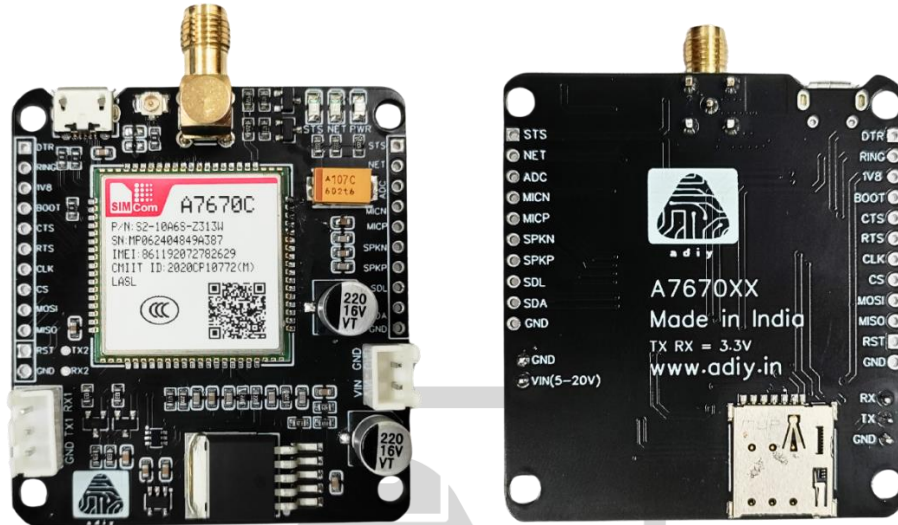




# ADIY GSM A7670C 4G LTE LM39302 Development Board V1.1 User Guide



## Description:

The ADIY SIM A7670xx 4G LTE Development Board is a Cat-1 Module which supports wireless communication modes of LTE-TDD/LTE-FDD. It supports a maximum 10Mbps downlink rate and 5Mbps uplink rate. This board features a serial interface and is based on the SIMCOM A7670xx LTE modem. The serial interface allows for simple communication with a computer or laptop via a USB to Serial adapter or TTL converter. AT instructions are used to communicate with the A7670xx.

This ADIY SIM A7670xx 4G LTE Development Board has onboard UART Logic Level Conversion, and Vdd needs to be connected to host reference voltage. It has a UFL connector, which allows connection of any antenna with this board. Apart from this, the module is very compact in size. It can be easily embedded in any customized PCB and it can also be mounted using screws.

This module has sleep mode power consumption of <math><10\text{mA}</math>, allowing the board to be powered by a small Li-ion Battery. LM39302R is used to step down the input voltage, which effectively allows input voltage as low as 5V.

The SIM A7670xx 4G LTE Development Board supports multiple built-in network protocols like HTTP, HTTPS, FTP, FTPS etc., supports drivers for main operation systems (USB driver for Windows, Linux and Android etc.) and software function, AT commands are compatible with SIM7500/SIM7600 series modules.

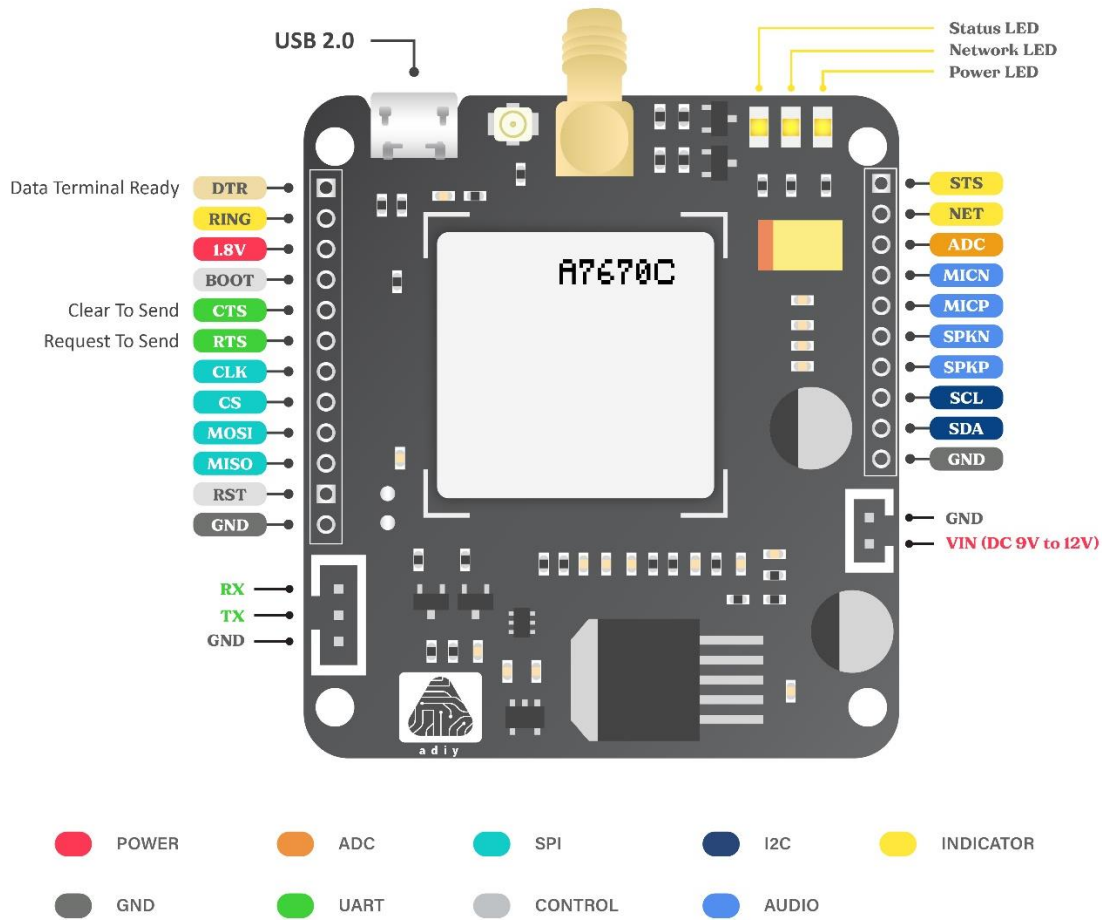
## Hardware Interface Overview:

- Power Supply
- USB 2.0 Interface
- UART Interface Serial port
- SIM Interface
- ADC Interface
- Analog audio MIC input interface
- Analog audio SPK output interface
- LDO Power Output
- I2C Interface
- Antenna Interface
- USB\_BOOT interface
- Network status indication interface
- Module operation status indication interface

## Features:

1. Suitable for LTE networks
2. Supports LTE-FDD and LTE-TDD frequency bands.
3. Control via AT commands.
4. Nano SIM Card Holder.
5. Power LED and Network Status LED
6. Supported Band: LTE-FDD B1/B3/B5/B8, LTE-TDD B34/B38/B39/B40/B41
7. On board pins for RING, NETLIGHT, STATUS, DTR (DTE ready) and Reset
8. On-board pins for Speaker and Microphone
9. Ultra-low sleep mode current consumption: <10mA
10. Powerful TCP/IP protocol stack for internet data transfer.
11. Supports maximum 10Mbps downlink rate and 5Mbps uplink rate.
12. Abundant software functions: FOTA, LBS, SSL
13. U.FL male connector for external antenna
14. On board UART logic level conversion

## Pin Description:



## ADIY SIM A7670xx 4G LTE Development Board pinouts:

1. V\_IN: Input voltage DC 9V to 12V
2. GND
3. I2C pins SCL is the clock line. It is used to synchronize all data transfers over the I2C bus. SDA is the data line. The SCL & SDA lines are connected to all devices on the I2C bus.
4. On-board pins Speaker and Microphone for audio or video connection.
5. ADC pin can be used to read the voltage of the ADC pin (AT+CADC)
6. NET pin indicates the network status using LED
7. STATUS pin indicates A7670xx module status i.e. ON and OFF condition

8. DTR Data terminal ready, another form of hardware flow control
9. RTS (Request to Send) and CTS (Clear to Send). These two lines allow the receiver and the transmitter to alert each other to their state.
10. USB connected to Firmware updated.
11. Serial Peripheral Interface (SPI) is an interface bus commonly used to send data between microcontrollers and small peripherals such as shift registers, sensors, and SD cards. It uses separate clock and data lines, along with a select line to choose the device you wish to talk to.
12. RST will trigger a Power-on Reset (POR) which is effectively the same reset as a power cycle.
13. UART: The UART interface consists of two pins: the Rx and Tx pin. The Rx pin is used to receive data. The Tx pin is used to transmit data. When two devices are connected using a UART, the Rx pin of one device is connected to the Tx pin of the second device. The Tx pin of one device is connected to the Rx pin of the second device.

## How to check the board:

**Step 1:** Before supplying power, carefully inspect the board's pinouts and component labels. Ensure the SIM card is inserted correctly, and the antenna connections are secure.

**Step 2:** Provide a 5-12V / 2A power supply to the module. This should automatically power on the module.

**Step 3:** Check the network LED. If LED is ON, the network is available. For more detailed information, refer to the AT commands manual.

**Step 4:** Connect the board to your computer using a jumper wire / JST connector. ADIY A7670C LM39302 TTL User Guide

**Step 5:** Check if you have already installed Drivers of your USB to UART converter (ex CP2102) on your computer.

**Step 6:** Then open the device manager in your computer to check the COM port for that driver.

**Step 7:** Connect the same COM port in QCOM tool/ Arduino IDE software and start sending AT commands.

The following are the parameters you need to maintain:

### COM Port:

- Baud rate: 115200,
- Stop bit: 1
- Parity: None
- Byte Size: 8
- Flow control: No ctrl flow

Above were used in QCOM tool software, also baud rate and flow control remain same in any serial monitor.

### Applications:

1. IOT applications
2. Telematics
3. Surveillance Devices
4. POS, Industrial Routers
5. Remote Diagnostics
6. Power station monitoring and control.
7. AMR (automatic meter reading).
8. Weather station data transmission.
9. Traffic signals monitor and control.
10. Water, gas and oil flow metering.
11. Parking meter and Taxi Monitor. Telecom equipment supervision (Mobile base station, microwave or optical relay station).

