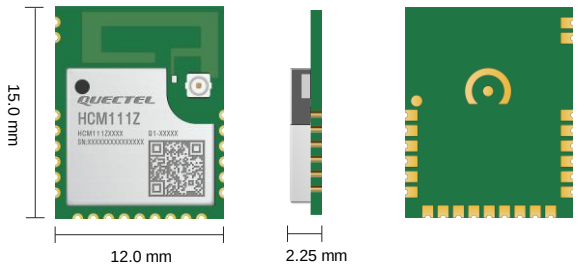
Quectel HCM111Z

BLE 5.3 Module
Compact LCC Package



HCM111Z is a high-performance MCU Bluetooth module launched by Quectel. It boasts a Cortex-M3 processor with a frequency of up to 48 MHz and supports BLE 5.3. The module features built-in 48 KB SRAM and 512 KB flash, ensuring efficient performance.

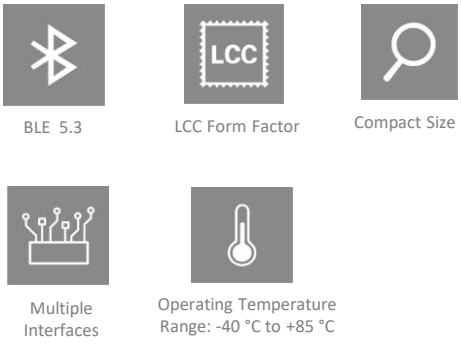
HCM111Z is in an LCC form factor with an ultra-compact size of 15.0 mm × 12.0 mm × 2.25 mm, which optimizes the size and cost for end-products and is compatible with diverse designs.

HCM111Z supports up to 13 GPIOs for UART, SWD, I2C, ADC, PWM and SPI functions in QuecOpen® solution, and Bluetooth low power mode, which provides flexibility and versatility for a range of applications, especially in smart homes and industrial IoT scenarios.

The built-in audio codec of HCM111Z is optional and enables microphone pickup and audio playback, which is suitable for smart devices such as smart voice remote controls, smart toy cars, sports health and home appliances. The multi-connection capability of the module supports dozens of devices to form a communication network, which can be applied in micro-inverters, energy storage, charging piles, etc. In addition, HCM111Z is also widely used in fields such as meters and sensors.

Key Features

- BLE 5.3
- 48 KB SRAM and 512 KB flash
- Built-in codec (Optional)
- Multi-link network
- Operating temperature range: -40 °C to +85 °C
- 4th generation RF coaxial connector, pin antenna interface, PCB antenna (Optional)
- 13 GPIOs for UART, SWD, I2C, ADC, PWM and SPI functions in QuecOpen® solution



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BLE 5.3	HCM111Z
Bluetooth Protocol	BLE 5.3
Encryption Mode	TRNG, AES128 ECB
Operating Mode	BLE (Bluetooth Low Energy)
Kernel	ARM Cortex-M3 (up to 48 MHz)
SRAM	48 KB
Flash	512 KB
Dimensions	15.0 mm × 12.0 mm × 2.25 mm
Weight	Approx. 0.62 g
Temperature Range	
Operating Temperature Range	-40 °C to +85 °C
Storage Temperature Range	-45 °C to +95 °C
Certifications	
Regulatory	**Europe:** CE **America:** FCC **Canada:** IC **China:** SRRC **South Korea:** KC **Australia/New Zealand:** RCM **Japan:** TELEC
Others	Bluetooth
Interfaces	
Antenna Interface	× 1 (4th generation RF coaxial connector, pin antenna interface, PCB antenna) (Optional)
Other Interfaces①	UART/ SWD/ I2C/ ADC/ PWM/ SPI, etc.
Electrical Features	
Power Supply Voltage	2.4–4.3 V, typ. 3.3 V
RF Performance	

		Receiver Sensitivity	Transmit Power
BLE	**1 Mbps**	-95 dBm ±2 dB	≤ 10 dBm

Ordering Code	Audio Codec	Flash	Operating Temperature Range	Antenna	Development Board & Antenna (Only for Debugging)
HCM111ZAAMD-0L	Supported	512 KB	-40 °C to +85 °C	Pin antenna interface	HCM111ZAATB-0P
HCM111ZAAMD-0P	Supported	512 KB	-40 °C to +85 °C	PCB antenna	
HCM111ZAAMD-4X	Supported	512 KB	-40 °C to +85 °C	4th generation RF coaxial connector	HCM111ZAATB-4X Antenna: YF0029CA
HCM111ZABMD-0P	-	512 KB	-40 °C to +85 °C	PCB antenna	HCM111ZABTB-0P
HCM111ZABMD-4X	-	512 KB	-40 °C to +85 °C	4th generation RF coaxial connector	
HCM111ZABMD-0L	-	512 KB	-40 °C to +85 °C	Pin antenna interface	

NOTE:

①: See hardware design manual for details of the module interfaces.

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