Quectel FC900E

Wi-Fi 5 & Bluetooth 5.0 Module
Ultra-compact LCC Package

QUECTEL

FC900E

FC900EXXXX
SN:XXXXXXXXXXXXXX

QX-XXXXX
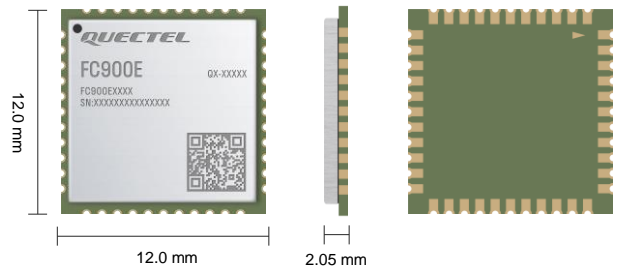
12.0 mm

12.0 mm

2.05 mm

Quectel FC900E is a cost-effective Wi-Fi&Bluetooth module featuring high performance. Designed in ultra-compact 12.0 mm × 12.0 mm × 2.05 mm profile, it optimizes the size and cost for end-products, which fully meets the demands of size sensitive applications.

Surface-mount technology (SMT) makes FC900E an ideal solution for durable and rugged designs. The low profile and small size of LCC package make sure it can be easily embedded into size-constrained applications and provide reliable connectivity with these applications. The advanced package allows for large-scale automated manufacturing which has strict requirements on cost and efficiency.

Combining advantages such as compact form factor, low power consumption, wide temperature range and stable SDIO interface, FC900E can meet various needs of commercial and industrial applications, such as speaker box, set-top box and POS machine.

Key Features

- Ultra-compact Wi-Fi & Bluetooth module
- Support BLE and BR/EDR (Bluetooth 5.0)
- Support IEEE 802.11 a/b/g/n/ac standards
- Easier soldering and testing process with LCC package
- Stable and reliable SDIO communication interface
- Fast time-to-market: simple design minimizes design-in time and development efforts

Ultra Compact Size

LCC Package

IEEE 802.11 a/b/g/n/ac

SDIO Interface

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

Bluetooth 5.0

Wi-Fi 5 & Bluetooth 5.0	FC900E
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	DSSSS, DBPSK, DQPSK, CCK, BPSK, QPSK, 16QAM, 64QAM, 256QAM
2.4 GHz Channel Bandwidth	20 MHz, 40 MHz
5 GHz Channel Bandwidth	20 MHz, 40 MHz, 80 MHz
Encryption Mode	WPA3
Wi-Fi Operating Mode	AP/STA
Bluetooth Protocol	Bluetooth 5.0
Dimension	12.0 mm × 12.0 mm × 2.05 mm
Weight	0.53 g
Temperature Range	
Operating Temperature	-40 °C to +85 °C
Storage Temperature	-40 °C to +95 °C
Data Rate (Max.)	
802.11a	54 Mbps
802.11b	11 Mbps
802.11g	54 Mbps
802.11n	150 Mbps
802.11ac	433 Mbps
Interfaces	
SDIO 3.0	× 1 (for Wi-Fi)
BT_UART	× 1 (for Bluetooth)
PCM	× 1 (for Bluetooth)
Wi-Fi/Bluetooth Antenna	× 1
Electrical Features	
Power Supply Voltage	3.14–3.46 V, Typ. 3.3 V
I/O Power Supply Voltage	1.71–3.46 V, Typ. 1.8/3.3 V
Power Consumption (Typ.)	Max. current at Tx mode: 404.76 mA @ VBAT 6.61 mA @ VIO
Certifications	
Regulatory	**Europe:** CE **America:** FCC **The UK:** UKCA **Canad**a: IC **China:** SRRC **Australia/New Zealand:** RCM
Others	RoHS/Bluetooth

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Wi-Fi 5 & Bluetooth 5.0	FC900E

Wi-Fi Performance

		Receiving Sensitivity (Typ.)	Transmitting Power (Typ.)
2.4 GHz	802.11b/1 Mbps	-94 dBm	19 dBm
	802.11b/11 Mbps	-87 dBm	19 dBm
	802.11g/6 Mbps	-89 dBm	18 dBm
	802.11g/54 Mbps	-73 dBm	17 dBm
	802.11n/HT20 MCS 0	-89 dBm	18 dBm
	802.11n/HT20 MCS 7	-70 dBm	16 dBm
	802.11n/HT40 MCS 0	-86 dBm	17 dBm
	802.11n/HT40 MCS 7	-67.5 dBm	16 dBm
5 GHz	802.11a/6 Mbps	-89.5 dBm	15 dBm
	802.11a/54 Mbps	-73 dBm	12 dBm
	802.11n/HT20 MCS 0	-89 dBm	13.5 dBm
	802.11n/HT20 MCS 7	-70 dBm	10 dBm
	802.11n/HT40 MCS 0	-86.5 dBm	13.5 dBm
	802.11n/HT40 MCS 7	-67.5 dBm	10 dBm
	802.11ac/VHT20 MCS 0	-89 dBm	12.5 dBm
	802.11ac/VHT20 MCS 8	-66 dBm	10 dBm
	802.11ac/VHT40 MCS 0	-86 dBm	12 dBm
	802.11ac/VHT40 MCS 9	-61.5 dBm	8.5 dBm
	802.11ac/VHT80 MCS 0	-83.5 dBm	12 dBm
	802.11ac/VHT80 MCS 9	-58.5 dBm	9 dBm

Bluetooth Performance

	Receiving Sensitivity (Typ.)	Transmitting Power (Typ.)
BR	-94 dBm	10 dBm
EDR (π/4-DQPSK)	-93 dBm	0 dBm
EDR (8-DPSK)	-87 dBm	0 dBm
BLE	-95 dBm	-2 dBm

Model	Ordering Code	Antenna	DBS	Coexistence with Cellular Module	Development Board (Only for Debugging)
FC900E	FC900EAAMD	One antenna	-	-	FC900EAAM2
FC900E	FC900EABMD	One antenna	-	-	FC900EABM2

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