

SIM7000E Arduino NB-IoT/LTE/GPRS/GPS Expansion Shield

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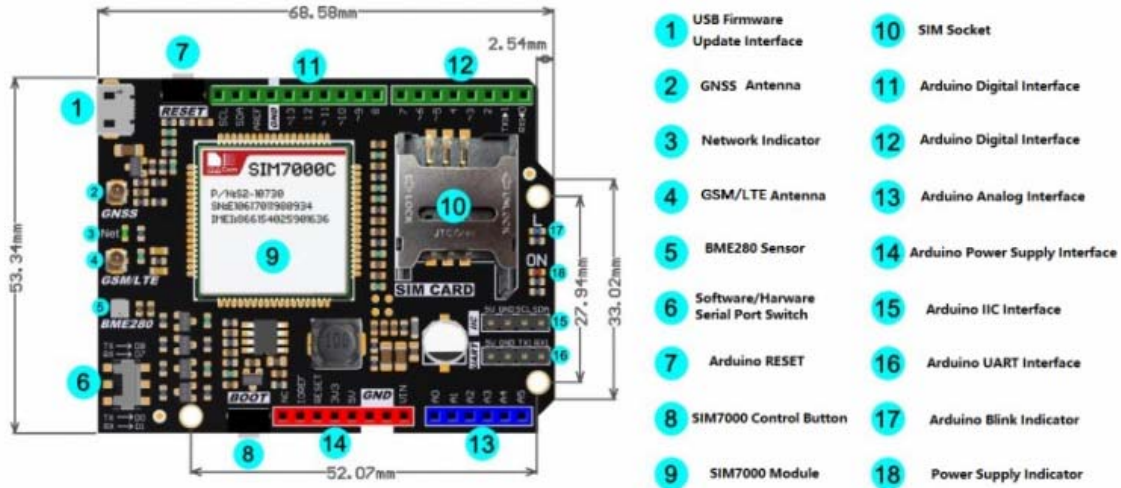
INTRODUCTION

NB-IoT (Narrow Band-Internet of Things) technology is a new IoT technical branch and supports cellular data network connection of low power consumption device in WAN (Wide Area Network), which also called as LPWAN. NB-IoT operates in authorized frequency spectrum. It can be directly deployed to GSM, UMTS, LTE without any interference of current networks, while the bandwidth consumption is just about 180KHz.

This SIM7000E Arduino NB-IoT/LTE/GPRS expansion shield is a wireless communication module produced by DFRobot and the design is based on SIMCom SIM7000E. This wireless communication module is designed for Arduino controllers, supporting multi-frequency LTE-FDD communication, dual-frequency GPRS/EDGE communication, NB-IoT communication. No matter prototype developments or small-batch productions, SIM7000C Arduino NB-IoT/LTE/GPRS expansion shield is the best solution to applications of low power consumption, low latency and meddle-throughput. Besides onboard GNSS (Global Navigation Satellite System), SIM7000E supports American GPS, Russian GLONASS, European Galileo, Japanese QZSS and Chinese BeiDou Navigation Satellite System. It can be widely applied to IoT applications such as long-distance control, moving tracking, long distance data uploading and shared bikes.

SIM7000 Series Frequency Table

Function	SIM7000C	SIM7000E	SIM7000A
Quad-Band FDD-LTE	B1/B3/B5/B8	B3/B8/B20/B28	B2/B4/B12/B13
Output power	GSM900:2W DCS1800:1W	GSM900:2W DCS1800:1W	GSM900:2W DCS1800:1W
Supply voltage range	3.0V~4.3V	3.0V~4.3V	3.0V~4.3V
GNSS	GPS/GLONASS/BeiDou/Compass Galileo,QZSS	GPS/GLONASS/BeiDou/Compass Galileo,QZSS	GPS/GLONASS/BeiDou/Compass Galileo,QZSS
LTE CAT-M1(eMTC)	375kbps(up),300kbps(down)	375kbps(up),300kbps(down)	375kbps(up),300kbps(down)
NB-IOT	66kbps(up),34kbps(down)	66kbps(up),34kbps(down)	Not Support
EDGE Class	236.8kbps(up),236.8kbps(down)	236.8kbps(up),236.8kbps(down)	236.8kbps(up),236.8kbps(down)
GPRS	85.6kbps(up),85.6kbps(down)	85.6kbps(up),85.6kbps(down)	85.6kbps(up),85.6kbps(down)
Power off	7uA	7uA	7uA
PSM	9uA	9uA	9uA
Idle	11uA	11uA	11uA



SIM7000 Arduino NB-IoT/LTE/GPRS/GPS Expansion Shield

The SIM7000E Arduino NB-IoT/LTE/GPRS expansion shield supports both SIM card and NB-IoT card synchronously. You can plug in a common SIM card to achieve traditional GSM applications, such as make a phone call and send message. You can also plug in a NB-IoT card to realize NB-IoT data transmission. Besides, this expansion shield provides a BME280 environmental sensor. So it could be a prototype to develop NB-IoT projects, monitoring temperature, humidity and pressure.

NOTE:

SIM7000E is common used with European frequency band ; SIM7000C is common used with Chinese frequency band, please carefully check your Mobile Operator statement, and select the corresponding products.

FEATURES

Operating Voltage: 5V (NOTE: The module will consume great amount of current immediately when connected to the network. So the external power supply is needed at work.)

Input Voltage: 7~12VDC (VIN range: 6~20V)

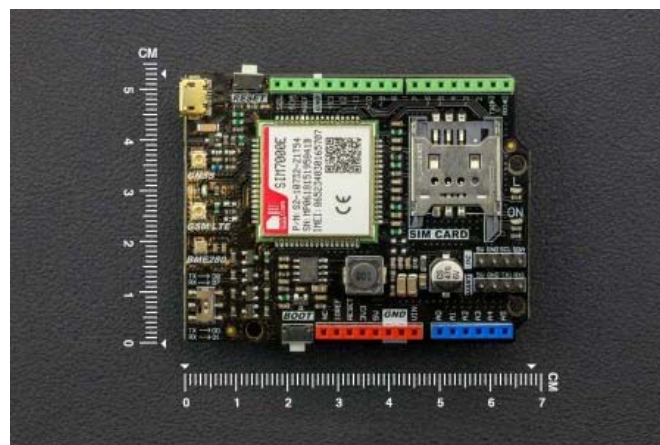
Communication Module: SIM7000

- Single-Band TDD-LTE B39
- Quad-Band FDD-LTE B1/B3/B5/B8 (SIM7000C)
- Quad-Band FDD-LTE B3/B8/B20/B28 (SIM7000E)
- GPRS/EDGE 900/1800 MHz

- Output power
 - GSM900: 2W
 - DCS1800: 1W
 - Control Via AT Commands
 - Operation temperature: -40°C to +85°C
 - GNSS (GPS, GLONASS, BeiDou, Compass, Galileo, QZSS)
 - Firmware update via USB 2.0 Support SIM card and NB-IoT card (NOTE: Please ensure the SIM frequency range been used is included in the frequency range it supports).
- BME280 Environmental Sensor
- Temperature Measuring Range: -40°C~+85°C, resolution of 0.1°C, deviation of ±0.5°C
 - Humidity Measuring Range: 0~100%RH, resolution of 0.1%RH, deviation of ±2%RH
 - Pressure Measuring Range: 300~1100hPa
 - Humidity Sampling Time: 1s
 - Operating Temperature : -30°C~+85°C
 - Dimension: 2.1 x 2.7inch /53.4 x 68.6mm

SHIPPING LIST

- SIM7000E Arduino NB-IoT/LTE/GPRS expansion shield x1
- GSM Spring Antenna x1
- GPS Internal Antenna x1



<https://www.dfrobot.com/product-1732.html> 7-18-18