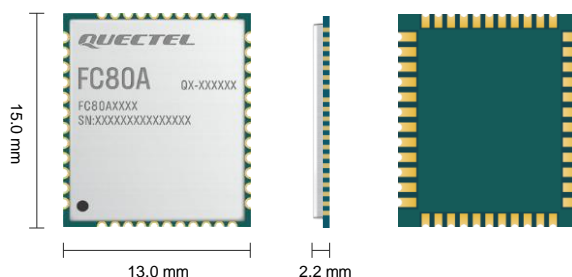


Quectel FC80A

Wi-Fi&Bluetooth Module

Ultra-compact LCC Package



FC80A is a high-performance Wi-Fi 5 and module in LCC package. It can be used to establish WLAN and Bluetooth connections. With 2×2 MIMO and $1 \times 1 + 1 \times 1$ 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 \times 13.0 mm \times 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 extended temperature range, FC80A can meet Wi-Fi & Bluetooth application design requirements in fields including consumer industry, smart TV and VR.



Key Features

- ✓ Support 2.4 GHz and 5 GHz RSDB and Bluetooth 5.0
- ✓ Support SDIO 3.0 interface which provides 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



Ultra-compact Size



LCC Package



IEEE 802.11 a/b/g/n/ac



SDIO Interface



Operating Temperature Range: -30 °C to +75 °C



Bluetooth 5.0

Quectel FC80A

| Wi-Fi&Bluetooth | FC80A |
|-----------------------------|--|
| 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 |
| 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 |
| I/O Power Supply Voltage | VDDIO: 1.7–3.6 V, typ. 1.8/3.3 V |
| Power Consumption (Typ.) | Max. current at 802.11ac MIMO TX mode 965 mA @ 3.3 V 0.73 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* Australia/New Zealand: RCM* |

NOTE:

* means under development/ongoing/planning.

Wi-Fi&Bluetooth

FC80A

Wi-Fi Performance

| | Receiving Sensitivity (dBm) | Transmitting Power (dBm) | |
|---------------------|-----------------------------|--------------------------|-----------|
| 2.4 GHz | 802.11b/1 Mbps | -98 | 18 ±2.5 |
| | 802.11b/11 Mbps | -90 | 18 ±2.5 |
| | 802.11g/6 Mbps | -94 | 18 ±2.5 |
| | 802.11g/54 Mbps | -77 | 16.5 ±2.5 |
| | 802.11n/HT20 MCS0 | -93 | 18 ±2.5 |
| | 802.11n/HT20 MCS7 | -76 | 15.5 ±2.5 |
| | Receiving Sensitivity (dBm) | Transmitting Power (dBm) | |
| 5 GHz | 802.11a/6 Mbps | -92 | 14 ±2.5 |
| | 802.11a/54 Mbps | -76 | 12 ±2.5 |
| | 802.11n/HT20 MCS0 | -92 | 14 ±2.5 |
| | 802.11n/HT20 MCS7 | -74 | 12 ±2.5 |
| | 802.11n/HT40 MCS0 | -90 | 14 ±2.5 |
| | 802.11n/HT40 MCS7 | -71 | 11 ±2.5 |
| | 802.11ac/VHT20 MCS0 | -92 | 14 ±2.5 |
| | 802.11ac/VHT20 MCS8 | -69 | 11 ±2.5 |
| | 802.11ac/VHT40 MCS0 | -90 | 14 ±2.5 |
| | 802.11ac/VHT40 MCS9 | -65 | 10 ±2.5 |
| | 802.11ac/VHT80 MCS0 | -87 | 14 ±2.5 |
| 802.11ac/VHT80 MCS9 | -62 | 10 ±2.5 | |

Bluetooth Performance

| | Receiving Sensitivity (dBm) | Transmitting Power (dBm) |
|-----------------------|-----------------------------|--------------------------|
| BR | -93 | 8 |
| EDR ($\pi/4$ -DQPSK) | -92 | 4 |
| EDR (8-DQPSK) | -86 | 4 |
| BLE (1M) | -97 | 7.5 |