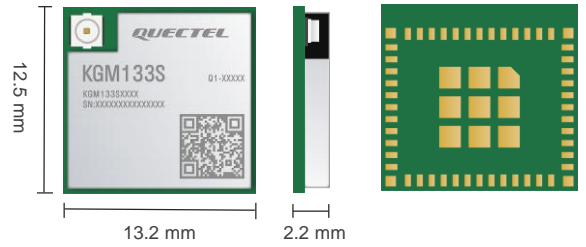


Quectel KGM133S

Matter, Thread, Zigbee & BLE Compact LGA Package



KGM133S is a high-performance MCU Thread, Zigbee and BLE module by Quectel. It boasts a ARM Cortex-M33 processor with a frequency of up to 78 MHz, and supports Matter, Thread, Zigbee, BLE 6.0, and BLE mesh. The module features built-in 256 KB SRAM and 1536 KB/ 2.5 MB/ 3.5 MB flash, ensuring efficient performance.

KGM133S is in an LGA form factor with an ultra-compact size, which optimizes the size and cost for end-products and is compatible with diverse designs.

KGM133S can support up to 21 GPIOs in the case of multiplexing, which can be used for interfaces including I2C, USART, SPI, I2S, etc. It also features a superior sensitivity of -105 dBm and a transmit power of up to +19.5 dBm, providing flexibility and versatility for a range of applications.

KGM133S supports standard Thread, Zigbee or Bluetooth mesh networking, increasing network scalability and node counts with mesh topology, which is suitable for devices that enables many-to-many communications, 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

- ✓ Matter 1.4, Thread 1.4, Zigbee 3.0, BLE 6.0
- ✓ 256 KB SRAM and 1536 KB/2.5 MB/3.5 MB flash (optional)
- ✓ Thread, Zigbee, BLE mesh networking
- ✓ 21 GPIOs which can be used for interfaces including I2C, USART, SPI, I2S, etc.
- ✓ Operating temperature range: -40 °C to +105 °C
- ✓ 4th generation RF coaxial connector/ pin antenna (optional)



Thread 1.4



Matter 1.4



BLE 6.0



Zigbee 3.0



LGA Form Factor



Compact Size



Operating Temperature Range: -40 °C to +105 °C



Multiple Interfaces

Thread 1.4 & BLE 6.0 KGM133S

Thread Protocol	Thread 1.4 (IEEE 802.15.4)
Bluetooth Protocol	BLE 6.0
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
Antenna	× 1 (4 th generation RF coaxial connector, pin antenna interface) (optional)
MCU Core	ARM Cortex-M33 (up to 78 MHz)
SRAM	256 KB
Flash	1536 KB/ 2.5 MB/ 3.5 MB (optional)
Dimensions	12.5 mm × 13.2 mm × 2.2 mm
Weight	Approx. 0.69 g

Temperature Range	
Operating Temperature Range	-40 °C to +105 °C
Storage Temperature Range	-45 °C to +115 °C

Certifications	
Regulatory (Planning)	Europe: CE America: FCC Canada: IC China: SRRC Australia/New Zealand: RCM
Others (Planning)	Bluetooth/ Matter/ Thread

Interfaces	
Interfaces [Ⓞ]	21 GPIOs (can be used for interfaces including I2C, USART, SPI, I2S, etc.)

Electrical Features	
Power Supply Voltage	1.71–3.8 V, typ. 3.3 V

Bluetooth Performance			
		Receiver Sensitivity	Transmit Power
BLE	1 Mbps	-97 dBm ±2 dB	≤ 20 dBm
	2 Mbps	-94 dBm ±2 dB	≤ 20 dBm
	S = 2	-101 dBm ±2 dB	≤ 20 dBm
	S = 8	-105 dBm ±2 dB	≤ 20 dBm

802.15.4 Performances			
		Receiver Sensitivity	Transmit Power
Zigbee or Thread	CH11 (2405 MHz)	-106 dBm ±2 dB	≤ 20 dBm
	CH18 (2440 MHz)	-105 dBm ±2 dB	≤ 20 dBm
	CH26 (2480 MHz)	-104 dBm ±2 dB	≤ 20 dBm

Ordering Code	Flash	Transmit Power	Operating Temperature Range	Antenna	Development Board (Only for Debugging)
KGM133SAAMD-4X-03	2.5 MB	+19.5 dBm	-40 °C to +105 °C	4 th generation RF coaxial connector	KGM133SAATB-4X-03
KGM133SABMD-4X-03	2.5 MB	+10 dBm	-40 °C to +105 °C	4 th generation RF coaxial connector	KGM133SABTB-4X-03
KGM133SABMD-0L-03	2.5 MB	+10 dBm	-40 °C to +105 °C	Pin antenna interface	KGM133SABTB-0L-03

NOTE:

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