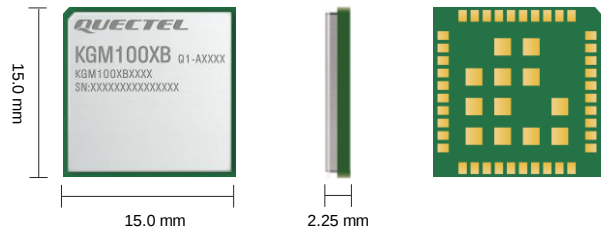


Quectel KGM100XB

Wireless Module for Amazon Sidewalk Compact LGA Package



Quectel KGM100XB is a low-power, cost-effective wireless module optimized for Amazon Sidewalk applications. It is equipped with a 32-bit RISC-V MCU core (up to 96 MHz) with a generous memory capacity including 160 KB RAM and 1024 KB flash.

In addition to supporting Bluetooth® LE, the module features an integrated long-range, low-power Sub-1 GHz transceiver with LoRa CSS and FSK modulation, which can be programmed for operation at 868 MHz and 915 MHz frequency bands to comply with global deployment requirements. This module complies with Bluetooth certification and will be certified for FCC/ CE/ IC.

With a 15.0 mm × 15.0 mm × 2.25 mm compact profile and an LGA package, KGM100XB can be easily embedded into size-constrained devices for reliable connectivity.

KGM100XB integrates all the hardware and software resources required for Amazon Sidewalk applications. It is suitable for low-data-rate control and data acquisition scenarios including smart home terminals and industrial applications.



Key Features

- ✓ BLE (2.4 GHz), Sub-1 GHz LoRa CSS and FSK
- ✓ 32-bit RISC-V MCU core (up to 96 MHz)
- ✓ 160 KB RAM (15.48 KB available) and 1024 KB flash (657 KB available) for applications
- ✓ Multiple interfaces like GPIO × 7, UART × 1, I2C × 1, JLINK × 1, SWS × 1
- ✓ Operating temperature: -40 °C to +85 °C



BLE 6.1



Ultra-low Power Consumption



Multiple Interfaces



Cost Effective



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



2.4 GHz/
Sub-1 GHz

Quectel KGM100XB

Wireless Module for Amazon Sidewalk		KGM100XB	
Frequency Bands		Sub-1 GHz LoRa CSS/ FSK: 863–928 MHz BLE: 2.402–2.480 GHz	
Modulation		FSK, GFSK, Sub-1 GHz LoRa CSS	
Bluetooth Protocol		BLE 6.1	
Bluetooth Operating Mode		BLE (Bluetooth LE)	
Kernel		32-bit RISC-V (up to 96 MHz)	
Hardware Encryption		AES-CCM & AES-128 (ECB/ CBC/ CTR/ CFB/ OFB/ GCM/ CCM/ CMAC mode)	
Flash		1024 KB flash with 657 KB available	
RAM		160 KB with 15.48 KB available	
Dimensions		15.0 mm × 15.0 mm × 2.25 mm	
Weight		Approx. 0.98 g	
Temperature Range			
Operating Temperature		-40 °C to +85 °C	
Storage Temperature		-45 °C to +95 °C	
Certifications			
Regulatory		Europe: CE* America: FCC* Canada: IC*	
Others		Bluetooth	
Interfaces			
Antenna Interfaces		× 2 (Sub-1 GHz LoRa CSS/ FSK antenna interface, BLE antenna interface)	
Other Interfaces ①		GPIO × 7, UART × 1, I2C × 1, JLINK × 1, SWS × 1	
Electrical Features			
Power Supply Voltage		VSYS: 1.8–3.7 V, Typ. 3.3 V VMCU: 1.8–4.5 V, Typ. 3.3 V	
RF Performance			
		Receiver Sensitivity (Typ.)	Transmit Power (Typ.)
BLE	1 Mbps	-93 dBm	8 dBm @ 3.3 V
	BW_L = 125 kHz, SF = 7	-122 dBm	20 dBm
LoRa CSS	BW_L = 500 kHz, SF = 7	-122 dBm	20 dBm
	BW_L = 500 kHz, SF = 11	-122 dBm	20 dBm
	50 kbps	-104 dBm	20 dBm
FSK	150 kbps	-98 dBm	20 dBm
	250 kbps	-95 dBm	20 dBm
Ordering Code		Operating Temperature Range	Frequency Band
KGM100XBADMD		-40 °C to +85 °C	863–928 MHz & 2.4 GHz
			Development Board (Only for Debugging)
			KGM100XBAAEV

NOTE:
1. ①: See hardware design documents for details of the module interfaces.
2. *: Ongoing.