

# Quectel BC65

## Compact NB-IoT Module with Bluetooth 4.2 (BLE)



BC65 is high-performance multi-band NB-IoT module with extremely low power consumption. The ultra-compact 17.7mm × 15.8mm × 2.2mm profile makes it a perfect choice for size sensitive applications. Designed to be compatible with Quectel GSM/GPRS M66 , NB-IoT BC66 and BC68 modules in the compact and unified form factor, BC65 provides a flexible and scalable platform for migrating from GSM/GPRS to NB-IoT network.

BC65 supports Bluetooth 4.2 BLE (Bluetooth Low Energy, partial protocol supported) technology, which features ultra-low peak, average and idle mode power consumption, making it, thus, especially ideal for applications requiring energy-efficient Bluetooth wireless connectivity. Also it provides abundant external interfaces and protocol stacks, as well specialized PSM\_ENIT for easy module wake-up via external interrupt.

Adopting surface mounted technology, BC65 is an ideal solution for durable and rugged designs. The low profile and small size of LCC package allow the module to be easily embedded into space-constrained applications and provide reliable connectivity with applications.

Due to compact form factor, ultra-low power consumption and extended temperature range, BC65 is a best choice for a wide range of IoT applications, ranging from smart metering, bike sharing, smart wearables, smart parking, smart city, security and asset tracking to home appliances, agricultural and environmental monitoring, etc. Additionally, it is able to provide a complete range of SMS and data transmission services to meet client-side demands.



### Key Benefits

- ✓ Compact NB-IoT module with Bluetooth 4.2 (BLE) features\* (partial protocol supported)
- ✓ Power saving design ensures ultra-low power consumption
- ✓ Specialized PSM\_ENIT for easy module wake-up via external interrupt
- ✓ Build-in eSIM reserved
- ✓ Multi-band and rich external interfaces ensuring convenient application
- ✓ Compatible with Quectel NB-IoT/GSM/GPRS modules, easy for future upgrading and migration
- ✓ Embedded with abundant Internet service protocols
- ✓ Built-in ADC temperature detection\*



Compact Size



Multi Frequency Bands



Extended Temperature Range: -25°C ~ +75°C



LCC Package



Multiple Serial Ports



Ultra-low Power Consumption



Quectel Enhanced AT Commands



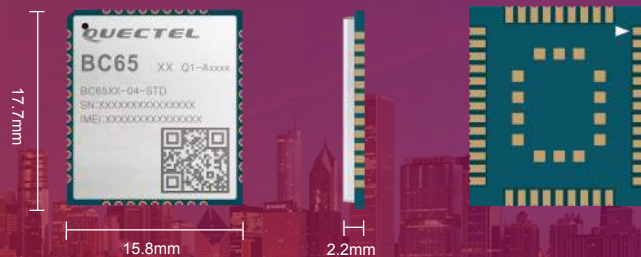
Embedded Internet Services Protocols



Bluetooth 4.2\*

# Quectel BC65

## Compact NB-IoT Module with Bluetooth 4.2 (BLE)



### Frequency Bands

B3 @H-FDD: 1800MHz  
B8 @H-FDD: 900MHz  
B5 @H-FDD: 850MHz  
B20 @H-FDD: 800MHz  
B28 @H-FDD: 700MHz

### Data

**Data Transmission:**

**Single-Tone:**

Max 25kbps (DL)/15kbps (UL)

**Multi-Tone:**

Max 25.5kbps (DL)/66kbps (UL)

### SMS\*

Text/PDU Mode

### Electrical Specification

**Maximum Output Power:**

23dBm±2dB

**Sensitivity:**

-129dBm±1dB

**Power Consumption (Typ.):**

3.8µA @PSM

1.0mA @Idle Mode (DRX=2.56s)

### Interfaces

USIM ×1

PSM\_EINT ×1

UART ×3

ADC\* ×1

RESET ×1

PWRKEY ×1

RI\* ×1

NETLIGHT ×1

NB-IoT Antenna ×1

Bluetooth Antenna\* ×1

SPI ×1 (OpenCPU Version Only)

PWM ×1 (OpenCPU Version Only)

DCD ×1 (OpenCPU Version Only)

I2C ×2 (OpenCPU Version Only)

RTC ×1 (OpenCPU Version Only)

GPIO: Configurable (OpenCPU Version Only)

### Enhanced Features

OpenCPU\*

BT 4.2 (BLE)\* (Partial Protocol Supported)

Build-in eSIM Reserved <sup>1)</sup>

PSM\_ENIT for Module Wake-up

Built-in ADC Temperature Detection\*

### Software Features

**Protocol Stacks:**

UDP/TCP/LwM2M\*/SNTP/MQTT\*/CoAP\*/PPP\*/

TLS\*/DTLS\*/HTTP\*/HTTPS\*

**Firmware Download Methods:**

UART

DFOTA\*

### General Features

LCC Package

58 pins

**Supply Voltage Range:**

3.2V~4.2V, 3.8V Typ.

(GPIO Voltage Domain: 1.8V)

**Temperature Range:**

-25°C ~ +75°C

**Dimensions:**

17.7mm × 15.8mm × 2.2mm

**Weight:**

1.2g±0.2g

**AT Command:**

3GPP Rel-13/Rel-14\* and Quectel Enhanced AT Commands

### Approvals

**Regulatory:**

GCF\* (Global)

CE\* (Europe)

RCM\* (Australia)

**Others:**

RoHS Compliant

<sup>1)</sup> eSIM is not included by default

\* Under Development