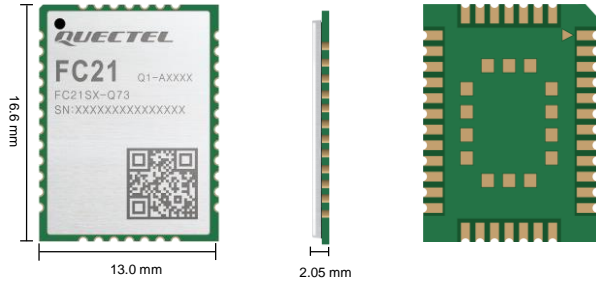




# Quectel FC21

## Wi-Fi & Bluetooth Module Ultra-compact LCC Package



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, smart safety, 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

| 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   |      |
| <b>Temperature Range</b>    |   |      |
| Operating Temperature Range | -40 °C to +85 °C  |      |
| <b>Data Rate (Max.)</b>     |   |      |
| 802.11a                     | 54 Mbps   |      |
| 802.11b                     | 11 Mbps   |      |
| 802.11g                     | 54 Mbps   |      |
| 802.11n                     | 150 Mbps  |      |
| 802.11ac                    | 433 Mbps  |      |
| BT AMP                      | 24 Mbps   |      |
| <b>Interfaces</b>           |   |      |
| SDIO 3.0                    | × 1   |      |
| BT_UART                     | × 1   |      |
| PCM                         | × 1   |      |
| Wi-Fi/Bluetooth Antenna     | × 1   |      |
| <b>Electrical Features</b>  |   |      |
| 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.)    | <p><b>OFF State (Wi-Fi is disabled):</b></p> <ul style="list-style-type: none"> <li>● 0 μA @ 3.3 V WLAN power supply</li> <li>● 179 μA @ 1.8 V I/O Pins power supply</li> </ul> <p><b>Idle (Wi-Fi is enabled without any device connected):</b></p> <ul style="list-style-type: none"> <li>● 31 mA @ 3.3 V WLAN power supply</li> <li>● 2.8 mA @ 1.8 V I/O Pins power supply</li> </ul> |      |
| 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  |      |
| <b>Certifications</b>       |   |      |
| Regulatory                  | <p><b>China:</b> SRRC<br/> <b>Europe:</b> CE<br/> <b>America:</b> FCC<br/> <b>Canada:</b> IC<br/> <b>Japan:</b> JATE/ TELEC<br/> <b>Australia/New Zealand:</b> RCM</p>  |      |
| Others                      | RoHS/ Bluetooth   |      |

| Wi-Fi&Bluetooth |                      | FC21                         |                           |
|-----------------|----------------------|------------------------------|---------------------------|
| RF Performance  |                      |                              |                           |
|                 |                      | 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                     |