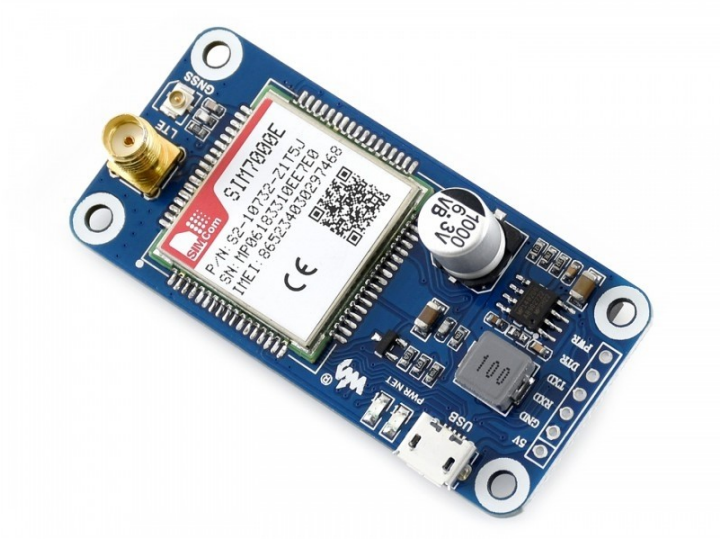
Datenblatt

NB-IoT / eMTC / EDGE / GPRS / GNSS HAT für Raspberry Pi, EU Version



Artikel-Nr.:	RPI-SIM7000E
Hersteller:	Waveshare
EAN:	614961952218
Herkunftsland:	China
Zolltarifnummer:	85176200
Gewicht:	0.132 kg

Overview
This Raspberry Pi HAT features multi communication functionalities: NB-IoT, eMTC, EDGE, GPRS, and GNSS.

The NB-IoT (NarrowBand-Internet of Things) and eMTC (enhanced Machine Type Communication) are rising IoT communication technologies evolved from LTE (4G), with advantages include low power, low cost, wide coverage, etc. They are suited for applications such as intelligent instruments, remote controlling, asset tracking, remote monitoring, E-health, mobile POS terminals, sharing bikes, and so on. While the GSM/GPRS, and EDGE are traditional 2G/2.5G technologies capable of sending SMS or making other wireless communications.

Therefore, the SIM7000E NB-IoT HAT would be an ideal choice for either evaluating new rising technologies, or simply communicating/positioning via multiple ways.

Features

- Raspberry Pi connectivity, compatible with Raspberry Pi Zero/Zero W/Zero WH/2B/3B/3B+
- Supports TCP, UDP, PPP, HTTP, FTP, MQTT, SMS, Mail, etc.
- Supports GNSS positioning (GPS,GLONASS,BeiDou and Galileo)
- Onboard USB interface, to test AT Commands, get GPS positioning data, and so on
- Breakout UART control pins, to connect with host boards like Arduino/STM32
- Onboard voltage translator, 3.3V by default, allows to be switched to 5V via 0Ω resistor
- SIM card slot, compatible with both normal SIM card and NB-IoT specific card
- 2x LED indicators, easy to monitor the working status
- Baudrate: 300bps~3686400bps
- Control via AT commands (3GPP TS 27.007, 27.005, and SIMCOM enhanced AT Commands)
- Supports SIM application toolkit: SAT Class 3, GSM 11.14 Release 98, USAT
- Comes with development resources and manual (examples for Raspberry Pi/Arduino/STM32)

Communications Specifications

	NB-IoT	eMTC	EDGE	GSM/GPRS
Band	SIM7000E: FDD-LTE B3/B8/B20/B28 SIM7000C: FDD-LTE B1/B3/B5/B8		GPRS/EDGE 900/1800 MHz	
Power saving	Current in sleep mode: 1.2mA (@DRX=2.56s).		Current in PSM mode: 9uA.	
Emitting power	Class 3 (0.25W@LTE)		Class E2 (0.5W@EGSM900) Class E1 (0.4W@DCS1800)	Class 4 (2W@GSM900) Class 1 (1W@DCS1800)
Data Speed	Uplink≤66kbps Downlink≤34kbps	Uplink≤375kbps Downlink≤300kbps	Uplink≤236.8kbps Downlink≤236.8kbps	Uplink≤85.6kbps Downlink≤85.6kbps
SIM Card	NB Specific (Not Included)	Normal SIM (Not Included)		

GNSS Specifications

- Receiver type
  - 16-channel
  - C/A code
- Sensitivity
  - Tracking: -162 dBm (GPS)/-157 dBm (GLONASS)/TBD (BD)
  - Cold starts: -148 dBm
- Time-To-First-Fix
  - Cold starts: <35s
  - Hot starts: <1s
- Accuracy
  - Position: <2.5m CEP

Other Specifications

- Power supply: 5V
- Operating voltage: 5V/3.3V (3.3V by default)
- Sleep Mode current: 1.2mA(@DRX=2.56s)
- Power Save Mode current: 9uA
- Operating temperature: -40°C ~ 85°C
- Storage temperature: -45°C ~ 90°C
- Dimension: 30.2mm x 65mm

Package Content

- SIM7000E NB-IoT HAT x1
- GSM Antenna x1
- GPS External Antenna (B) x1
- USB type A plug to micro plug cable x1
- RPi screws pack (2pcs) x1

Development Resources

- https://www.waveshare.com/wiki/SIM7000E_NB-IoT_HAT

Weitere Bilder:





SIM7000X NB-IoT HAT




GPS ANTENNA