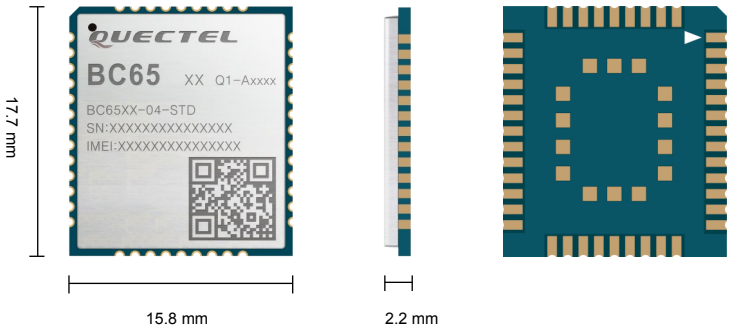
Quectel BC65

Compact NB-IoT Module with Ultra-low Power Consumption



BC65 is a high-performance multi-band NB-IoT module with extremely low power consumption. The ultra-compact 17.7 mm × 15.8 mm × 2.2 mm profile makes it a perfect choice for size sensitive applications. Designed to be compatible with Quectel GSM/GPRS M66, NB-IoT BC66, BC66-NA 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.

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 Features

- Power saving design ensures ultra-low power consumption
- Specialized PSM_EINT for easy module wake-up via external interrupt
- Build-in eSIM reserved
- Multi-band and rich external interfaces ensuring convenient application
- Compatible with Quectel GSM/GPRS M66, NB-IoT BC66, BC66-NA and BC68 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 to +75 °C

LCC

LCC Package

Multiple Serial Ports

Ultra-low Power Consumption

AT

Quectel Enhanced AT Commands

Embedded Internet Services Protocols

Version: 1.0.0 | Status: Preliminary

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Frequency Bands

B1* @ H-FDD: 2100 MHz

B3 @ H-FDD: 1800 MHz

B5 @ H-FDD: 850 MHz

B8 @ H-FDD: 900 MHz

B20 @ H-FDD: 800 MHz

B28 @ H-FDD: 700 MHz

Data

Data Transmission:

LTE Cat NB1:

Single-Tone:

DL: Max. 25.5 kbps

UL: Max. 16.7 kbps

Multi-Tone:

DL: Max. 25.5 kbps

UL: Max. 62.5 kbps

LTE Cat NB2:

DL: Max. 127 kbps

UL: Max. 158.5 kbps

SMS*

Text/PDU Mode

Electrical Specification

Maximum Output Power:

23 dBm ±2 dB

Sensitivity:

-129 dBm ±1 dB (with Repetitions)

Power Consumption (Typ.):

4.5 μA @ PSM

1.0 mA @ Idle Mode, DRX = 2.56 s

Interfaces

(U)SIM × 1

PSM_EINT × 1

UART × 3

ADC* × 1

RESET × 1

PWRKEY × 1

RI* × 1

NETLIGHT × 1

Antenna × 1

SPI* × 1 (for QuecOpen® Version Only)

DCD* × 1 (for QuecOpen® Version Only)

I2C* × 2 (for QuecOpen® Version Only)

GPIO*: Configurable (for QuecOpen® Version Only)

Enhanced Features

QuecOpen®*

Build-in eSIM Reserved ①

PSM_EINT for Module Wake-up

Built-in ADC Temperature Detection*

Software Features

Protocol Stacks:

UDP/TCP/LwM2M*/SNTP/FTP*/MQTT/CoAP*/

PPP/TLS*/DTLS*/HTTP*

Firmware Download Methods:

UART

DFOTA

General Features

LCC Package

58 pins

Supply Voltage Range:

3.2–4.2 V

Typical 3.8 V

(GPIO Voltage Domain: 1.8 V)

Temperature Range:

-25 °C to +75 °C

Dimensions:

17.7 mm × 15.8 mm × 2.2 mm

Weight:

1.2 ±0.2 g

AT Command:

3GPP Rel-13/Rel-14

Quectel Enhanced AT Commands

Approvals

Regulatory:

CE (Europe)

RCM (Australia & New Zealand)

Others:

RoHS Compliant

① eSIM is not included by default

* Under development

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