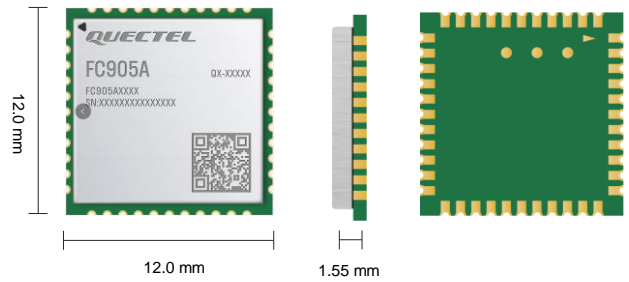


Quectel FC905A

Wi-Fi 5 & Bluetooth 5.0 Module

Ultra-compact LCC Package



FC905A is a high-performance Wi-Fi 5 and BLE (Bluetooth 5.0) module in LCC package. It can be used to establish WLAN and Bluetooth connections. In IEEE 802.11ac mode, the WLAN operation supports rates of MCS 0–MCS 8 in 20 MHz channel and MCS 0–MCS 9 in 40 MHz and 80 MHz channels. With 256QAM supported, it delivers maximum data rate up to 433.3 Mbps. All rates specified in IEEE 802.11a/b/g/n are supported. Designed with a reliable SDIO 3.0 interface to provide WLAN capability, FC905A also includes 2.4 GHz and 5 GHz transmit power amplifiers and receive low noise amplifiers.

FC905A is Bluetooth 5.0 compliant. The Bluetooth transmitter features a Class 1 power amplifier. FC905A supports Extended Synchronous Connection Oriented link (eSCO) for enhanced voice quality by allowing for retransmission of dropped packets, and Adaptive Frequency Hopping (AFH) for reducing radio frequency interference.

With an ultra-compact size of 12.0 mm × 12.0 mm × 1.55 mm, FC905A optimizes the size and cost for end-products, which fully meets the demands of size-sensitive applications.

Surface-mount Technology (SMT) makes FC905A an ideal solution for durable and rugged designs. The low profile and small size of LCC package ensure that FC905A can be easily embedded into size-constrained applications and provide reliable connectivity with these applications. The advanced package and the laser-engraved label with better heat dissipation and indelible markings allow for large-scale automated manufacturing that has strict requirements on cost and efficiency. Coupled with its compact size and wide operating temperature range, FC905A can meet various needs of commercial and industrial applications.



Key Features

- ✓ 2.4 GHz/ 5 GHz Wi-Fi and BLE (Bluetooth 5.0)
- ✓ SDIO 3.0 interface that supports higher data transmission rate and enables lower power consumption
- ✓ Explicit transmit beamforming standardized by IEEE 802.11ac
- ✓ Faster time-to-market: simple design minimizes design-in time and development efforts
- ✓ Wide operating temperature range: -30 °C to +85 °C



Ultra-compact
Size



LCC Package



IEEE 802.11
a/b/g/n/ac



SDIO 3.0
Interface



Operating Temperature
Range: -30 °C to +85 °C



BLE (Bluetooth 5.0)

Wi-Fi 5 & Bluetooth 5.0	FC905A
WLAN Protocol	IEEE 802.11a/b/g/n/ac
Wi-Fi Frequency Band	2.4 GHz/ 5 GHz
Wi-Fi Antenna	1 × 1
Wi-Fi Modulation Mode	DSSS, CCK, BPSK, QPSK, DBPSK, DQPSK, 16QAM, 64QAM, 256QAM
Bluetooth Protocol	Bluetooth 5.0
Bluetooth Antenna	Share antenna with Wi-Fi
Encryption Mode	WPA3
Wi-Fi Operating Mode	AP/ STA
Dimension	12.0 mm × 12.0 mm × 1.55 mm
Weight	Approx. 0.6 g
Temperature Range	
Operating Temperature	-30 °C to +85 °C ^①
Data Rate (Max.)	
802.11a	54 Mbps
802.11b	11 Mbps
802.11g	54 Mbps
802.11n	150 Mbps
802.11ac	433.3 Mbps
Interfaces	
PCM	× 1 (for Bluetooth)
SDIO 3.0	× 1 (for Wi-Fi)
UART	× 1 (for Bluetooth)
Wi-Fi/ Bluetooth Antenna	× 1
Electrical Features	
Power Supply Voltage	VBAT: 3.13–4.8 V, Typ. 3.6 V
I/O Power Supply Voltage	VIO: 1.71–3.63 V, Typ. 1.8/ 3.3 V
Power Consumption	Max. current at Tx mode: 319 mA @ VBAT 0.59 mA @ VIO
Certification	
Regulatory	Europe: CE America: FCC Canada: IC China: SRRC Japan: JATE/ TELEC

NOTE:
①: Functionality is guaranteed across this ambient temperature range. Optimum RF performance is guaranteed only in the temperature range from -30 °C to 75 °C.

Wi-Fi 5 & Bluetooth 5.0FC905A

Wi-Fi Performance			
		Receiving Sensitivity (Typ.)	Transmitting Power (Typ.)
2.4 GHz	802.11b/1 Mbps	-96 dBm	18 dBm
	802.11b/11 Mbps	-87 dBm	18 dBm
	802.11g/6 Mbps	-93 dBm	18 dBm
	802.11g/54 Mbps	-76 dBm	16 dBm
	802.11n/HT20 MCS 0	-93 dBm	18 dBm
	802.11n/HT20 MCS 7	-74 dBm	15 dBm
5 GHz	802.11a/6 Mbps	-91 dBm	17 dBm
	802.11a/54 Mbps	-75 dBm	15 dBm
	802.11n/HT20 MCS 0	-91 dBm	17 dBm
	802.11n/HT20 MCS 7	-73 dBm	15 dBm
	802.11n/HT40 MCS 0	-88 dBm	16 dBm
	802.11n/HT40 MCS 7	-70 dBm	13 dBm
	802.11ac/VHT20 MCS 0	-91 dBm	17 dBm
	802.11ac/VHT20 MCS 8	-70 dBm	14 dBm
	802.11ac/VHT40 MCS 0	-88 dBm	16 dBm
	802.11ac/VHT40 MCS 9	-65 dBm	13 dBm
	802.11ac/VHT80 MCS 0	-85 dBm	15 dBm
	802.11ac/VHT80 MCS 9	-63 dBm	12 dBm

Bluetooth Performance			
		Receiving Sensitivity (Typ.)	Transmitting Power (Typ.)
BR		-88 dBm	9 dBm
EDR (π/4-DQPSK)		-92 dBm	6 dBm
EDR (8-DPSK)		-85 dBm	6 dBm
BLE		-92 dBm	5 dBm

Model	Ordering Code	Antenna	DBS	Coexistence with Cellular Module	Development Board (Only for Debugging)
FC905A	FC905AAAMD	One antenna	-	-	FC905AAAM2