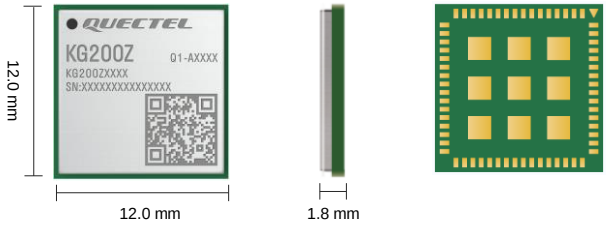
Quectel KG200Z

Stand-alone LoRa Module
Compact LGA Package



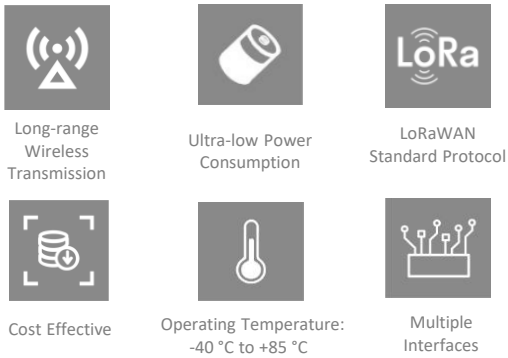
KG200Z is a high-performance LoRa module launched by Quectel, which supports ultra-low power consumption and long-range wireless transmission applications. It integrates an ARM Cortex-M4 core with the modulations of LoRa, (G)FSK, (G)MSK and BPSK, supporting LoRaWAN standard protocol and 470–510 MHz, 862–928 MHz LoRa frequency bands. Additionally, it incorporates AES hardware encryption for enhanced security.

KG200Z features a compact form factor of 12.0 mm × 12.0 mm × 1.8 mm and an LGA package to ensure seamless embedding of the module into size-constrained applications and reliable connectivity with these applications.

KG200Z connects to IoT devices via wireless internet from a local to a worldwide network, which offers secure end-to-end communication, mobility, and localized services for IoT applications. It has the advantages of strong anti-interference, high sensitivity, stable network connection, good transmission performance, low cost and easy deployment and can be used across a diverse range of applications such as smart locks, door sensors, gas and water leak detection, pet tracking, indoor air quality sensors, HVAC monitoring, smart parking and traffic monitoring, utility metering, waste management, air quality monitoring, as well as assets management tracking.

Key Features

- Long transmission distance: 2–5 km in towns, 10–15 km in suburbs
- Ultra-low power consumption (1.7 μA in deep sleep mode)
- LoRa modulation technology, high receiver sensitivity (-138 dBm)
- Compact profile of 12.0 mm × 12.0 mm, cost-effective
- Stable network connection, strong anti-interference, strong penetration, reliable data transmission
- Easier soldering and testing process with LGA package
- Multiple interfaces
- Operating temperature: -40 °C to +85 °C



Version: 1.0.0 | Status: Preliminary

Quectel KG200Z

LoRa	KG200Z	
LoRa Protocol	LoRaWAN	
LoRa Frequency Bands	470–510 MHz; 862–928 MHz	
Modulation	LoRa, (G)FSK, (G)MSK, BPSK	
Operating Mode	LoRa/FSK	
Hardware Encryption	AES-256 bit	
Core	32-bit ARM Cortex-M4 CPU	
Flash	256 KB	
RAM	64 KB	
Dimensions	12.0 mm × 12.0 mm × 1.8 mm	
Weight	Approx. 0.56 g	
Temperature Range		
Operating temperature	-40 °C to +85 °C	
Storage temperature	-45 °C to +95 °C	
Certifications		
Regulatory (Planning)	**Europe:** CE **America:** FCC **Canada:** IC **Brazil:** Anatel **South Korea:** KC **Japan:** TELEC **Australia/New Zealand:** RCM	
Interface ⓘ		
Peripheral Interfaces	DMA/ADC/DAC/USART/SPI/I2C/LPUART (low-power)	
Electrical Features		
Power Supply Voltage	1.8–3.6 V	
Power Consumption	1.7 μA (Deep Sleep Mode)	
LoRa Performance		
	Receiver Sensitivity (Typ.)	**Transmit Power (Typ.)**
125 kHz, SF12	-138 dBm	21 dBm

Ordering Code	Operating Temperature Range	Frequency Band	Development Board (Only for Debugging)
KG200ZAAMD	-40 °C to +85 °C	470–510 MHz	KG200ZAATB
KG200ZABMD	-40 °C to +85 °C	862–928 MHz	KG200ZABTB

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

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