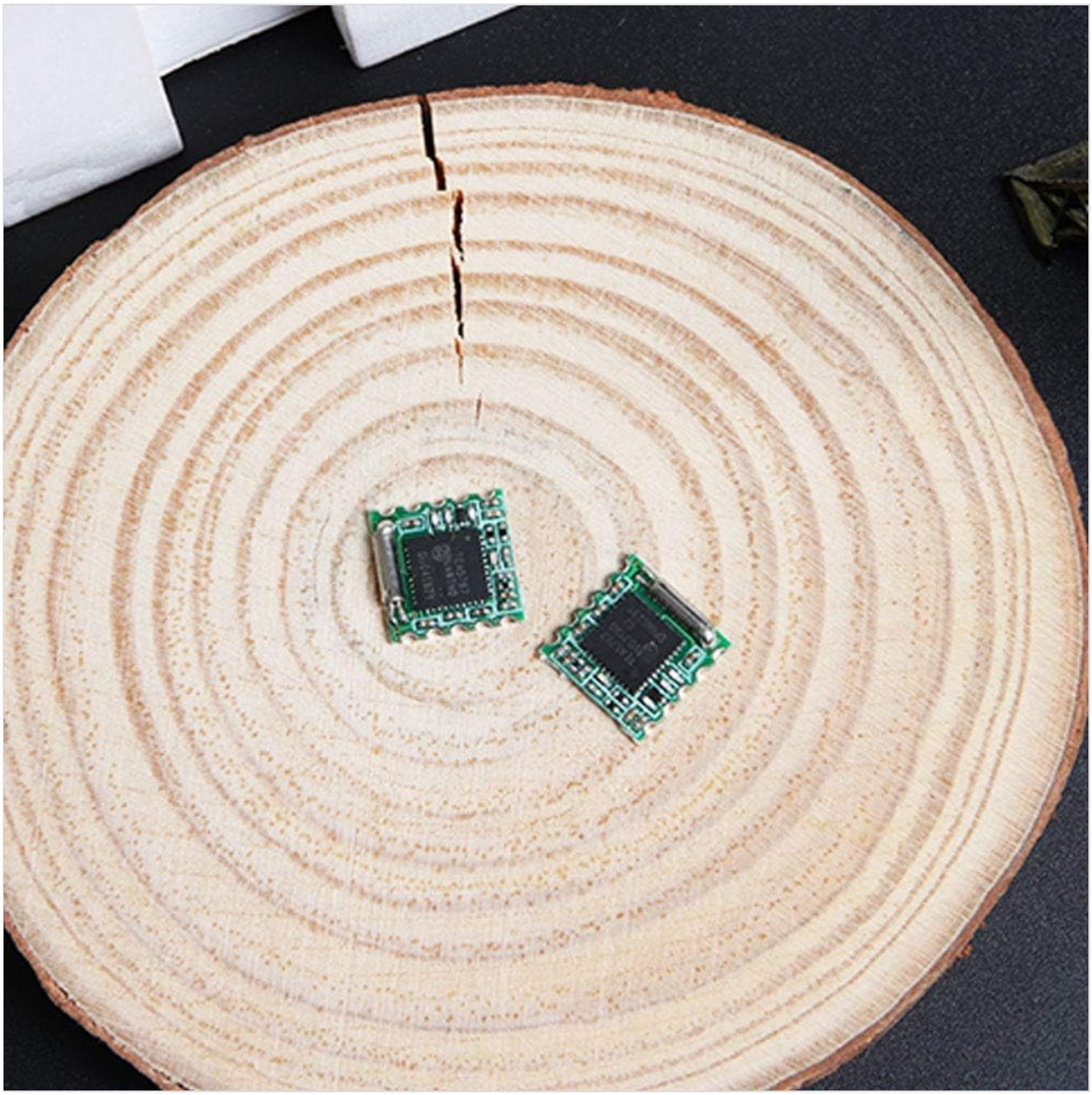

Figure 5.6: Top-down view of modules. An overhead shot of the two modules on a wooden surface, offering a clear perspective of their layout and design from above.

Figure 5.7: Modules on dark background. Two modules are displayed on a dark surface, with one showing its top side and the other its bottom side, allowing for comparison of both faces.

Figure 5.8: Modules with background elements. This image shows the two modules on a dark surface, with a subtle background element (a plant) adding context to the setting.

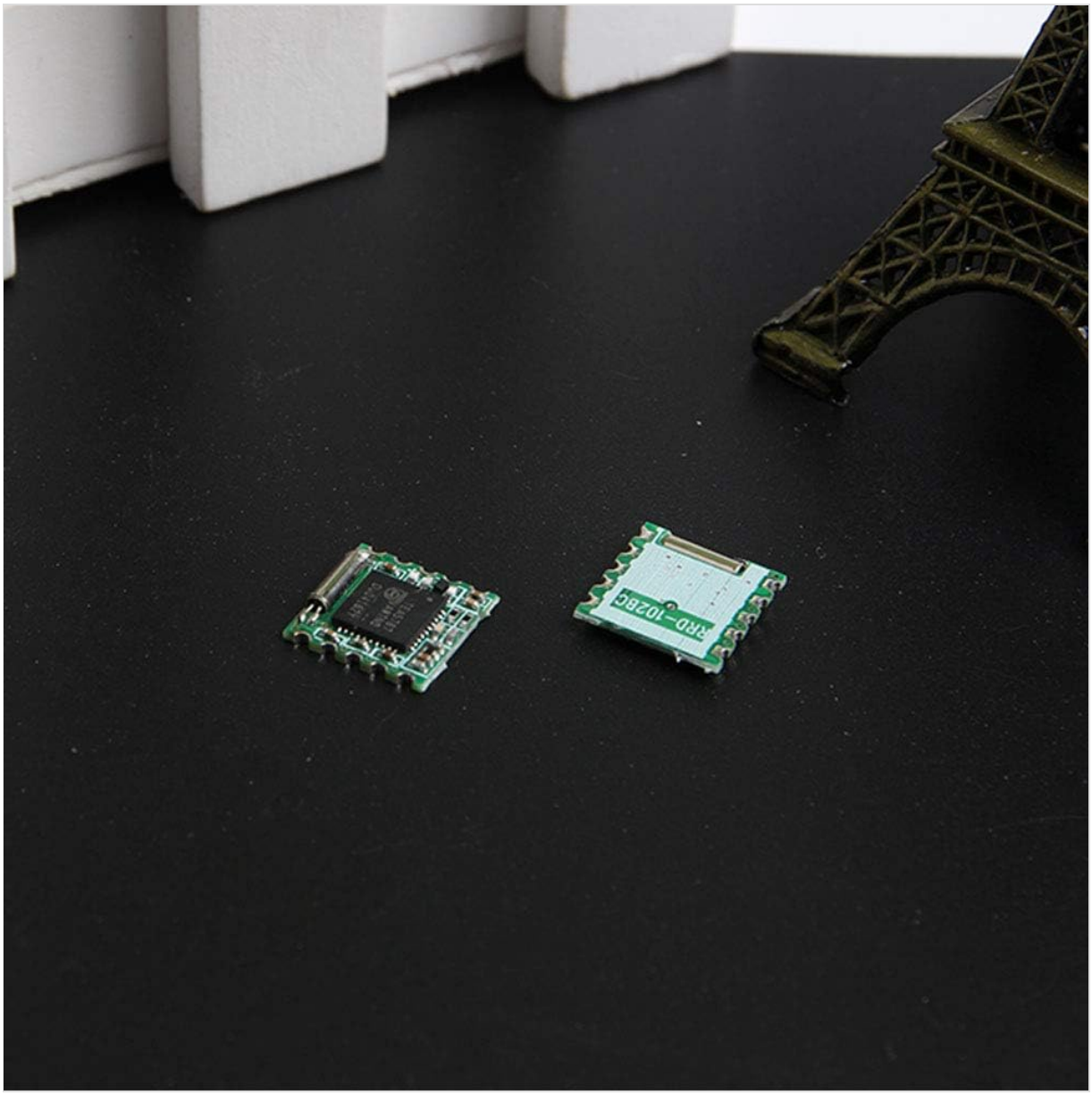

Figure 5.9: Detailed view of modules. A closer shot of the two modules on a dark surface, providing a more detailed look at their integrated circuits and soldering points.

6. Setup Guide

The TEA5767 module is designed for integration into custom electronic circuits, typically with microcontrollers like Arduino. Basic setup involves proper electrical connections and software configuration.

1. **Identify Pins:** Locate the VCC (power), GND (ground), SDA (data), and SCL (clock) pins on the TEA5767 module. Refer to the module's datasheet for exact pinout if available.
2. **Power Connection:** Connect the VCC pin to a stable 3.3V or 5V power supply (check module's voltage tolerance) and GND to your circuit's ground.
3. **I2C Connection:** Connect the SDA pin to your microcontroller's SDA (data) line and the SCL pin to your microcontroller's SCL (clock) line. These are typically A4 and A5 on Arduino Uno, or specific I2C pins on other boards.
4. **Antenna:** Solder a wire (approximately 75cm for optimal FM reception) to the antenna pad on the module, or connect a suitable FM antenna.
5. **Software Library:** Install a compatible TEA5767 library for your chosen microcontroller platform (e.g., Arduino IDE).

6. **Initial Code:** Load example code from the library to test basic functionality, such as tuning to a specific frequency.

7. Operating Instructions

Once the module is correctly wired and the necessary software library is installed, you can begin operating the FM radio module through your microcontroller's programming.

1. **Initialize Module:** In your code, initialize the TEA5767 module using the library functions. This typically involves setting up the I2C communication.
2. **Tune Frequency:** Use the library's functions to set the desired FM frequency. Frequencies are usually specified in MHz (e.g., 98.1 for 98.1 MHz).
3. **Volume Control:** The TEA5767 module itself does not have direct volume control. Volume adjustment must be handled by an external audio amplifier or the device receiving the audio output.
4. **Stereo/Mono:** The module supports stereo output. Ensure your audio circuit is configured for stereo if desired.
5. **Seek Function:** Many libraries provide functions to automatically seek for the next available strong station.
6. **Read Signal Strength:** Advanced libraries may allow reading the signal strength indicator (RSSI) for fine-tuning or station selection.

8. Maintenance

The TEA5767 module is a robust electronic component that requires minimal maintenance. Following these guidelines will help ensure its longevity:

- **Handle with Care:** As with all electronic components, avoid dropping or subjecting the module to physical shock.
- **Keep Dry:** Protect the module from moisture and humidity, which can cause short circuits and corrosion.
- **Cleanliness:** Keep the module free from dust and debris. Use a soft, dry brush or compressed air for cleaning if necessary. Avoid liquid cleaners.
- **Proper Storage:** When not in use, store the module in an anti-static bag in a cool, dry place.
- **Power Supply:** Ensure a stable and correct voltage power supply is used to prevent damage to the module.

9. Troubleshooting

If you encounter issues with your TEA5767 module, consider the following troubleshooting steps:

- **No Power/Module Not Responding:**
  - Verify all power connections (VCC, GND) are correct and stable.
  - Check the voltage supplied to the module matches its requirements.
- **No Audio Output:**
  - Ensure the audio output pins are correctly connected to your amplifier or audio device.
  - Check the antenna connection and ensure it is of adequate length and properly connected.
  - Try tuning to a known strong local FM station.

- Verify your audio amplifier or speaker system is functioning correctly.

- **Poor Reception/Static:**
  - Improve your antenna setup. A longer wire or a dedicated FM antenna may be needed.
  - Ensure there are no strong electromagnetic interference sources nearby.
  - Check for loose connections or cold solder joints.

- **Module Not Communicating (I2C Issues):**
  - Verify SDA and SCL connections to your microcontroller.
  - Ensure pull-up resistors are used on the I2C lines if your microcontroller does not provide them internally.
  - Check your microcontroller code for correct I2C initialization and addressing.

- **Software Errors:**
  - Ensure you are using the correct and up-to-date library for the TEA5767 module.
  - Review your code for any logical errors or incorrect function calls.

10. Warranty Information

Comimark products are manufactured to high-quality standards. This product is covered by a standard limited warranty against defects in materials and workmanship from the date of purchase. Please retain your proof of purchase for warranty claims. The warranty does not cover damage caused by misuse, accident, unauthorized modification, or improper installation.

11. Customer Support

For technical assistance, troubleshooting, or any inquiries regarding your Comimark TEA5767 FM Stereo Radio Module, please contact our customer support team. We are committed to providing prompt and helpful service.
You can reach us via the buyer center or the support email provided at the point of purchase. Our team is available for quick replies to assist you with any issues.