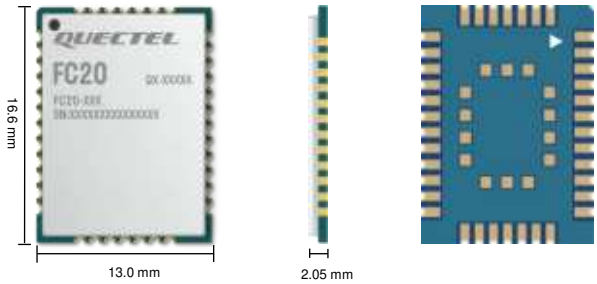
Quectel FC20 Series

Wi-Fi&Bluetooth Module
Ultra-compact LCC Package



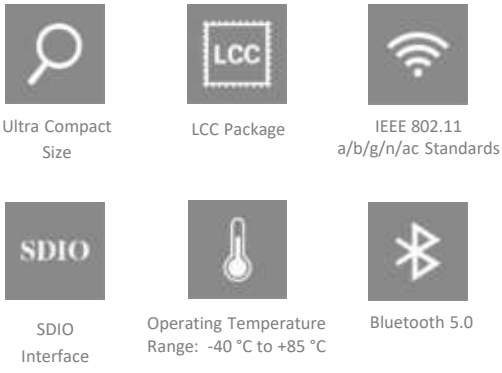
Quectel FC20 series is a cost-effective Wi-Fi&Bluetooth module featuring high performance. Designed in ultra-compact 16.6 mm × 13.0 mm × 2.05 mm profile, it optimizes the size and cost for end-products, which fully meets the demands of size-sensitive applications.

FC20 series contains two variants (FC20 and FC20-N) which can be adapted to different application scenarios. Surface-mount technology makes FC20 series be an ideal solution for durable and rugged designs. The low profile and small size of LCC package enable FC20 series to 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, extended temperature range and stable SDIO interface, FC20 series is typically used in combination with Quectel LTE Standard EC21 series, EC25 series, EC20 R2.1 and EG25-G modules and other application processors (IMX6, IMX8, etc.) to serve a wide range of M2M applications, such as automotive, security, industrial PDA, MiFi and health care.

Key Features

- Ultra-compact Wi-Fi&Bluetooth module
- Support BLE (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 Standards

SDIO Interface | Operating Temperature Range: -40 °C to +85 °C | Bluetooth 5.0

EMAIL US: info@quectel.com
VISIT US: www.quectel.com

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Quectel FC20 Series

Wi-Fi&Bluetooth	FC20	FC20-N
Region	Global	Global
Function	Wi-Fi 2.4 GHz+5 GHz; Bluetooth 5.0	Wi-Fi 2.4 GHz
WLAN	IEEE 802.11 a/b/g/n/ac	IEEE 802.11 b/g/n
Bluetooth	Bluetooth 5.0	-
Modulation Mode	BPSK, QPSK, CCK, 16QAM, 64QAM, 256QAM	BPSK, QPSK, CCK, 16QAM, 64QAM
Temperature Range		
Operating Temperature Range	-40 °C to +85 °C	-40 °C to +85 °C
Data Rate (Max.)		
802.11a	54 Mbps	-
802.11b	11 Mbps	11 Mbps
802.11g	54 Mbps	54 Mbps
802.11n	150 Mbps	150 Mbps
802.11ac	433 Mbps	-
Bluetooth AMP	24 Mbps	-
Interfaces		
SDIO 3.0	× 1	× 1
BT_UART	× 1	-
PCM	× 1	-
Wi-Fi/Bluetooth Antenna	× 1	× 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.)	**OFF State (Wi-Fi is disabled):** ● 2 μA @3.3 V WLAN power supply ● 554 μA @1.8 V I/O Pins power supply **Idle (Wi-Fi is enabled without any device connected):** ● 66 mA @3.3 V WLAN power supply ● 6.5 mA @1.8 V I/O Pins power supply	
Encryption Mode	WEP/ TKIP/ AES/ WPA-PSK/ WPA2-PSK	
AP (Max. Access Points)	16	
Operating Mode	AP/ STA	
Dimension	16.6 mm × 13.0 mm × 2.05 mm	
Weight	Approx. 0.81 g	
Certifications		
Regulatory	**Europe:** CE **America:** FCC **Canada:** IC **Brazil:** Anatel **Japan:** JATE/ TELEC	
Others	RoHS	

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HQ address: Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
Tel: +86 21 51086236 Email: info@quectel.com

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Wi-Fi&Bluetooth		FC20	FC20-N
RF Performance			
		Receiving Sensitivity (Typ.)	Receiving Sensitivity (Typ.)
2.4 GHz	802.11b/1 Mbps	-95 dBm	-95 dBm
	802.11b/11 Mbps	-88 dBm	-88 dBm
	802.11g/6 Mbps	-90 dBm	-90 dBm
	802.11g/54 Mbps	-74 dBm	-74 dBm
	802.11n/HT20 MCS0	-90 dBm	-90 dBm
	802.11n/HT20 MCS7	-71 dBm	-71 dBm
	802.11n/HT40 MCS0	-87 dBm	-87 dBm
	802.11n/HT40 MCS7	-68.5 dBm	-68.5 dBm
5 GHz	802.11a/6 Mbps	-90.5 dBm	-
	802.11a/54 Mbps	-74 dBm	-
	802.11n/HT20 MCS0	-90 dBm	-
	802.11n/HT20 MCS7	-71 dBm	-
	802.11n/HT40 MCS0	-87.5 dBm	-
	802.11n/HT40 MCS7	-68.5 dBm	-
	802.11ac/VHT20 MCS0	-90 dBm	-
	802.11ac/VHT20 MCS8	-67 dBm	-
	802.11ac/VHT40 MCS0	-87 dBm	-
	802.11ac/VHT40 MCS9	-62.5 dBm	-
	802.11ac/VHT80 MCS0	-84.5 dBm	-
	802.11ac/VHT80 MCS9	-59.5 dBm	-
		Transmitting Power (Typ.)	Transmitting Power (Typ.)
2.4 GHz	802.11b/1 Mbps	17.5 dBm	17.5 dBm
	802.11b/11 Mbps	17 dBm	17 dBm
	802.11g/6 Mbps	16.5 dBm	16.5 dBm
	802.11g/54 Mbps	15 dBm	15 dBm
	802.11n/HT20 MCS0	15.5 dBm	15.5 dBm
	802.11n/HT20 MCS7	14.5 dBm	14.5 dBm
	802.11n/HT40 MCS0	15 dBm	15 dBm
	802.11n/HT40 MCS7	13 dBm	13 dBm
5 GHz	802.11a/6 Mbps	14.5 dBm	-
	802.11a/54 Mbps	12.5 dBm	-
	802.11n/HT20 MCS0	13.5 dBm	-
	802.11n/HT20 MCS7	11.5 dBm	-
	802.11n/HT40 MCS0	12 dBm	-
	802.11n/HT40 MCS7	10.5 dBm	-
	802.11ac/VHT20 MCS0	13.5 dBm	-
	802.11ac/VHT20 MCS8	11.5 dBm	-
	802.11ac/VHT40 MCS0	12 dBm	-
	802.11ac/VHT40 MCS9	10.5 dBm	-
	802.11ac/VHT80 MCS0	11.5 dBm	-
	802.11ac/VHT80 MCS9	10.5 dBm	-

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HQ address: Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai 200233, China
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