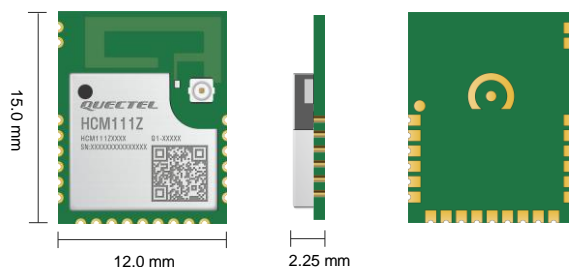


Quectel HCM111Z

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 I2S* 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
- ✓ RF coaxial connector, external antenna pin, PCB antenna (Optional)
- ✓ 13 GPIOs for UART, SWD, I2C, ADC, PWM and I2S* functions in QuecOpen® solution



BLE 5.3



LCC Form Factor



Compact Size



Multiple Interfaces



Operating Temperature Range: -40 °C to +85 °C

Quectel HCM111Z

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 Korea: KC Australia/New Zealand: RCM		
Other Certification	Bluetooth		
Interfaces			
Antenna Interface	× 1 (RF coaxial connector, external antenna pin, PCB antenna) (Optional)		
Other Interfaces ^①	UART/ SWD/ I2C/ ADC/ PWM/ I2S*, etc.		
Electrical Features			
Power Supply Voltage	2.0–4.3 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 (Only for Debugging)
HCM111ZAAMD-0L	Supported	512 KB	-40 °C to +85 °C	External pin antenna	-
HCM111ZAAMD-0P	Supported	512 KB	-40 °C to +85 °C	PCB antenna	HCM111ZAATB-0P
HCM111ZAAMD-4X	Supported	512 KB	-40 °C to +85 °C	RF coaxial connector	HCM111ZAATB-4X
HCM111ZABMD-0P	Not supported	512 KB	-40 °C ~ +85 °C	PCB antenna	HCM111ZABTB-0P

NOTE:

- ①: See hardware design manual for details of the module interfaces.
- *: Under development.