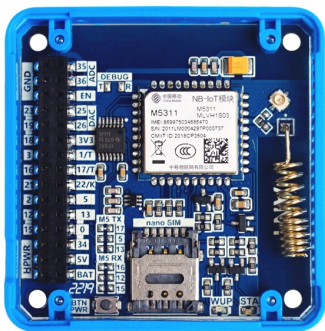
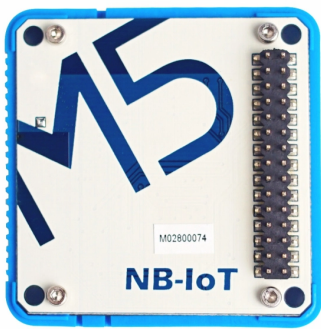
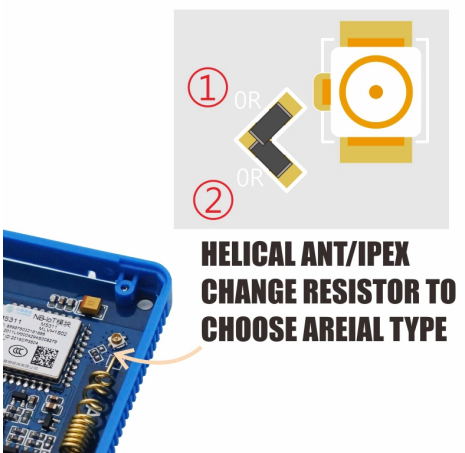
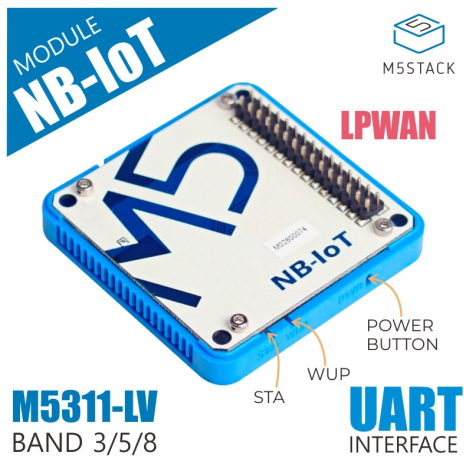


Module NBIoT

SKU:M028



Description

Module NBloT is an NB-IoT communication module in the M5Stack stackable module series. It integrates a high-performance NB-IoT full-network wireless communication module **M5311**. The low-power design helps customers achieve longer terminal life. The M5311 provides rich external interfaces and protocol stacks, supports external sensor devices, and offers great convenience for user product development. It also supports the OneNET cloud platform protocol, enabling seamless integration and rapid development. This module is particularly suitable for IoT industries such as smart metering, smart wearables, smart parking, and municipal management, where ultra-low power consumption and ultra-small size are core requirements.

| Features

- SIM Card Type: Nano
- Status Signals: Two LED indicators
- Single Power Button
- Onboard Antenna Option: Default onboard spring antenna (or switch to IPEX connector via jumper)
- Serial Communication: Uart2 16/17
- Operating Temperature Range: -40°C to +85°C
- NB-IoT: Supports LTE Cat NB2*
- Frequency Bands:
 - B3/B5/B8
- Data Transmission:
 - LTE Cat NB1 Rate (kbps):
 - Single Tone 15.625 (UL) / 21.25 (DL)
 - Multi Tone 62.5 (UL) / 21.25 (DL)
 - SMS: Supports PDU/TEXT mode
 - Network Protocols: IPv4/IPv6/UDP/TCP/CoAP/LwM2M/HTTP/MQTT/TLS
- Electrical Characteristics:
 - Current Consumption:
 - 3uA @ PSM
 - 0.4mA @ Idle mode (DRx=1.28S)
 - 167mA @ Tx (23dBm/15kHzST)
 - 54mA @ Rx
 - Output Power: 23dBm ± 2dB
 - Sensitivity:
 - -114dBm (without retransmission)
 - -130dBm (with retransmission)

| Includes

- 1 x Module NBloT

| Applications

- Smart Metering
- Smart Parking
- Municipal Management

Specifications

Specification	Parameter
Net Weight	13g
Gross Weight	24g
Product Size	54.2 x 54.2 x 2.8mm
Package Size	60 x 57 x 17mm

Learn

Frequency Bands for Some Country Operators

The following information is for reference only and may not be real-time.

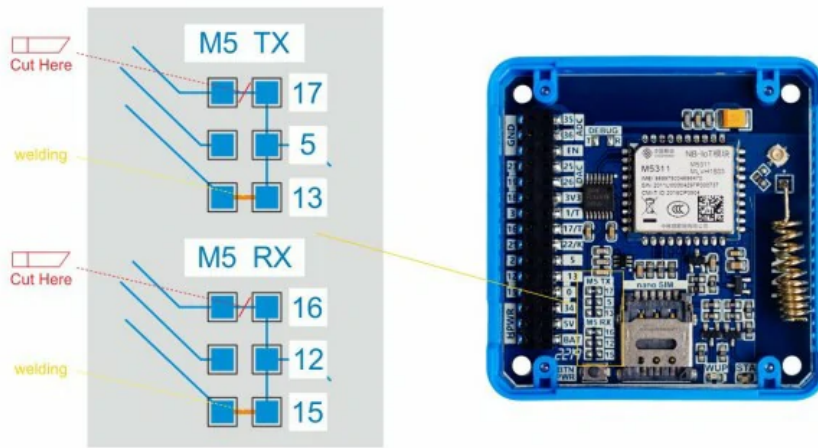
North America	B4 (1700), B12 (700), B66 (1700), B71 (600), B26 (850)
Asia Pacific	B1(2100), B3(1800), B5(850), B8(900), B18(850), B20(800), B26(850),B28(700)
Europe:	B3 (1800), B8 (900), B20 (800)
Latin America	B2(1900), B3(1800), B5(850), B28(700)
Commonwealth of Independent States	B3 (1800), B8 (900), B20 (800)
Sub-Saharan Africa	B3(1800), B8(900)
Middle East, North Africa	B8(900), B20(800)

Additional Notes:

- GPIO2 held high for 2s to power on
- GPIO2 held high for 8s to power off
- Power button held for 2s to power on
- Power button held for 8s to power off
- GPIO26 high to reset the module

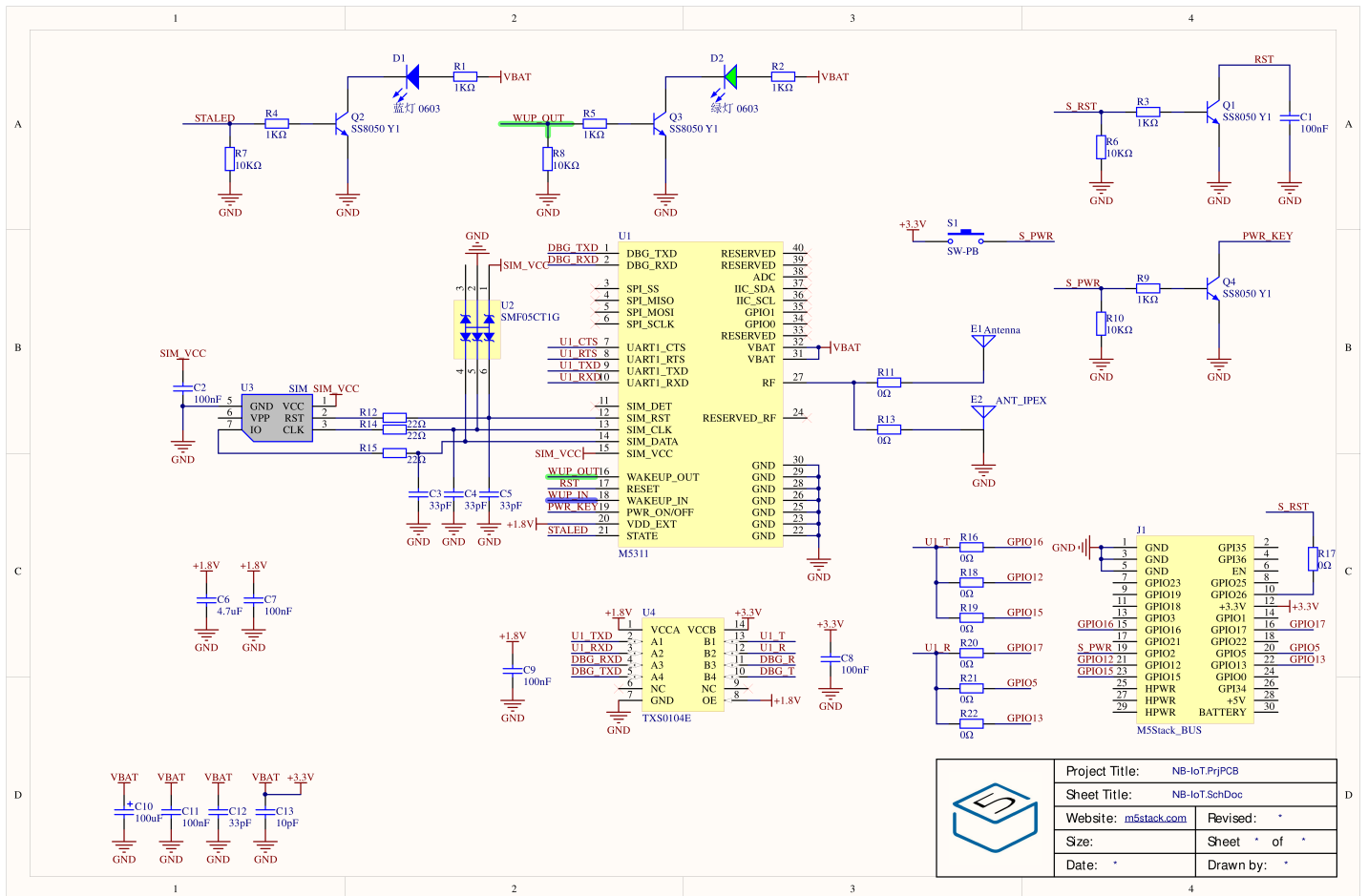
Compatibility

When used with the Fire main control, due to PSRAM pin (G16/G17) conflict, a jumper wire is needed to connect to another set of UART pins.



Schematics

NB-IoT Plus Module



PinMap

M5-Bus

Fly Wire

The pins marked **FW** on the M5-Bus below can be switched via fly wires to adapt to different main control devices.

PIN	LEFT	RIGHT	PIN
GND	1	2	
GND	3	4	
GND	5	6	
	7	8	
	9	10	RST
	11	12	3V3
	13	14	
TXD (FW)	15	16	RXD (FW)
	17	18	
PWR	19	20	RXD (FW)
TXD (FW)	21	22	RXD (FW)
TXD (FW)	23	24	
	25	26	
	27	28	
	29	30	

Datasheets

- [M5311](#)

Softwares

Arduino

- [Module NBIoT Example with M5Core.](#)

Protocol

- [M5311 AT Command Table](#)

Easyloader

Easyloader	Download Link	Notes
Module NBloT Example Easyloader with M5Core	download	/