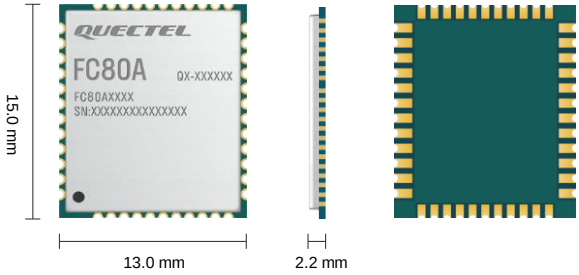
Quectel FC80A

Wi-Fi&Bluetooth Module
Ultra-compact LCC Package



FC80A is a high-performance Wi-Fi 5 and Bluetooth 5.1 module in LCC package. It can be used to establish WLAN and Bluetooth connections. With 2 × 2 MIMO and 1 × 1 + 1 × 1 RSDB (Real Simultaneous Dual Band) supported, it provides a maximum theoretical data rate up to 866.6 Mbps.

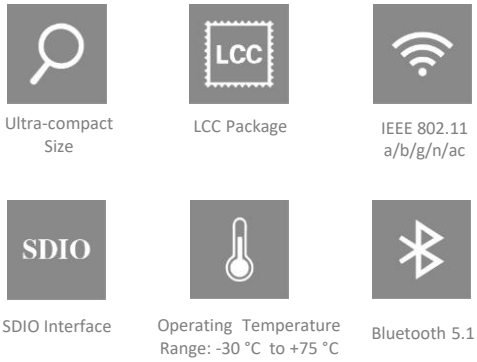
With a ultra-compact size of 15.0 mm × 13.0 mm × 2.2 mm, FC80A optimizes the size and cost for end-products, which fully meets the demands of size-sensitive applications.

Surface Mount Technology (SMT) makes FC80A an ideal solution for durable and rugged designs. The low profile and small size of LCC package ensure that FC80A 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 which has strict requirements on cost and efficiency.

Designed with a reliable SDIO 3.0 interface to provide WLAN capability, FC80A achieves low-power and high-speed data transmission. Coupled with its compact size and wide operating temperature range, FC80A can meet Wi-Fi & Bluetooth application design requirements in fields including industry, consumer goods, smart TV and VR.

Key Features

- Support 2.4 GHz and 5 GHz RSDB Wi-Fi and Bluetooth 5.1
- Support SDIO 3.0 interface which features higher data transmission rate and lower power consumption
- Shorter time to market: simple design minimizes design-in time and development efforts
- Wide operating temperature range: -30 °C to +75 °C



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Quectel FC80A

Wi-Fi&Bluetooth	FC80A
Region	Global
Function	Wi-Fi 2.4 GHz/5 GHz, Bluetooth 5.1
WLAN	IEEE 802.11a/b/g/n/ac
Bluetooth	Bluetooth 5.1
2.4 GHz Channel Width	20 MHz
5 GHz Channel Width	20 MHz, 40 MHz, 80 MHz
RSDB	Supported
Wi-Fi Modulation Mode	BPSK, QPSK, CCK, 16QAM, 64QAM, 256QAM
Temperature Range	
Operating Temperature Range	-30 °C to +75 °C
Data Rate (Max.)	
802.11a	54 Mbps
802.11b	11 Mbps
802.11g	54 Mbps
802.11n	300 Mbps
802.11ac	866 Mbps
Interfaces	
PCM	× 1
SDIO	× 1
UART	× 1
Special Pins	SDIO_VSEL, WLAN_EN, BT_EN
Wi-Fi Antenna	× 1
Wi-Fi/Bluetooth Antenna	× 1
Bluetooth Antenna*	× 1 (optional)
Electrical Features	
Power Supply Voltage	VBAT: 3.2–4.5 V, typ. 3.3 V
I/O Power Supply Voltage	VDDIO: 1.7–3.6 V, typ. 1.8/3.3 V
Power Consumption (Typ.)	Max. current at 802.11n/ac MIMO Tx mode 627 mA @ 3.3 V 0.7 mA @ 1.8 V
General Features	
Encryption Mode	WPA3
Operating Mode	AP/STA
Dimension	15.0 mm × 13.0 mm × 2.2 mm
Weight	Approx. 0.88 g
Certification	
Regulatory	**Europe:** CE **America:** FCC **Canada:** IC **China:** SRRC **South Korea:** KC* **Japan:** JATE*/TELEC* **Australia/New Zealand:** RCM

NOTE:
* means under development/in progress.

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Wi-Fi&Bluetooth		FC80A	
Wi-Fi Performance			
		Receiving Sensitivity (Typ.)	**Transmitting Power (Typ.)**
2.4 GHz	**802.11b/1 Mbps**	-98 dBm	18 dBm
	802.11b/11 Mbps	-90 dBm	18 dBm
	802.11g/6 Mbps	-94 dBm	17 dBm
	802.11g/54 Mbps	-77 dBm	16.5 dBm
	802.11n/HT20 MCS0	-93 dBm	17 dBm
	802.11n/HT20 MCS7	-76 dBm	15.5 dBm
		Receiving Sensitivity (Typ.)	**Transmitting Power (Typ.)**
5 GHz	**802.11a/6 Mbps**	-92 dBm	14 dBm
	802.11a/54 Mbps	-76 dBm	12 dBm
	802.11n/HT20 MCS0	-92 dBm	14 dBm
	802.11n/HT20 MCS7	-74 dBm	12 dBm
	802.11n/HT40 MCS0	-90 dBm	14 dBm
	802.11n/HT40 MCS7	-71 dBm	11 dBm
	802.11ac/VHT20 MCS0	-92 dBm	14 dBm
	802.11ac/VHT20 MCS8	-69 dBm	11 dBm
	802.11ac/VHT40 MCS0	-90 dBm	14 dBm
	802.11ac/VHT40 MCS9	-65 dBm	10 dBm
	802.11ac/VHT80 MCS0	-87 dBm	14 dBm
	802.11ac/VHT80 MCS9	-62 dBm	10 dBm
Bluetooth Performance			
		Receiving Sensitivity (Typ.)	**Transmitting Power (Typ.)**
BR		-93 dBm	8 dBm
EDR (π/4-DQPSK)		-92 dBm	4 dBm
EDR (8-DQPSK)		-86 dBm	4 dBm
BLE (1M)		-97 dBm	7.5 dBm

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