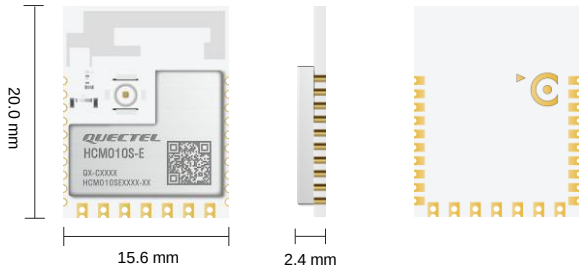
Quectel HCM010S-E

BLE 5.4 Module
Compact LCC and DIP Package



HCM010S-E is a high-performance MCU Bluetooth module launched by Quectel. It boasts a ARM Cortex-M33 processor with a frequency of up to 80 MHz, and supports BLE 5.4 and BLE mesh. The module features built-in 64 KB SRAM and 768 KB flash, ensuring efficient performance.

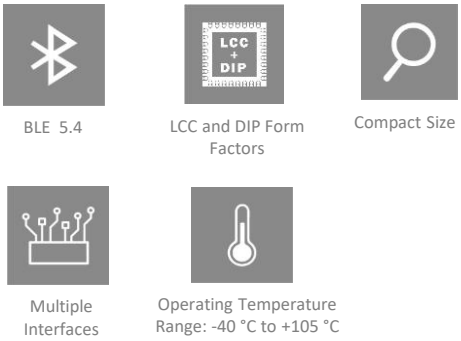
HCM010S-E is in LCC and DIP form factors with an ultra-compact dimensions of 20.0 mm × 15.6 mm × 2.4 mm, which optimizes the size and cost for end-products, and the module offers three optional antenna designs to meet the diverse design requirements: RF coaxial connector, pin antenna interface and PCB antenna.

HCM010S-E supports 1 USART, 1 SWD and 14 GPIO interfaces by default and I2C, ACMP and ADC in open solution①, features an superior sensitivity of -103 dBm and transmit power of up to +20 dBm and Bluetooth low power mode, which provide flexibility and versatility for a range of applications.

HCM010S-E supports BLE mesh networking, increasing network scalability and node counts with mesh topology, which is suitable for BLE devices that enables many-to-many communications, such as smart lighting, smart buildings and home smart wireless networks. And the module offers an enhanced security option, Secure Vault, featuring a higher level of IoT security.

Key Features

- BLE 5.4
- 64 KB SRAM, 768 KB flash
- BLE mesh networking
- 1 USART, 1 SWD and 14 GPIO interfaces by default, and I2C, ACMP and ADC interfaces via pins multiplexing
- Operating temperature range: -40 °C to +105 °C
- RF coaxial connector, pin antenna interface, PCB antenna (Optional)



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Quectel HCM010S-E

BLE 5.4	HCM010S-E
Bluetooth Protocol	BLE 5.4
Encryption Mode	AES128/256, SHA-1, SHA-2 (up to 256 bits), ECC (up to 256 bits), ECDSA (up to 256 bits), ECDH, J-Pake, TRNG, secure boot
Operating Mode	BLE (Bluetooth Low Energy)
Kernel	ARM Cortex-M33 (up to 80 MHz)
SRAM	64 KB
Flash	768 KB
Dimensions	20.0 mm × 15.6 mm × 2.4 mm
Weight	Approx. 0.98 g
Temperature Range	
Operating Temperature Range	-40 °C to +105 °C
Storage Temperature Range	-45 °C to +115 °C
Certifications	
Regulatory	**Europe:** CE* **America:** FCC* **Canada:** IC* **Australia/New Zealand:** RCM* **China:** SRRC
Others	Bluetooth
Interfaces	
Antenna Interface	× 1 (RF coaxial connector, PCB antenna, pin antenna interface) (Optional)
Peripheral Interfaces②	USART/ SWD/ I2C/ ACMP/ ADC, etc.
Electrical Features	
Power Supply Voltage	1.71–3.8 V, Typ. 3.3 V
RF Performance	

		Receiver Sensitivity	Transmit Power
BLE	**1 Mbps**	-96 dBm ±2 dB	≤ 20 dBm
	2 Mbps	-93 dBm ±2 dB	≤ 20 dBm
	BLE (125 kbps)	-103 dBm ±2 dB	≤ 20 dBm
	BLE (500 kbps)	-99 dBm ±2 dB	≤ 20 dBm

Ordering Code	Flash	Transmit Power	Operating Temperature Range	Antenna	Development Board (Only for Debugging)
HCM010SEAAMD-0P	768 KB	20 dBm	-40 °C to +105 °C	PCB antenna	HCM010SEAATB-0P
HCM010SEAAMD-0L	768 KB	20 dBm	-40 °C to +105 °C	Pin antenna interface	
HCM010SEAAMD-1X	768 KB	20 dBm	-40 °C to +105 °C	1st generation RF coaxial connector	HCM010SEAATB-1X
HCM010SEABMD-0P	768 KB	10 dBm	-40 °C to +105 °C	PCB antenna	HCM010SEABTB-0P
HCM010SEABMD-1X	768 KB	10 dBm	-40 °C to +105 °C	1st generation RF coaxial connector	

NOTE:

1. ①: See quick start guide of the module for details of the open solution.
2. ②: See hardware design manual for details of the module interfaces.
3. *: Ongoing.

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