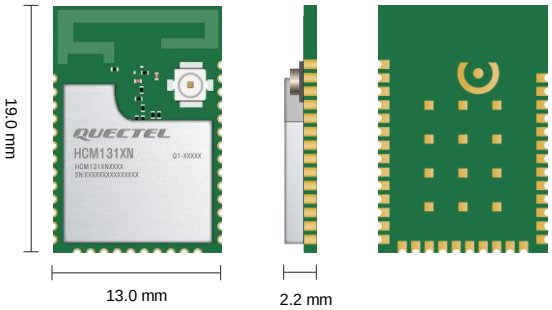
Quectel HCM131XN

BLE 6.0
Compact LCC Package



HCM131XN is a high-performance MCU module, supporting BLE 6.0 (Channel Sounding), Thread and Zigbee, launched by Quectel. The module boasts an ARM Cortex-M33 processor core and a RISC-V coprocessor with a frequency of up to 128 MHz. It features built-in 256 KB RAM and 1.5 MB flash, ensuring efficient performance.

HCM131XN is in an LCC form factor with an ultra-compact size of 19.0 mm × 13.0 mm × 2.2 mm, which optimizes the size and cost for end-products and is compatible with diverse designs.

HCM131XN can support up to 31 GPIOs, which can be multiplexed as various interfaces including I2S, UART, I2C, SPI and NFC. It also features a superior sensitivity of -96 dBm and a transmit power of up to +7 dBm, providing flexibility and versatility for a range of applications.

HCM131XN features ultra-low power consumption and is suitable for applications such as smart home, asset labels and beacons, portable medical devices, and battery-powered sensor products.

Key Features

- BLE 6.0 (Channel Sounding), Thread, Zigbee
- 256 KB RAM, 1.5 MB flash
- ARM Cortex-M33 processor and RISC-V coprocessor (up to 128 MHz)
- Supports up to 31 GPIOs, which can be multiplexed as various interfaces including I2S, UART, I2C, SPI and NFC
- Max. transmit power: +7 dBm
- Pin antenna interface, 1st generation RF coaxial connector, PCB antenna (optional)
- Operating temperature range: -40 °C to +105 °C



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BLE 6.0	HCM131XN
Bluetooth Protocol	BLE 6.0
Frequency Band	2.4 GHz
Modulation Mode	2(G)FSK with fully configurable pulse shaping, (G)MSK, OQPSK, DSSS
Encryption Mode	Arm TrustZone, Root of Trust, secure boot, secure storage, cryptographic engine, CRACEN, KMU, TAMPC, GLITCHDET, side-channel protection
Antenna	1st generation RF coaxial connector, pin antenna interface, PCB antenna (optional)
MCU Core	ARM Cortex-M33 and RISC-V coprocessor (up to 128 MHz)
RAM	256 KB
Flash	1.5 MB
Transmit Power (Max.)	+7 dBm
Dimensions	19.0 mm × 13.0 mm × 2.2 mm
Weight	TBD
Temperature Range	
Operating Temperature Range	-40 °C to +105 °C
Storage Temperature Range	-40 °C to +125 °C
Certifications	
Regulatory (Planning)	**Europe:** CE **America:** FCC **Canada:** IC **China:** SRRC **Australia/New Zealand:** RCM
Others (Planning)	RoHS, Bluetooth
Interfaces	
Antenna Interface	× 1 (1st generation RF coaxial connector, pin antenna interface, PCB antenna) (optional)
Other Interfaces①	31 GPIOs (I2S/UART/I2C/SPI/NFC, etc.)
Electrical Features	
Power Supply Voltage	VBAT: 1.7–3.6 V, typ. 3.3 V

Ordering Code	Flash	Transmit Power	Operating Temperature Range	Antenna	Development Board (Only for Debugging)
HCM131XNAAMD-1X-02*	1.5 MB	≤ 7 dBm	-40 °C to +105 °C	1st generation RF coaxial connector	HCM131XNAATB-1X-02*
HCM131XNAAMD-0L-02*	1.5 MB	≤ 7 dBm	-40 °C to +105 °C	Pin antenna interface	HCM131XNAATB-0L-02*
HCM131XNAAMD-0P-02*	1.5 MB	≤ 7 dBm	-40 °C to +105 °C	PCB antenna	HCM131XNAATB-0P-02*

NOTE:

1. ①: See hardware design manual for details of the module interfaces.
2. *: Under development.
3. TBD: To be determined.

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