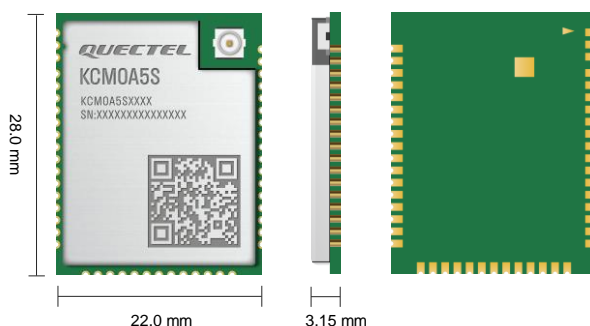


Quectel KCM0A5S

Wi-SUN Module LCC Package



KCM0A5S is a high-performance MCU Wi-SUN module launched by Quectel. It boasts an ARM Cortex-M33 processor with a frequency of up to 97.5 MHz, and supports 470–928 MHz frequency band. The module features built-in 256 KB RAM and 2 MB flash, ensuring efficient performance.

KCM0A5S is in a LCC form factor with an ultra-compact size of 28.0 mm × 22.0 mm × 3.15 mm, which optimizes the size and cost for end-products and is compatible with diverse designs.

KCM0A5S supports the Wi-SUN FAN 1.1 standard protocol, utilizing IPv6-based wireless mesh networking technology. It features adaptive frequency hopping and strong anti-interference capabilities, offering high capacity, long-range transmission, enhanced security, and high-speed data rates. Designed for battery-powered applications, KCM0A5S is widely used in smart metering (electricity/water/gas meters), smart street lighting, smart cities, precision agriculture, and industrial IoT solutions.



Key Features

- ✓ 470–928 MHz frequency band
- ✓ 256 KB RAM and 2 MB flash
- ✓ Wi-SUN FAN 1.1 standard protocol (OFDM/FSK modulation)
- ✓ Support 1 EUSART, 1 SWD and 23 GPIO interfaces by default and multiple interfaces including EUSART, I2C, ADC, USB via pin multiplexing
- ✓ Long-range transmission, stable network connection, strong anti-interference capability, excellent penetration, and reliable data transmission
- ✓ Operating temperature range: -40 °C to +85 °C



Wi-SUN FAN 1.1



LCC Form Factor



Compact Size



Multiple Interfaces



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

Quectel KCM0A5S

Wi-SUN	KCM0A5S
Protocol	Wi-SUN FAN 1.1
Frequency Band	470–928 MHz (Configurable)
Modulation Mode	Wi-SUN FSK, Wi-SUN MR OFDM MCS 0-6 (Option1/2/3/4), 802.15.4 SUN MR O-QPSK*
Encryption Mode	AES-128, AES-192, AES-256, ECC, SHA-1, SHA-2/256
Wi-SUN Antenna	1 st generation RF coaxial connector, pin antenna (optional)
Kernel	ARM Cortex-M33 (up to 97.5 MHz)
RAM	256 KB
Flash	2 MB
Transmit Power (Max.)	30 dBm/ 16 dBm (optional)
Dimensions	28.0 mm × 22.0 mm × 3.15 mm
Weight	Approx. 2.765 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* Brazil: Anatel* Australia/New Zealand: RCM*
Other Certifications	Wi-SUN FAN 1.1*
Interfaces	
Antenna Interface	× 1 (1 st generation RF coaxial connector, pin antenna) (optional)
Interfaces ^①	EUSART/ SPI /SWD/ I2C, etc.
Electrical Features	
Power Supply Voltage	VBAT: 3.45–5.5 V, typ. 5.0 V
Wi-SUN Performance	

		PHY Mode ID	EVM (RMS Error)	Transmit Power	Receiver Sensitivity
902–907.5 MHz & 915–928 MHz	FSK #1b 50kbps_mi1	2	-	≤ 30 dBm	-111 dBm
	FSK #2a 100kbps_mi0p5	3	-	≤ 30 dBm	-110.5 dBm
	FSK #3 150kbps_mi0p5	5	-	≤ 30 dBm	-109 dBm
	FSK #4a 200kbps_mi0p5	6	-	≤ 30 dBm	-107.5 dBm
	FSK #5 300kbps_mi0p5	8	-	≤ 30 dBm	-106 dBm
	OFDM MCS2 Option1	34	< -10 dB	≤ 28 dBm	-107 dBm
	OFDM MCS6 Option1	38	< -19 dB	≤ 16 dBm	-96.5 dBm
	OFDM MCS3 Option2	51	< -10 dB	≤ 27 dBm	-108 dBm
	OFDM MCS6 Option2	54	< -19 dB	≤ 26 dBm	-99.5 dBm
	OFDM MCS4 Option3	68	< -13 dB	≤ 27 dBm	-108 dBm
	OFDM MCS6 Option3	70	< -19 dB	≤ 26 dBm	-102.5 dBm
	OFDM MCS4 Option4	84	< -13 dB	≤ 27 dBm	-111 dBm
	OFDM MCS6 Option4	86	< -19 dB	≤ 26 dBm	-104.5 dBm

Ordering Code	Transmit Power	Frequency Band	Applicable Regions	Antenna	Development Board (Only for Debugging)
KCM0A5SABMD-0L-02	≤ 16 dBm	470–928 MHz	Global	Pin antenna interface	KCM0A5SABTB-0L-2
KCM0A5SABMD-1X-02	≤ 16 dBm	470–928 MHz	Global	1 st generation RF coaxial connector	-
KCM0A5SACMD-0L-02	≤ 30 dBm	902–928 MHz	Brazil, North America, Australia/New Zealand, selected Southeast Asia regions	Pin antenna interface	KCM0A5SACTB-0L-2
KCM0A5SACMD-1X-02	≤ 30 dBm	902–928 MHz	Brazil, North America, Australia/New Zealand, selected Southeast Asia regions	1 st generation RF coaxial connector	-

NOTE:

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