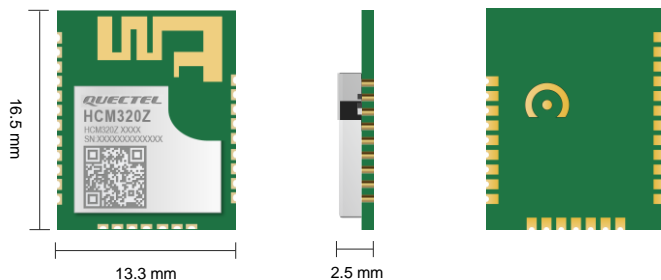




Quectel HCM320Z

Bluetooth 5.3 Module Compact LCC Package



HCM320Z is a cost-effective dual-mode Bluetooth module launched by Quectel, featuring Bluetooth 5.3 protocol compliance. It boasts an ARM Cortex-M3 processor with a frequency of up to 48 MHz. The module features built-in 64 KB RAM and 1 MB flash, ensuring efficient performance.

HCM320Z is in an LCC form factor with a compact size of 16.5 mm × 13.3 mm × 2.5 mm, which optimizes the size and cost for end-products. It supports three optional antenna solutions: PCB antenna, 4th generation RF coaxial connector and pin antenna interface, and is compatible with diverse designs.

HCM320Z integrates dual-mode Bluetooth (BLE and Classic Bluetooth) technology, supporting AT command-based communication interfaces. It offers flexible connectivity options through UART or USB HCI controller interfaces and enables secondary development via the QuecOpen[®] solution.

HCM320Z supports multiple data rate modes, including 1 Mbps/ 2 Mbps/ 3 Mbps in BR/EDR mode and 1 Mbps/ 2 Mbps in LE mode.



Key Features

- ✓ Bluetooth 5.3, BR/ EDR/ LE modes
- ✓ GATT/ HID/ SPP protocols
- ✓ 22 GPIOs which can be multiplexed for various interfaces including UART, SPI, I2C, ADC, PWM and USB in QuecOpen[®] solution
- ✓ PCB antenna, 4th generation RF coaxial connector and pin antenna interface (optional)
- ✓ Operating temperature range: -40 °C to +85 °C
- ✓ Support multi-role BLE operation with concurrent master and slave connections
- ✓ Enable multiple device whitelists for secure access management



Dual-mode
Bluetooth 5.3



Large Memory



Multiple
Interfaces



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



Compact Size



LCC

Quectel HCM320Z

Bluetooth 5.3		HCM320Z		
Bluetooth Protocol	Bluetooth 5.3			
Security Features	TRNG, AES128			
Operating Mode	BR/ EDR/ LE			
Kernel	ARM Cortex-M3 (up to 48 MHz)			
SRAM	64 KB			
Flash	1 MB			
Dimensions	16.5 mm × 13.3 mm × 2.5 mm			
Weight	Approx. 0.75 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 Australia/New Zealand: RCM			
Others	Bluetooth			
Interfaces				
Bluetooth Antenna	× 1 (PCB antenna, 4 th RF coaxial connector, pin antenna interface) (optional)			
Peripheral Interfaces ^①	22 GPIOs (Multiplexed for various interfaces including UART, SPI, I2C, ADC, PWM and USB)			
Electrical Features				
Power Supply Voltage	VBAT: 2.1–3.6 V, Typ. 3.3 V			
RF Performance				
		Receiver Sensitivity	Transmit Power	
BLE	1 Mbps	-95 dBm ±3 dB	8 dBm ±3 dB	
	2 Mbps	-92 dBm ±3 dB	8 dBm ±3 dB	
BR	1 Mbps	-90 dBm ±3 dB	4 dBm ±3 dB	
EDR	3 Mbps	-85 dBm ±3 dB	1 dBm ±3 dB	
Ordering Code				
Ordering Code	Flash	Operating Temperature Range	Antenna	Development Board (Only for Debugging)
HCM320ZAAMD-0L-01	1 MB	-40 °C to +85 °C	Pin antenna interface	HCM320ZAATB-0L
HCM320ZAAMD-0P-01	1 MB	-40 °C to +85 °C	PCB antenna	HCM320ZAATB-0P
HCM320ZAAMD-4X-01	1 MB	-40 °C to +85 °C	4 th generation RF coaxial connector	HCM320ZAATB-4X

NOTE:

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