SIM808

Generic SIM808/SIM868 GSM GPRS GPS SMS Module User Manual

Comprehensive instructions for setup, operation, and maintenance.

1. Introduction

This manual provides detailed instructions for the Generic SIM808/SIM868 GSM GPRS GPS SMS Module. This compact breakout board integrates GSM, GPRS, GPS, and SMS functionalities, making it suitable for various development projects requiring cellular communication and location tracking. It also features a TF card slot and supports a wide DC input voltage range.

The module is designed for ease of integration and control via AT commands, offering robust wireless communication and precise GPS capabilities.

2. Product Overview

The SIM808/SIM868 module is a versatile development board. Key features include:

- **GSM/GPRS Connectivity:** Supports quad-band GSM for global communication.
- **GPS Functionality:** Integrated GPS receiver for accurate positioning.
- **SMS Capability:** Send and receive text messages.
- **TF Card Slot:** For data storage.
- **Wide Voltage Input:** Operates on DC 5-18V.
- **AT Command Control:** Easy integration with microcontrollers.
- **Bluetooth:** Compliant with specification 3.0+EDR.

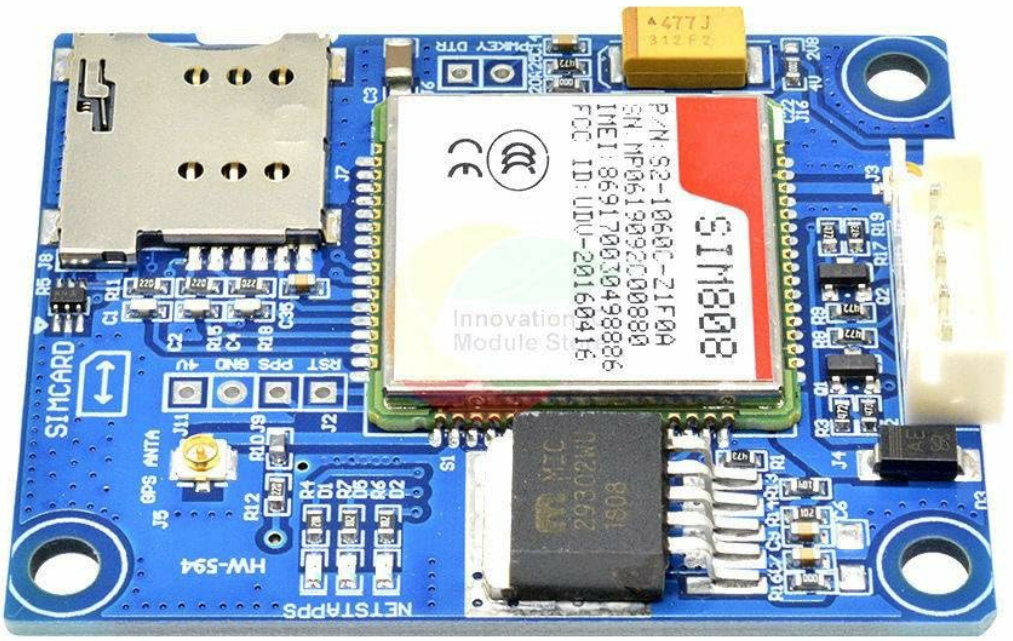

Figure 1: Top-down view of the SIM808/SIM868 module, showing the SIM808 chip, SIM card slot, and various connectors.

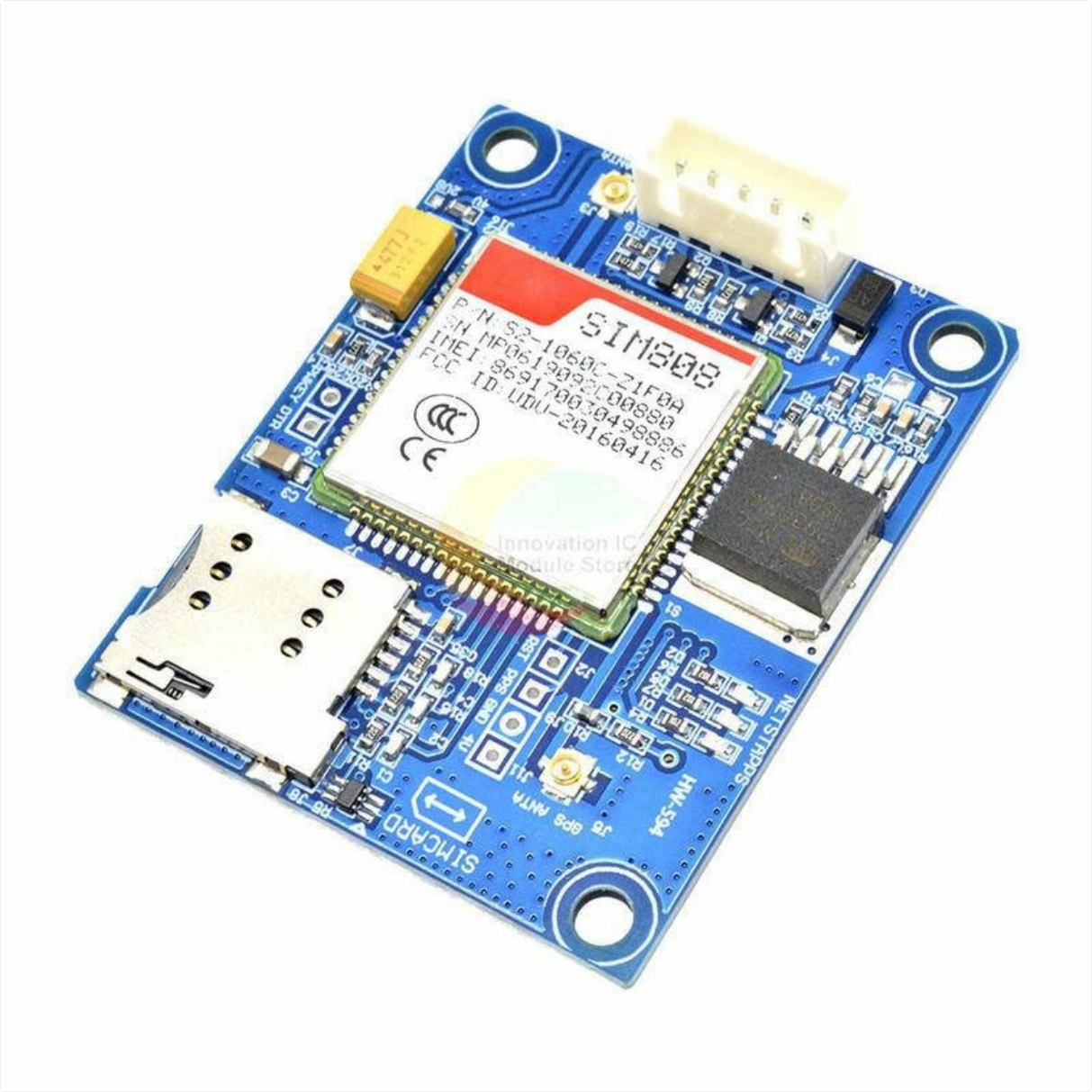

Figure 2: Angled view highlighting the SIM card slot and surrounding components on the module.

3. Setup Instructions

3.1 Power Supply Connection

Connect a DC power source within the range of 5V to 18V to the designated power input pins. Ensure correct polarity to prevent damage to the module. The module also has a lithium battery interface supporting 3.4V to 4.4V.

3.2 SIM Card Installation

1. Locate the SIM card slot on the module.
2. Gently insert a 1.8V or 3V SIM card into the slot, ensuring proper orientation as indicated on the board. The module supports 2G, 3G, and 4G mobile Unicom cards.
3. Ensure the SIM card is securely seated.

Figure 3: Angled view of the module, clearly showing the TF card slot and SIM card slot.

3.3 TF Card Installation

Insert a TF (MicroSD) card into the dedicated TF card slot for data logging or storage purposes. Ensure the card is inserted correctly until it clicks into place.

3.4 Antenna Connections

Connect the appropriate antennas to their respective connectors:

- **GPS ANTA:** Connect the GPS antenna for satellite positioning functionality.
- **GSM ANTA:** Connect the GSM antenna for cellular communication (GSM/GPRS/SMS).

Figure 4: Angled view of the module, indicating the locations for antenna connections.

3.5 Serial Port Connection

Connect the module's serial port to your microcontroller or computer using a suitable UART interface. The serial port supports automatic baud rate recognition, ranging from 1200 to 115200 bps.

4. Operating Instructions

4.1 AT Command Control

The SIM808/SIM868 module is controlled via standard AT commands. Refer to the SIM808/SIM868 AT Command Set documentation for a comprehensive list of commands and their usage. Basic operations include:

- **Initializing the Module:** Sending "AT" to check communication.
- **GSM/GPRS Functions:** Commands for network registration, making calls, sending SMS, and GPRS data connections.
- **GPS Functions:** Commands for enabling GPS, querying location data, and configuring GPS settings.
- **SMS Functions:** Commands for sending, reading, and deleting SMS messages.

- **Bluetooth Functions:** Commands for enabling Bluetooth, scanning, connecting, and data transfer.

4.2 GSM/GPRS Operation

The module supports quad-band GSM (850, 900, 1800, 1900 MHz). Ensure your SIM card and network provider support these bands. GPRS data transmission rates can reach up to 85.6kbps for both downlink and uplink.

4.3 GPS Operation

With a connected GPS antenna, the module can acquire satellite signals for positioning. Horizontal accuracy is typically less than 2.5 meters. Power consumption during GPS acquisition is approximately 42mA (at 3.8V, -130dBm, GSM IDLE).

4.4 Bluetooth Operation

The module is compliant with Bluetooth specification 3.0+EDR. It features an integrated PA providing 10dBm output power and supports up to 4 ACL links. Use specific AT commands to enable and manage Bluetooth connections.

5. Maintenance

To ensure the longevity and optimal performance of your SIM808/SIM868 module, follow these maintenance guidelines:

- **Environmental Conditions:** Operate the module within the specified temperature range of -40°C to 85°C. Store it between -45°C and 90°C. Avoid exposure to extreme humidity, dust, or corrosive environments.
- **Cleaning:** If necessary, gently clean the module with a soft, dry cloth. Do not use liquid cleaners or solvents.
- **Handling:** Handle the module with care to avoid physical damage to components or connectors. Avoid static discharge by using appropriate ESD precautions.
- **Power Supply:** Always use a stable power supply within the recommended voltage range (DC 5-18V).

6. Troubleshooting

If you encounter issues with your SIM808/SIM868 module, consider the following troubleshooting steps:

- **No Power:**
  - Verify the power supply voltage is within DC 5-18V.
  - Check power connections for proper polarity and secure contact.
- **Module Not Responding to AT Commands:**
  - Ensure the serial port connection is correct (TX, RX, GND).
  - Confirm the baud rate setting on your host device matches the module's auto-recognized rate (1200-115200 bps).
  - Check if the module is powered on and initialized.
- **SIM Card Not Detected/Network Registration Failure:**
  - Reinsert the SIM card, ensuring it is properly seated.
  - Verify the SIM card is active and has sufficient credit/data.

- Check the GSM antenna connection.
- Ensure you are in an area with network coverage.

- **GPS Signal Not Acquired:**
  - Ensure the GPS antenna is connected and placed in an open area with a clear view of the sky.
  - Verify GPS functionality is enabled via AT commands.

If problems persist, consult the detailed SIM808/SIM868 documentation or contact your vendor for support.

7. Specifications

Table 1: SIM808/SIM868 Module Specifications

Feature	Specification
Voltage Range	DC 5 - 18V
Lithium Battery Interface Voltage	3.4 - 4.4V
Operating Temperature	-40°C to 85°C
Storage Temperature	-45°C to 90°C
Module Size	55 x 43 x 4 mm (2.2 x 1.7 x 0.2 inches)
GSM/GPRS Characteristics	
Bands	GSM 850, EGSM 900, DCS 1800, PCS 1900
Transmit Power (GSM 850/EGSM 900)	Class 4 (2W)
Transmit Power (DCS 1800/PCS 1900)	Class 1 (1W)
GPRS Downlink Data Transmission	Max. 85.6kbps
GPRS Uplink Data Transmission	Max. 85.6kbps
SIM Card Interface	
Supported SIM Card Voltage	1.8V, 3V
Supported Mobile Networks	2G/3G/4G Mobile Unicom card
Serial Port	
Baud Rate	1200-115200 bps (auto recognition)
GPS Characteristics	
Horizontal Accuracy	<2.5m
Speed Accuracy (DGPS)	0.05m/s
Acceleration Accuracy (DGPS)	0.05m/s²
Timing Accuracy	10ns
Power Consumption (Acquisition)	42mA (3.8V at -130dBm, GSM IDLE)

Feature	Specification
Other Characteristics	
Control Interface	Integrated AT Command Control
Bluetooth Compliance	Specification 3.0+EDR
Bluetooth Output Power	10dBm (Integrated PA)
Bluetooth ACL Link Support	Max. 4 way

8. Warranty and Support

This product is manufactured by Generic. For specific warranty terms, technical support, or service inquiries, please refer to the documentation provided at the time of purchase or contact your vendor directly. Keep your purchase receipt as proof of purchase.