Quectel FC21

Wi-Fi & Bluetooth Module
Ultra-compact LCC Package
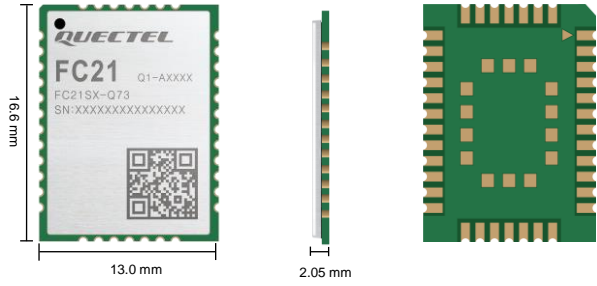
16.6 mm
13.0 mm
2.05 mm

Quectel FC21 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.

Surface-mount technology (SMT) makes FC21 an ideal solution for durable and rugged designs. The low profile and small size of LCC package make sure FC21 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, extended temperature range and stable SDIO interface, FC21 is typically used in combination with Quectel LTE Standard EC21 series, EC25 series, EC20-CE and EG25-G series 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 IEEE802.11 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

Version: 1.1 | Status: Released

Wi-Fi&Bluetooth	FC21
Region	Global
Function	Wi-Fi 2.4 GHz + 5 GHz; Bluetooth 5.0
WLAN	IEEE 802.11 a/b/g/n/ac
Bluetooth	Bluetooth 5.0
Modulation Mode	BPSK, QPSK, CCK, 16QAM, 64QAM, 256QAM
Temperature Range	
Operating Temperature Range	-40 °C to +85 °C
Data Rate (Max.)	
802.11a	54 Mbps
802.11b	11 Mbps
802.11g	54 Mbps
802.11n	150 Mbps
802.11ac	433 Mbps
BT AMP	24 Mbps
Interfaces	
SDIO 3.0	× 1
BT_UART	× 1
PCM	× 1
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.)	**OFF State (Wi-Fi is disabled):** ● 0 µA @ 3.3 V WLAN power supply ● 179 µA @ 1.8 V I/O Pins power supply **Idle (Wi-Fi is enabled without any device connected):** ● 31 mA @ 3.3 V WLAN power supply ● 2.8 mA @ 1.8 V I/O Pins power supply
Encryption Mode	WPA3
AP (Max. Access Points)	16
Operating Mode	AP/ STA
Dimension	16.6 mm × 13.0 mm × 2.05 mm
Weight	Approx. 0.73 g
Certifications	
Regulatory	**China:** SRRC **Europe:** CE **America:** FCC **Canada:** IC **Japan:** JATE/ TELEC **Australia/New Zealand:** RCM
Others	RoHS/ Bluetooth

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Wi-Fi&Bluetooth	FC21	
RF Performance		
	Receiving Sensitivity (Typ.)	**Transmitting Power (Typ.)**

		Receiving Sensitivity (Typ.)	Transmitting Power (Typ.)
2.4 GHz	**802.11b/1 Mbps**	-95 dBm	17 dBm
	802.11b/11 Mbps	-88 dBm	17 dBm
	802.11g/6 Mbps	-90 dBm	16.5 dBm
	802.11g/54 Mbps	-74 dBm	15 dBm
	802.11n/HT20 MCS 0	-90 dBm	16.5 dBm
	802.11n/HT20 MCS 7	-71 dBm	15 dBm
	802.11n/HT40 MCS 0	-87 dBm	15 dBm
	802.11n/HT40 MCS 7	-68.5 dBm	14 dBm
5 GHz	**802.11a/6 Mbps**	-90.5 dBm	15 dBm
	802.11a/54 Mbps	-74 dBm	12 dBm
	802.11n/HT20 MCS 0	-90 dBm	14 dBm
	802.11n/HT20 MCS 7	-71 dBm	11 dBm
	802.11n/HT40 MCS 0	-87.5 dBm	14 dBm
	802.11n/HT40 MCS 7	-68.5 dBm	11 dBm
	802.11ac/VHT20 MCS 0	-90 dBm	14 dBm
	802.11ac/VHT20 MCS 8	-67 dBm	11 dBm
	802.11ac/VHT40 MCS 0	-87 dBm	13 dBm
	802.11ac/VHT40 MCS 9	-62.5 dBm	8.5 dBm
	802.11ac/VHT80 MCS 0	-84.5 dBm	13 dBm
	802.11ac/VHT80 MCS 9	-59.5 dBm	9 dBm