

Shutao MICS6814

Shutao MICS-6814 Gas Sensor Board Air Quality Detection Module User Manual

Model: MICS6814

1. INTRODUCTION

This manual provides essential instructions for the proper setup, operation, and maintenance of the Shutao MICS-6814 Gas Sensor Board. This module is designed for air quality detection, capable of sensing various gases including carbon monoxide (CO), ammonia (NH₃), and nitrogen dioxide (NO₂).

2. SAFETY INFORMATION

- Ensure the module is powered within the specified voltage range (DC 4.9V~5.1V) to prevent damage.
- Handle the sensor board with care to avoid electrostatic discharge, which can harm electronic components.
- Operate the module within the specified temperature and humidity ranges (-30~85°C, 5~95%RH) for optimal performance and longevity.
- Do not expose the sensor to corrosive gases or liquids, as this may permanently damage the sensing elements.
- Keep out of reach of children.

3. PRODUCT OVERVIEW

The MICS-6814 is a compact gas sensor module featuring three separate gas sensing elements integrated onto a single chip. This design allows for the detection of multiple gases simultaneously. The module is suitable for various applications, including monitoring automobile exhaust and industrial/agricultural waste gases.

3.1 Key Features

- Integrated three separate gas sensing elements.
- Detects CO, NH₃, and NO₂.
- Compact module size: 16.9mm x 14.1mm x 3.2mm.
- Operating voltage: DC 4.9V~5.1V.
- Wide operating temperature and humidity range.

3.2 Module Components and Pinout

The module includes a precision micromechanical diaphragm and an embedded heating resistor with the sensing layer at the top. It features standard pin headers for easy integration.

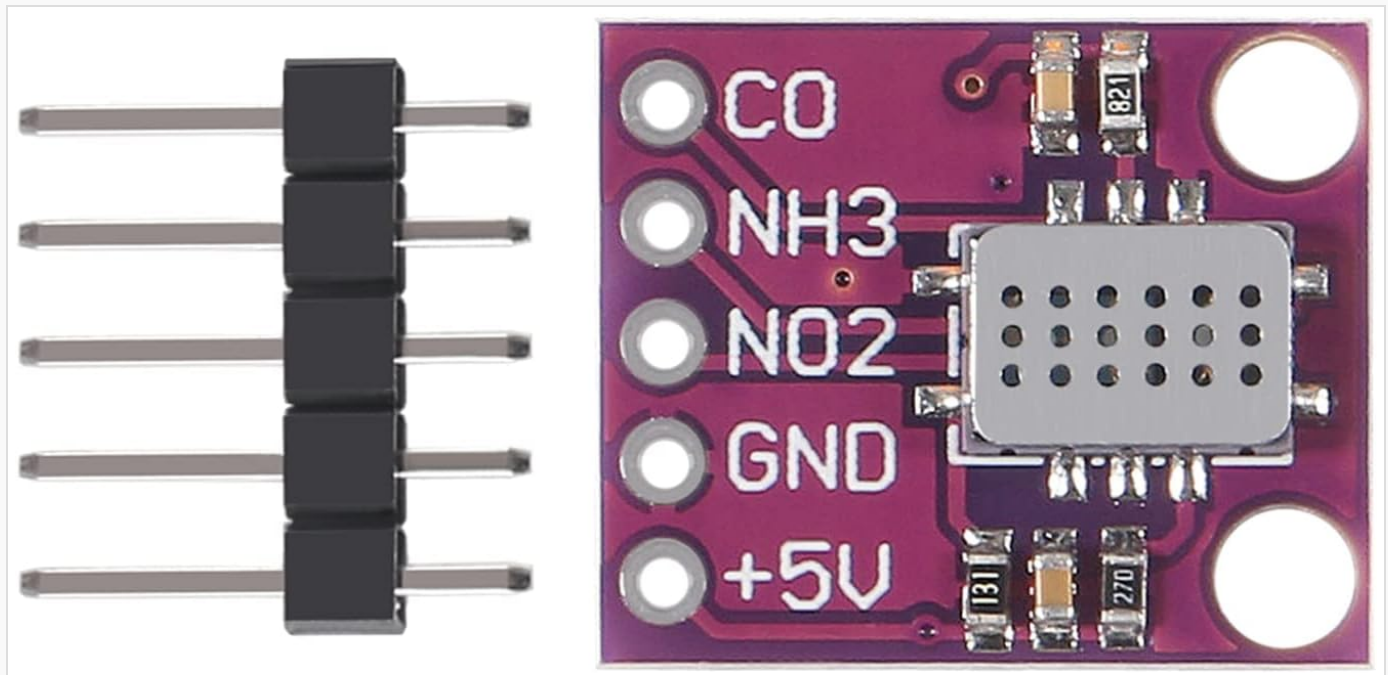


Figure 1: Front view of the MICS-6814 Gas Sensor Board. The pins are labeled CO, NH3, NO2, GND, and +5V, indicating connections for Carbon Monoxide, Ammonia, Nitrogen Dioxide, Ground, and 5 Volt power supply, respectively.

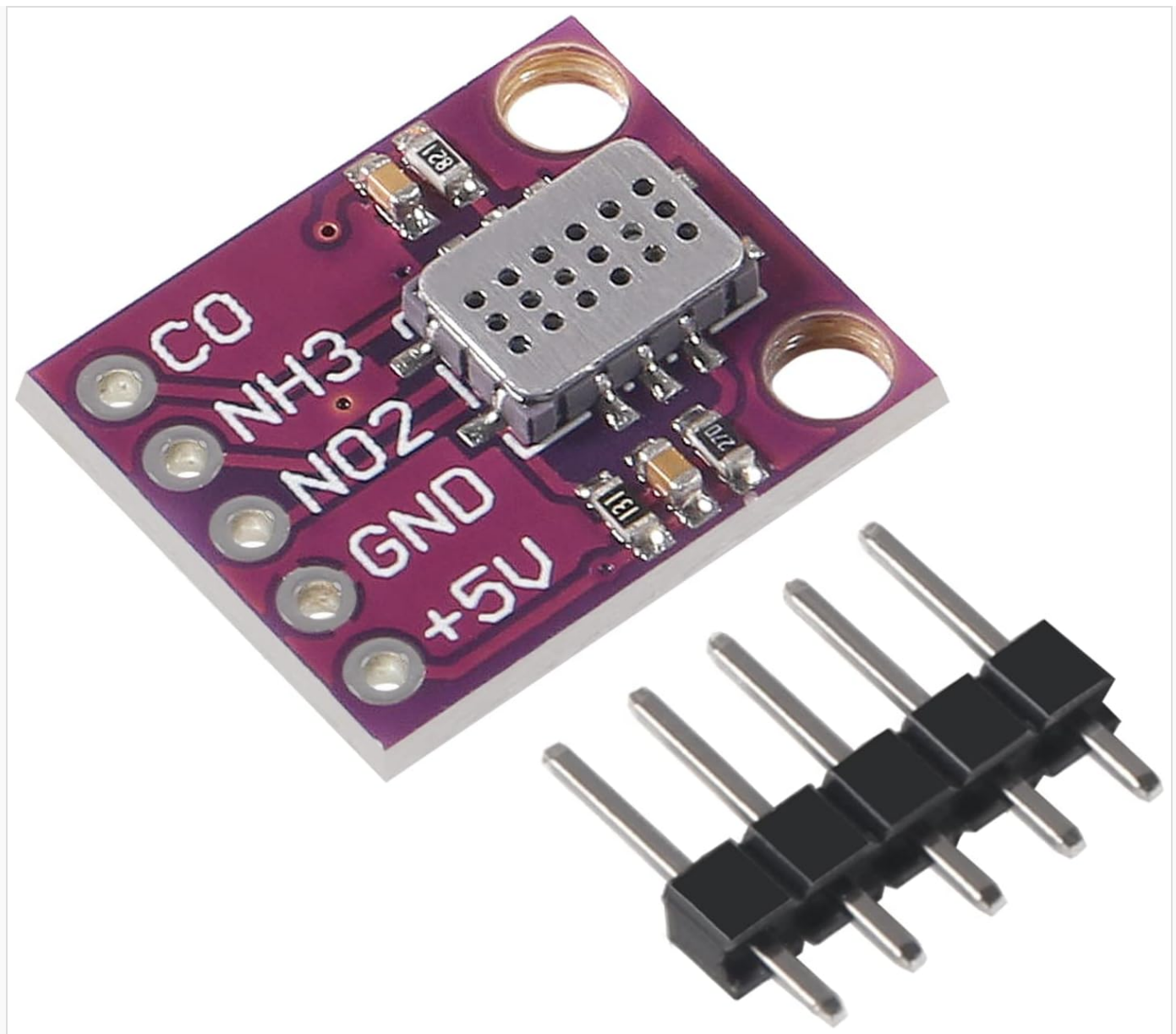


Figure 2: Back view of the MICS-6814 Gas Sensor Board, displaying the model identifier "CJMCU-6814".

4. SETUP

To integrate the MICS-6814 module into your system, follow these steps:

1. **Power Connection:** Connect the +5V pin to a stable DC 4.9V to 5.1V power source. Connect the GND pin to the system's ground.
2. **Signal Connections:** The CO, NH3, and NO2 pins provide analog output signals corresponding to the detected gas concentrations. Connect these pins to analog input pins on your microcontroller or data acquisition system.
3. **Mounting:** The module includes two M3 mounting holes for secure installation.

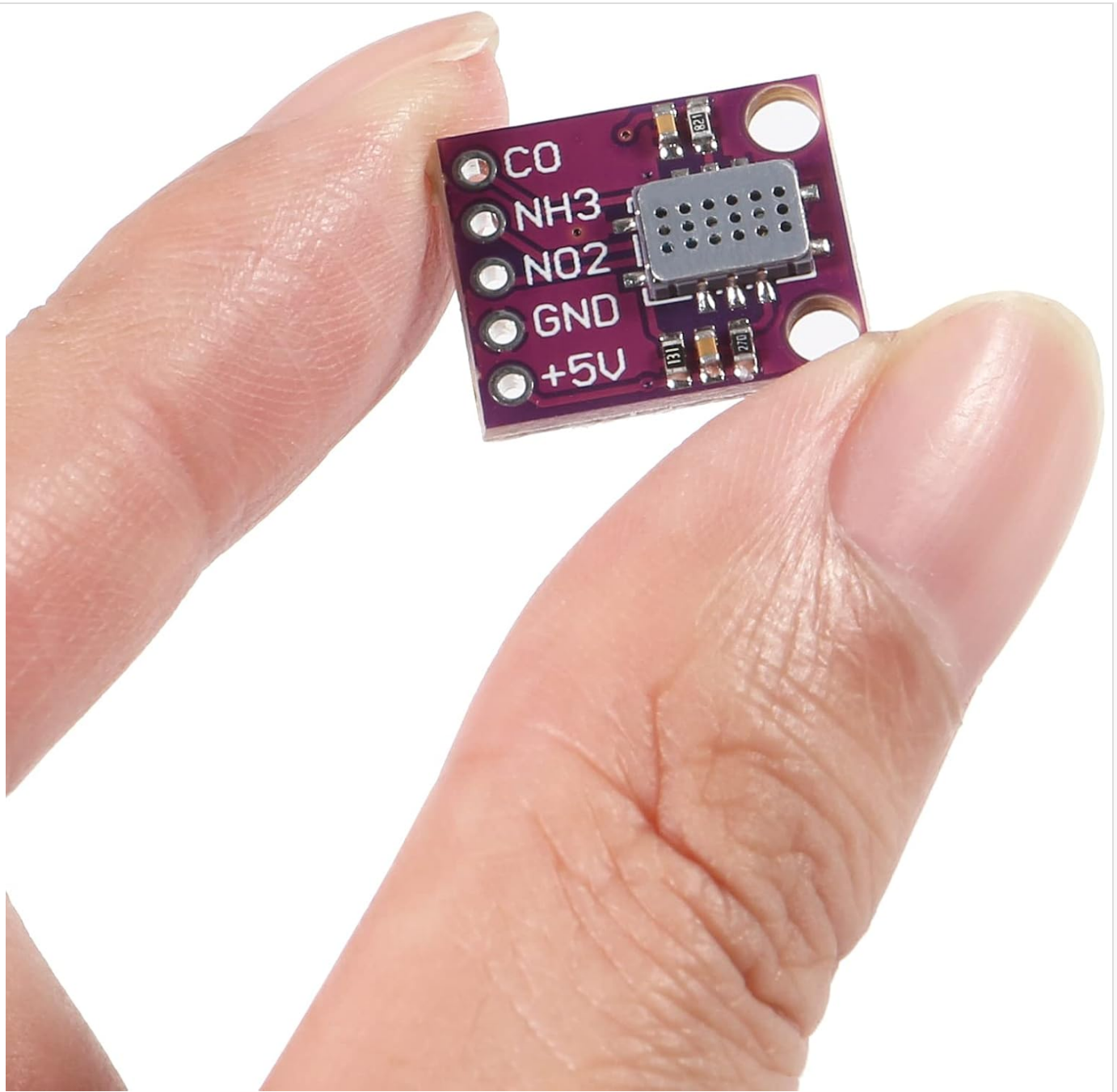


Figure 3: Angled view of the MICS-6814 module, showing the header pins ready for connection to a breadboard or custom PCB.

5. OPERATING INSTRUCTIONS

Once connected, the MICS-6814 sensor will begin to warm up and stabilize. Gas sensors typically require a warm-up period before providing accurate readings. Refer to the sensor's datasheet for specific warm-up times and calibration procedures.

- **Data Acquisition:** Read the analog voltage from the CO, NH3, and NO2 output pins using your microcontroller's Analog-to-Digital Converter (ADC).
- **Interpretation:** The output voltage will vary with the concentration of the respective gases. Consult the MICS-6814 datasheet for conversion formulas and sensitivity curves to translate voltage readings into gas concentration values (e.g., ppm).
- **Environmental Considerations:** Ensure the sensor operates within its specified environmental conditions to maintain accuracy. Extreme temperatures or humidity can affect sensor performance.

6. MAINTENANCE

- **Cleaning:** Keep the sensor surface clean and free from dust or debris. Use a soft, dry brush or compressed air if necessary. Avoid using liquids or solvents.
- **Storage:** Store the module in a dry, non-corrosive environment when not in use.
- **Recalibration:** Over time, gas sensors may drift. Periodic recalibration according to the sensor's datasheet or application notes is recommended for critical applications.

7. TROUBLESHOOTING

- **No Output/Incorrect Readings:**
 - Verify power supply voltage is within 4.9V-5.1V.
 - Check all wiring connections for proper contact and polarity.
 - Ensure the sensor has completed its warm-up period.
 - Confirm the analog input pins on your microcontroller are correctly configured.
- **Sensor Drift:**
 - Consider recalibrating the sensor if readings become consistently inaccurate over time.
 - Ensure the operating environment is stable and within specified limits.

8. SPECIFICATIONS

Feature	Value
Module Supply Voltage	DC 4.9V~5.1V
Operating Temperature	-30°C to 85°C
Operating Humidity	5% to 95% RH
Module Dimensions (L x W x H)	16.9mm x 14.1mm x 3.2mm (0.67"D x 0.56"W x 0.13"H)
Item Weight	0.02 Kilograms (0.634 ounces)
Material	Iron
Model Number	MICS6814
UPC	701715531949

9. WARRANTY AND SUPPORT

For warranty information or technical support regarding your Shutao MICS-6814 Gas Sensor Board, please refer to the seller's policies or contact the manufacturer directly. Keep your purchase receipt for any warranty claims.

Manufacturer: Shutao

For further assistance, please visit the product page on [Amazon.com](https://www.amazon.com).

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