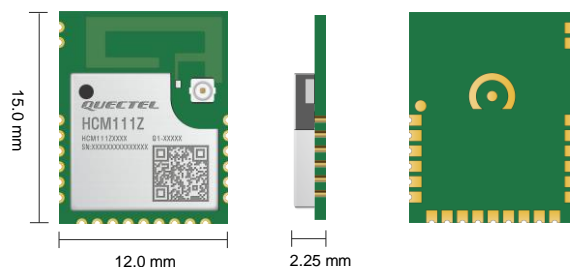


Quectel HCM111Z

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 with a maximum data rate up to 2 Mbps. The module features built-in 48 KB SRAM and 512 KB flash, ensuring efficient performance.

HCM111Z is in a 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, SPI, 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.

HCM111Z has a built-in Codec, which can realize microphone pickup and audio playback, and 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 scenarios where multiple devices such as large charging stations and micro inverters are connected. 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
- ✓ 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, SPI, 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/ SPI/ I2C/ ADC/ PWM/ I2S*, etc.			
Electrical Features				
Power Supply Voltage	1.8–4.3 V, Typ. 3.3 V			
RF Performance				
		Receiver Sensitivity	Transmit Power	
BLE	1 Mbps	-95 dBm ±2 dB	≤ 10 dBm	
	2 Mbps	-90 dBm ±2 dB	≤ 10 dBm	
Ordering Code				
Ordering Code	Flash	Operating Temperature Range	Antenna	Development Board (Only for Debugging)
HCM111ZAAMD-0L	512 KB	-40 °C to +85 °C	External pin antenna	-
HCM111ZAAMD-0P	512 KB	-40 °C to +85 °C	PCB antenna	HCM111ZAATB-0P
HCM111ZAAMD-4X	512 KB	-40 °C to +85 °C	RF coaxial connector	HCM111ZAATB-4X

NOTE:

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