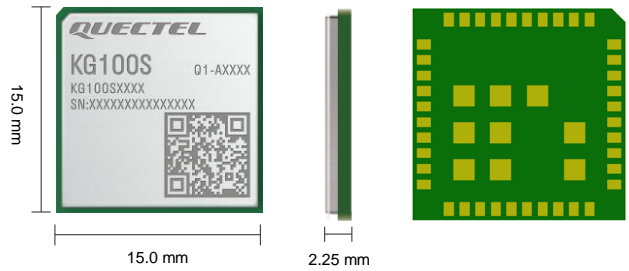




# Quectel KG100S

## Wireless Module for Amazon Sidewalk Compact LGA Package



Quectel KG100S is a low-power and cost-effective wireless module for Amazon Sidewalk applications. Amazon Sidewalk is a secure community network that uses Amazon Sidewalk Bridges, such as compatible Amazon Echo and Ring devices, to provide cloud connectivity for IoT devices. Amazon Sidewalk enables low-bandwidth and long-range connectivity at home and beyond using Bluetooth LE for short-distance communication and LoRa and FSK radio protocols at 900 MHz frequencies to cover longer distances.

Quectel KG100S has an energy-friendly micro controller with a high performance 2.4 GHz radio transceiver for BLE, and a built-in long-range low power Sub-1 GHz CSS and FSK transceiver. A compact profile of 15.0 mm × 15.0 mm × 2.25 mm and LGA form factor ensure that it can be easily embedded into size-constrained applications and provide reliable connectivity with these applications.

Quectel KG100S integrates all the hardware and software resources required for Amazon Sidewalk applications. It is suitable for low flow control and data acquisition applications such as home intelligent terminal, industrial application.



### Key Features

- ✓ BLE 5.1
- ✓ Built-in Sub-1 GHz CSS and FSK transceiver
- ✓ 96 KB RAM, 1 MB Flash
- ✓ UART, I2C\*, SPI, JLINK, PTI and GPIOs
- ✓ Easier soldering and testing process with LGA package
- ✓ Faster time to market: simple design minimizes design-in time and development efforts



Ultra-compact Size



LGA Form Factor



BLE 5.1



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



Low Power  
Consumption

Wireless Module for Amazon Sidewalk		KG100S		
Frequency Band		Sub-1 GHz CSS/FSK: 863–928 MHz BLE: 2.402–2.480 GHz		
Modulation		FSK, GFSK, CSS		
Bluetooth Protocol		BLE 5.1		
Bluetooth Operating Mode		BLE (Bluetooth LE)		
Kernel		ARM Cortex®-M33 (up to 80 MHz)		
RAM		96 KB		
Flash		1 MB		
Dimension (mm)		15.0 × 15.0 × 2.25		
Weight (g)		Approx. 0.94 g		
Interfaces				
Antenna Interfaces		Sub-1 GHz CSS/FSK antenna interface × 1, BLE antenna interface × 1		
Other Interfaces <sup>①</sup>		UART/ JLINK/ SPI/ PTI/ I2C*/ GPIOs		
Temperature Range				
Operating Temperature Range		-40 °C to +85 °C		
Storage Temperature Range		-45 °C to +95 °C		
Electrical Features				
Power Supply Voltage		VSYS: 3.0–3.6 V, Typ. 3.3 V VMCU: 1.71–3.6 V, Typ. 1.8/ 3.3 V		
Certification				
Regulatory		Europe: CE America: FCC Canada: IC		
Others		Bluetooth		
RF Performance				
		Receiver Sensitivity (Typ.)	Transmit Power (Typ.)	
BLE	1 Mbps	-93 dBm	10 dBm	
	2 Mbps	-93 dBm	10 dBm	
CSS	BW_L = 125 kHz, SF = 7	-122 dBm	22 dBm	
	BW_L = 500 kHz, SF = 7	-115 dBm	22 dBm	
	BW_L = 500 kHz, SF = 11	-128 dBm	22 dBm	
FSK	50 kbps	-104 dBm	22 dBm	
	150 kbps	-98 dBm	22 dBm	
	250 kbps	-95 dBm	22 dBm	
Ordering Code	Flash	Operating Temperature Range	Antenna	Development Board (Only for Debugging)
KG100SABMD	1 MB	-40 °C to +85 °C	External antenna pin	KG100SABEV

- NOTE:
- ① : See hardware design documents for details of the module interfaces.
  - \*: Under development.

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