Quectel KG100S

Wireless Module for Amazon Sidewalk
Compact LGA Package

15.0 mm

15.0 mm

2.25 mm
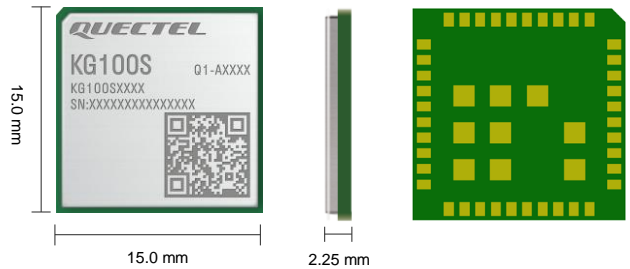
Quectel KG100S is a low-power and cost-effective wireless module for Amazon Sidewalk applications. Amazon Sidewalk is a secure community network that uses Amazon Sidewalk Bridges, such as compatible Amazon Echo and Ring devices, to provide cloud connectivity for IoT devices. Amazon Sidewalk enables low-bandwidth 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 ①	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. ① : See hardware design documents for details of the module interfaces.
2. *: Under development.

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