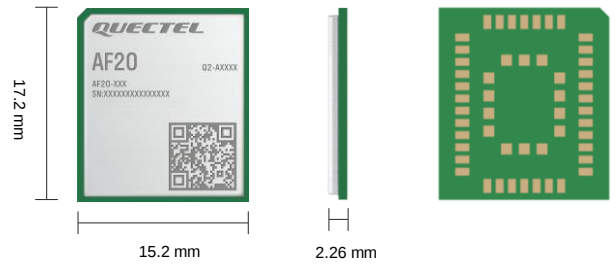


Quectel AF20

Automotive Grade
Wi-Fi 5 & Bluetooth 5.0 Module
Compact LGA Package



Quectel AF20 is a cost-effective Wi-Fi 5 and Bluetooth 5.0 module with high performance. The ultra-compact 17.2 mm × 15.2 mm × 2.26 mm profile makes it a perfect choice for size sensitive applications. The compact and unified form factor can also help customers reduce product sizes and cut costs.

Surface-mount technology (SMT) makes AF20 an ideal solution for durable and rugged designs. The compact LGA package ensures AF20 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, AF20 is especially applied to automotive industry applications.



Key Features

- ✓ Ultra-compact Wi-Fi & Bluetooth module
- ✓ Support Bluetooth 5.0 technology
- ✓ Support IEEE802.11a/b/g/n/ac standards
- ✓ Easier soldering and testing process with LGA package
- ✓ Stable and reliable SDIO 3.0 communication interface
- ✓ Fast time-to-market: simple design minimizes design-in time and development efforts



Ultra-compact
Size



LGA Package



IEEE 802.11
a/b/g/n/ac



Bluetooth 5.0



SDIO 3.0
Interface



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

Wi-Fi 5 & Bluetooth 5.0	AF20
Region	Global
Function	Wi-Fi 2.4 GHz/5 GHz; Bluetooth 5.0
WLAN	IEEE 802.11a/b/g/n/ac
Bluetooth	BLE (Bluetooth 5.0)
Wi-Fi Modulation Mode	BPSK, QPSK, CCK, 16QAM, 64QAM, 256QAM
Bluetooth Modulation Mode	GFSK, 8-DPSK, $\pi/4$ -DQPSK
Temperature Range	
Operating Temperature Range	-40 °C to +85 °C
Max. Data Rate	
802.11a	54 Mbps
802.11b	11 Mbps
802.11g	54 Mbps
802.11n	135 Mbps
802.11ac	433 Mbps
BLE (Bluetooth 5.0)	1 Mbps
Interfaces	
SDIO 3.0	× 1
PCM	× 1
UART	× 1
Coexistence Interface	× 1
Antenna Interface	RF_ANT: Wi-Fi and Bluetooth antenna interface
Electrical Features	
Power Supply Voltage	VDD_3V3: 3.14 V–3.46 V, Typ. 3.3 V
I/O Power Supply Voltage	VIO: 1.71 V–1.89 V, Typ. 1.8 V
Certification	
Regulatory (In progress)	Europe: CE America: FCC Australia/New Zealand: RCM
General Features	
Encryption Mode	WPA3
Max. Access Points	16
Operating Mode	AP/STA
Dimension	17.2 mm × 15.2 mm × 2.26 mm
Weight	Approx. 1.26 g

Wi-Fi 5 & Bluetooth 5.0		AF20	
RF Performance			
		Receiver Sensitivity (Typ.)	Transmit Power (Typ.)
2.4 GHz	802.11b/1 Mbps	-95.0 dBm	16 dBm
	802.11b/11 Mbps	-88.0 dBm	16 dBm
	802.11g/6 Mbps	-90.0 dBm	15 dBm
	802.11g/54 Mbps	-73.5 dBm	14 dBm
	802.11n/HT20 MCS 0	-89.5 dBm	15 dBm
	802.11n/HT20 MCS 7	-70.5 dBm	13 dBm
	802.11n/HT40 MCS 0	-87.5 dBm	15 dBm
	802.11n/HT40 MCS 7	-68.5 dBm	13 dBm
		Receiver Sensitivity (Typ.)	Transmit Power (Typ.)
5 GHz	802.11a/6 Mbps	-91.5 dBm	12 dBm
	802.11a/54 Mbps	-75.0 dBm	11 dBm
	802.11n/HT20 MCS 0	-91.0 dBm	12 dBm
	802.11n/HT20 MCS 7	-71.5 dBm	9 dBm
	802.11n/HT40 MCS 0	-88.0 dBm	12.5 dBm
	802.11n/HT40 MCS 7	-68.5 dBm	8 dBm
	802.11ac/VHT20 MCS 0	-91.0 dBm	12 dBm
	802.11ac/VHT20 MCS 8	-67.5 dBm	9 dBm
	802.11ac/VHT40 MCS 0	-88.0 dBm	12.5 dBm
	802.11ac/VHT40 MCS 9	-62.5 dBm	8 dBm
	802.11ac/VHT80 MCS 0	-84.5 dBm	11 dBm
	802.11ac/VHT80 MCS 9	-59.0 dBm	7 dBm