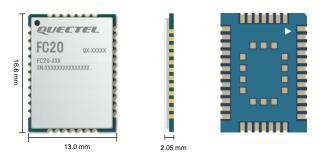


## **Quectel FC20 Series**

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  $\times$  13.0 mm  $\times$  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-CE and EG25-G 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.



- 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



Size



LCC Package



IEEE 802.11 a/b/g/n/ac Standards



SDIO Interface





Bluetooth 5.0

Version: 1.7 | Status: Released

## **Quectel FC20 Series**

| Regin         Global         Global           Function         WiFi 2.4 GHz + 5 GHz, Bluetooth 5.0         WiFi 2.4 GHz           WLAN         IFEE 80.11.8 //J/n/sc         IFEE 80.11.8 //J           Bluetooth         Bluetooth 5.0         SPSC, 075K, CK, 15.0AM, 640AM, 2560AM         SPSC, 075K, CK, 15.0AM, 640AM, 2560AM           Modulation Mode         BPSC, 075K, CK, 15.0AM, 640AM, 2560AM         SPSC, 075K, CK, 15.0AM, 640AM, 2560AM           Operating Temperature Bange         -0         Toto +85 °C           02.11a         S4 Mbp         -           802.11a         S4 MbpS         S4 MbpS           802.11a         S4 MbpS         S4 MbpS           802.11a         S4 MbpS         -           802.11a         S4 MbpS         -           802.11a         S4 MbpS         -           802.11a         S4 MbpS         -           801.30         X1         -           801.30         X1         -           802.11a         S4 MbpS         -           801.30         X1         -           801.30         X1         -           801.30         X1         -           802.11a         X1         -           802.11a         <   | Wi-Fi&Bluetooth             | FC20   | FC20-N  |
|---|-----------------------------|--|---|
| WANIEEE 802.11 a/b/g/n/acIEEE 802.11 b/g/nBluetooth 5.0-Buetooth 5.0PSK, QPSK, CCK, 18QAM, 64QAM, 25GQAMPSK, QPSK, CCK, 18QAM, 64QAM, 25GQAMVorture Bange-Operating Temperature Bange-0''Cto As 5''CBo2.11ac54 Mbps-0''Cto As 5''CB02.11a54 Mbps-0''Cto As 5''CB02.11a11 Mbps11 MbpsB02.11a54 Mbps54 MbpsB02.11a130 Mbps150 MbpsB02.11a433 Mbps-B02.11a43 Mbps-B02.11a43 Mbps-B02.11a43 Mbps-B02.11a43 Mbps-B02.11a43 Mbps-B104tooth AMPB114tooth AMPB124tooth AMP <td< td=""><td>Region</td><td>Global</td><td>Global</td></td<>   | Region                      | Global   | Global  |
| IdentifiedBluetooth S.D InformationModulation ModeBPSK, QPSK, CCK, 16QAM, 64QAM, 25GQAMBPSK, QPSK, CCK, 16QAM, 64QAMTemperature Barge-40°C to +85°C- 40°C to +85°COperating Temperature Range-40°C to +85°C- 40°C to +85°CSolar Brite (Max)54 Mbps- 1 Mbps802.11a54 Mbps- 1 Mbps802.11b11 Mbps1 Mbps802.11a54 Mbps- 50 Mbps802.11a30 Mbps150 Mbps802.11a433 Mbps- 2 Mbps802.11a24 Mbps- 2 Mbps802.11a10 Mbps- 2 Mbps802.11a21 Mbps- 2 Mbps802.11a11 Mbps- 2 Mbps802.11a12 Mbps- 2 Mbps802.11a12 Mbps- 2 Mbps802.11a21 Mbps- 2 Mbps802.11a12 Mbps  | Function                    | Wi-Fi 2.4 GHz + 5 GHz; Bluetooth 5.0   | Wi-Fi 2.4 GHz                                       |
| Modulation Mode         BPSK, QPSK, CCK, 16QAM, 64QAM, 25SQAM         BPSK, QPSK, CCK, 16QAM, 64QAM, 64QAM, 25SQAM           Temperature Range         -40°C to +85°C         -40°C to +85°C           Data         -40°C to +85°C         -40°C to +85°C           Se2.11a         54 Mbps         11 Mbps           S62.11a         11 Mbps         11 Mbps           S62.11a         54 Mbps         54 Mbps           S62.11a         54 Mbps         54 Mbps           S62.11a         54 Mbps         54 Mbps           S62.11a         54 Mbps         56 Mbps           S62.11a         54 Mbps         -           S610.30         54 Mbps         -   | WLAN                        | IEEE 802.11 a/b/g/n/ac   | IEEE 802.11 b/g/n                                   |
| Temperature Range-40 °C to +85 °C-40 °C to +85 °COperating Temperature Range-40 °C to +85 °C-40 °C to +85 °CData Rate (Max.)54 Mbps-802.11n11 Mbps11 Mbps802.11g54 Mbps54 Mbps802.11g150 Mbps150 Mbps802.11a150 Mbps150 Mbps802.11a433 Mbps-802.11a433 Mbps-802.11a150 Mbps10 Mbps802.11a433 Mbps-802.11a150 Mbps-802.11a433 Mbps-802.11a10 Mbps-802.11a10 Mbps-80.130×1-80.130×1-80.130×1-80.140×1-80.141×1-80.150×1-80.150×1-80.161×1-80.171×1-80.171×1-80.181×1-80.191×1-80.191×1-80.191×1-80.191×1-80.191×1-80.191×1-80.191×1-80.191×1-80.191×1-80.191×1-80.191×1-80.192×1-80.193×1-80.194×1-80.194 <t< td=""><td>Bluetooth</td><td>Bluetooth 5.0</td><td>-</td></t<>   | Bluetooth                   | Bluetooth 5.0  | -   |
| Operating Temperature Range-40 °C to +85 °C-40 °C to +85 °CData Rate (Max.)-802.11a54 Mbps-802.11b11 Mbps11 Mbps802.11c10 Mbps11 Mbps802.11c10 Mbps54 Mbps802.11c10 Mbps10 Mbps802.11c10 Mbps-802.11c13 Mbps-802.11c14 Mbps-802.11c13 Mbps-802.11c14 Mbps802.11c14 Mbps-802.11c14 Mbps-802.11c14 Mbps-802.11c14 Mbps-802.11c14 Mbps-802.11c14 Mbps-802.11c14 Mbps-802.11c14 Mbps-802.11c14 Mbps-802.11c14 Mbps   | Modulation Mode             | BPSK, QPSK, CCK, 16QAM, 64QAM, 256QAM  | BPSK, QPSK, CCK, 16QAM, 64QAM                       |
| Data Rate (Max.)Data Rate (Max.)802.11a54 Mbps-802.11b11 Mbps11 Mbps802.11g54 Mbps54 Mbps802.11g50 Mbps150 Mbps802.11a150 Mbps150 Mbps802.11ac433 Mbps-802.11ac434 Mbps-802.11ac434 Mbps-802.11ac434 Mbps-802.11ac434 Mbps-802.11ac434 Mbps-802.11ac41 Mbps-802.11ac×1-802.11ac×1-802.11ac×1-802.11ac×1-802.11ac×1-802.11ac×1-802.11ac×1-802.11ac×1-802.11ac×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-802.11bc×1-803   | Temperature Range           |  |   |
| 862.11a54 Mbps-802.11b11 Mbps11 Mbps802.11g54 Mbps54 Mbps802.11g150 Mbps150 Mbps802.11a150 Mbps150 Mbps802.11ac433 Mbps-802.11ac434 Mbps-802.11ac44 Mbps-802.11ac44 Mbps-802.11ac14 Mbps-802.11ac14 Mbps-802.11b×1-802.11c×1-802.11ac×1-802.11b×1-802.11  | Operating Temperature Range | -40 °C to +85 °C   | -40 °C to +85 °C                                    |
| 802.11b11 Mbps11 Mbps802.11q54 Mbps54 Mbps802.11a150 Mbps150 Mbps802.11a433 Mbps-801.11a433 Mbps-801.11a24 Mbps-801.01 AMP24 Mbps-901.01 AMP1-801.01 AMP<   | Data Rate (Max.)            |  |   |
| 82.11g54 Mbps54 Mbps802.11g150 Mbps150 Mbps802.11a433 Mbps-802.11a433 Mbps-802.11a24 Mbps-802.11a24 Mbps-8010.3.0×1×181_UART×1-9CM×1  | 802.11a                     | 54 Mbps  | -   |
| 802.11a150 Mbps150 Mbps802.11ac433 Mbps.802.11ac434 Mbps.81uetooth AMP24 Mbps.81uetooth AMP1.8500 3.0×1 a.8T_UART×1 a.8T_UART×1 a.800 S.0×1 a.800 S.0×1 a.800 S.0×1 a.800 S.0×1 a.800 S.0×1 a.800 S.0800 S.0800 S.0900 S.0 S.0900 S.0 S.0 M B.1 S.0 M.0 M.0 M.0 M.0 M.0 M.0 M.0 M.0 M.0 M   | 802.11b                     | 11 Mbps  | 11 Mbps   |
| 802.11ac433 Mbps  | 802.11g                     | 54 Mbps  | 54 Mbps   |
| Bluetooth AMP24 MbpsInterfacesSDI0 3.0×1BT_UART×1PCM×1VFF/Bluetooth Antenna×1×1×1Electrical FoaturesPower Supply Voltage3.14-3.46 V, Typ. 3.3 VJ/O Power Supply Voltage1.71-3.46 V, Typ. 1.8/3.3 VPower Consumption (Typ.)Ide (Wi-Fi is enabled without any device<br>connected):<br>  | 802.11n                     | 150 Mbps   | 150 Mbps  |
| Interfaces         SDI0 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       3.14-3.46 V, Typ. 3.3 V         I/O Power Supply Voltage       3.14-3.46 V, Typ. 1.8/3.3 V       1.71-3.46 V, Typ. 1.8/3.3 V         I/O Power Supply Voltage       1.71-3.46 V, Typ. 1.8/3.3 V       1.71-3.46 V, Typ. 1.8/3.3 V         I/O Power Supply Voltage       1.71-3.46 V, Typ. 1.8/3.3 V       0FF State (Wi-Fi is disabled):<br>• 2 µ.A @ 3.3 V WLAN power supply<br>• 554 µA @ 1.8 V I/O pins power supply       0FF State (Wi-Fi is disabled):<br>• 2 µ.A @ 3.3 V WLAN power supply<br>• 554 µA @ 1.8 V I/O pins power supply         Power Consumption (Typ.)       Ide (Wi-Fi is enabel without any device connected):<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply  | 802.11ac                    | 433 Mbps   | -   |
| SDI0 3.0×1×1BT_UART×1-BT_UART×1-PCM×1×1Wi-Fi/Bluetooth Antenna×1×1Etectrical Features-Power Supply Voltage3.14-3.46 V, Typ. 3.3 V3.14-3.46 V, Typ. 3.3 VI/O Power Supply Voltage1.71-3.46 V, Typ. 1.8/3.3 V1.71-3.46 V, Typ. 1.8/3.3 VPower Supply Voltage1.71-3.46 V, Typ. 1.8/3.3 V1.71-3.46 V, Typ. 1.8/3.3 VPower Supply Voltage1.71-3.46 V, Typ. 1.8/3.3 V1.71-3.46 V, Typ. 1.8/3.3 VI/O Power Supply Voltage1.71-3.46 V, Typ. 1.8/3.3 V1.71-3.46 V, Typ. 1.8/3.3 VPower Consumption (Typ.)OFF State (Wi-Fi is disabled):<br>• 2 µ.A @ 3.3 V WLAN power supply<br>• 554 µ.A @ 1.8 V I/O pins power supply<br>• 554 µ.A @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 0.   | Bluetooth AMP               | 24 Mbps  | -   |
| BT_UART×1-BT_UART×1-PCM×1-Wi-Fi/Bluetooth Antenna×1×1Etertrical Features-Power Supply Voltage3.14-3.46 V, Typ. 3.3 V3.14-3.46 V, Typ. 3.3 VI/O Power Supply Voltage1.71-3.46 V, Typ. 1.8/3.3 V1.71-3.46 V, Typ. 1.8/3.3 VPower Consumption (Typ.)OFF State (Wi-Fi is disabled):<br>• 2 µA @ 3.3 V WLAN power supply<br>• 554 µA @ 1.8 V I/O pins power supply<br>• 554 µA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supplyProtect Struct<br>Power Struct<br>Power Struct<br>Power Stru  | Interfaces                  |  |   |
| PCM×1-PCM×1-Wi-Fi/Bluetooth Antenna×1Electrical Features-Power Supply Voltage3.14-3.46 V, Typ. 3.3 V3.14-3.46 V, Typ. 3.3 VPower Supply Voltage1.71-3.46 V, Typ. 1.8/3.3 V1.71-3.46 V, Typ. 1.8/3.3 VPower Supply Voltage1.71-3.46 V, Typ. 1.8/3.3 V1.71-3.46 V, Typ. 1.8/3.3 VPower Consumption (Typ.)OFF State (Wi-Fi is disabled):<br>• 5.54 µA @ 1.8 V I/O pins power supply<br>• 5.54 µA @ 1.8 V I/O pins power supply<br>• 5.54 µA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supplyPower Consumption ModeWPA3WPA3AP (Max. Access Points)1616Operating ModeApprox. 0.81 gApprox. 0.81 gVeightApprox. 0.81 gEurope: CE<br>Ganada: IC<br>Canada: IC<br>South Korea: KC<br>Brazii: Anatel<br>Japan: JATE/ TELEC<br>Australia/New Zealand: RCMEurope: CE<br>America: FCC<br>Canada: IC<br>Canada: IC<br>America: FCC<br>Canada: IC<br>Australia/New Zealand: RCMEurope: CE<br>America: FCC<br>Canada: IC<br>America: FCC<br>Canada: IC<br>America: FCC<br>Canada: IC<br>Australia/New Zealand: RCMEurope: CE<br>America: FCC<br>Canada: IC<br>America: FCC<br>Canada: IC<br>America: FCC<br>Canada: IC<br>America: FCC<br>Canada: IC<br>America: FCC<br>Canada: IC<br>Am  | SDIO 3.0                    | ×1   | × 1   |
| Wi-Fi/Bluetooth Antenna×1×1Electrical FeaturesPower Supply Voltage3.143.46 V, Typ. 3.3 V3.143.46 V, Typ. 3.3 VI/O Power Supply Voltage1.713.46 V, Typ. 1.8/3.3 V1.713.46 V, Typ. 1.8/3.3 VI/O Power Supply Voltage.713.46 V, Typ. 1.8/3.3 V.713.46 V, Typ. 1.8/3.3 VPower Consumption (Typ.)OFF State (Wi-Fi is disabled):<br>2 µ.A @ 3.3 V WLAN power supply<br>• 554 µ.A @ 1.8 V I/O pins power supply<br>• 554 µ.A @ 1.8 V I/O pins power supply<br>• 554 µ.A @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I  | BT_UART                     | × 1  | -   |
| Electrical Features         Power Supply Voltage       3.14–3.46 V, Typ. 3.3 V       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       1.71–3.46 V, Typ. 1.8/3.3 V         Power Supply Voltage       1.71–3.46 V, Typ. 1.8/3.3 V       1.71–3.46 V, Typ. 1.8/3.3 V         Power Supply Voltage       1.71–3.46 V, Typ. 1.8/3.3 V       0FF state (Wi-Fi is disabled): <ul> <li>2 µA @ 3.3 V WLAN power supply</li> <li>555 µA @ 1.8 V I/O pins power supply</li> <li>555 µA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 3.3 V WLAN power supply</li> <li>65 mA @ 3.3 V WLAN power supply</li> <li>65 mA @ 3.3 V WLAN power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li> <li>65 mA @ 1.8 V I/O pins power supply</li></ul>  | PCM                         | ×1   |   |
| Power Supply Voltage3.14–3.46 V, Typ. 3.3 V3.14–3.46 V, Typ. 3.3 VI/O Power Supply Voltage1.71–3.46 V, Typ. 1.8/3.3 V1.71–3.46 V, Typ. 1.8/3.3 VI/O Power Supply Voltage1.71–3.46 V, Typ. 1.8/3.3 V1.71–3.46 V, Typ. 1.8/3.3 VI/O Power Consumption (Typ.)OFF State (Wi-Fi is disabled):<br>• 554 µA @ 1.8 V I/O pins power supply<br>• 554 µA @ 1.8 V I/O pins power supply<br>• 554 µA @ 1.8 V I/O pins power supply<br>• 65 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply   | Wi-Fi/Bluetooth Antenna     | ×1   | ×1  |
| I/O Power Supply Voltage1.71–3.46 V, Typ. 1.8/3.3 V1.71–3.46 V, Typ. 1.8/3.3 VI/O Power Consumption (Typ.)OFF State (Wi-Fi is disabled):<br>• 2 μA @ 3.3 V WLAN power supply<br>• 554 μA @ 1.8 V I/O pins power supply<br>• 554 μA @ 1.8 V I/O pins power supply<br>• 554 μA @ 1.8 V I/O pins power supply<br>• 554 μA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>  | Electrical Features         |  |   |
| Power Consumption (Typ.)OFF State (Wi-Fi is disabled):<br>  | Power Supply Voltage        | 3.14–3.46 V, Typ. 3.3 V  | 3.14–3.46 V, Typ. 3.3 V                             |
| Power Consumption (Typ.)2 µA @ 3.3 V WLAN power supply<br>554 µA @ 1.8 V I/O pins power supply<br>554 µA @ 1.8 V I/O pins power supply<br>6554 µA @ 1.8 V I/O pins power supply<br>66 mA @ 3.3 V WLAN power supply<br>66 mA @ 3.3 V WLAN power supply<br>6.5 mA @ 1.8 V I/O pins power supply<br>6.5  | I/O Power Supply Voltage    | 1.71–3.46 V, Typ. 1.8/3.3 V  | 1.71–3.46 V, Typ. 1.8/3.3 V                         |
| connected):<br>• 66 mA @ 3.3 V WLAN power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supply<br>• 6.5 mA @ 1.8 V I/O pins power supplyImage: Simple Si | Power Consumption (Typ.)    | <ul> <li>2 μA @ 3.3 V WLAN power supply</li> <li>554 μA @ 1.8 V I/O pins power supply</li> </ul>     | <ul> <li>2 μA @ 3.3 V WLAN power supply</li> </ul>  |
| AP (Max. Access Points)1616Operating ModeAP/STAAP/STADimension16.6 mm × 13.0 mm × 2.05 mm16.6 mm × 13.0 mm × 2.05 mmWeightApprox. 0.81 gApprox. 0.81 gCertificationsEurope: CE<br>America: FCC<br>Canada: IC<br>China: SRRC<br>South Korea: KC<br>Brazil: Anatel<br>Japan: JATE/TELEC<br>Australia/New Zealand: RCMEurope: CE<br>Brazil: Anatel<br>Japan: TELEC   |                             | connected):<br>66 mA @ 3.3 V WLAN power supply   | <ul> <li>66 mA @ 3.3 V WLAN power supply</li> </ul> |
| Operating ModeAP/STAAP/STADimension16.6 mm × 13.0 mm × 2.05 mm16.6 mm × 13.0 mm × 2.05 mmWeightApprox. 0.81 gApprox. 0.81 gCertificationsEurope: CE<br>America: FCC<br>Canada: IC<br>China: SRRC<br>  | Encryption Mode             | WPA3   | WPA3  |
| Dimension16.6 mm × 13.0 mm × 2.05 mm16.6 mm × 13.0 mm × 2.05 mmWeightApprox. 0.81 gApprox. 0.81 gCertificationsEurope: CE<br>America: FCC<br>Canada: IC<br>China: SRRC<br>South Korea: KC<br>Brazil: Anatel<br>Japan: JATE/ TELEC<br>Australia/New Zealand: RCMEurope: CE<br>Europe: CE<br>Canada: IC<br>Brazil: Anatel<br>Japan: TELEC   | AP (Max. Access Points)     | 16   | 16  |
| Weight       Approx. 0.81 g       Approx. 0.81 g         Certifications       Europe: CE       America: FCC       Europe: CE         Regulatory       Europe: CE       America: FCC       Europe: CE         South Korea: KC       Brazil: Anatel       Brazil: Anatel       Japan: JATE/ TELEC         Japan: JATE/ TELEC       Japan: RCM       CM       CM   | Operating Mode              | AP/STA   | AP/STA  |
| Certifications       Europe: CE         America: FCC       Europe: CE         Canada: IC       America: FCC         China: SRRC       Canada: IC         South Korea: KC       Brazil: Anatel         Brazil: Anatel       Japan: JATE/ TELEC         Japan: JATE/ TELEC       Australia/New Zealand: RCM   | Dimension                   | 16.6 mm × 13.0 mm × 2.05 mm  | 16.6 mm × 13.0 mm × 2.05 mm                         |
| Europe: CE         America: FCC       Europe: CE         Canada: IC       America: FCC         China: SRRC       Canada: IC         South Korea: KC       Brazil: Anatel         Brazil: Anatel       Japan: JATE/ TELEC         Australia/New Zealand: RCM       FCL   | Weight                      | Approx. 0.81 g   | Approx. 0.81 g                                      |
| America: FCCEurope: CECanada: ICAmerica: FCCChina: SRCCCanada: ICSouth Korea: KCGanada: ICBrazil: AnatelBrazil: AnatelJapan: JATE/ TELECJapan: TELECAustralia/New Zealand: RCMFeasiline Comments  | Certifications              |  |   |
| Others RoHS RoHS  | Regulatory                  | America: FCC<br>Canada: IC<br>China: SRRC<br>South Korea: KC<br>Brazil: Anatel<br>Japan: JATE/ TELEC | America: FCC<br>Canada: IC<br>Brazil: Anatel        |
|   | Others                      | RoHS   | RoHS  |



## **Quectel FC20 Series**

| Wi-Fi&Bluetooth |                      | FC20                         | FC20-N                       |
|-----------------|----------------------|------------------------------|------------------------------|
| RF Performa     | ance                 |                              |                              |
|                 |                      | Receiving Sensitivity (Typ.) | Receiving Sensitivity (Typ.) |
| 2.4 GHz         | 802.11b/1 Mbps       | -92 dBm                      | -92 dBm                      |
|                 | 802.11b/11 Mbps      | -85 dBm                      | -85 dBm                      |
|                 | 802.11g/6 Mbps       | -88 dBm                      | -88 dBm                      |
|                 | 802.11g/54 Mbps      | -72 dBm                      | -72 dBm                      |
|                 | 802.11n/HT20 MCS 0   | -88.5 dBm                    | -88.5 dBm                    |
|                 | 802.11n/HT20 MCS 7   | -70 dBm                      | -70 dBm                      |
|                 | 802.11n/HT40 MCS 0   | -85 dBm                      | -85 dBm                      |
|                 | 802.11n/HT40 MCS 7   | -67 dBm                      | -67 dBm                      |
|                 | 802.11a/6 Mbps       | -91 dBm                      | -                            |
|                 | 802.11a/54 Mbps      | -75 dBm                      | -                            |
|                 | 802.11n/HT20 MCS 0   | -90 dBm                      | -                            |
|                 | 802.11n/HT20 MCS 7   | -71 dBm                      | -                            |
|                 | 802.11n/HT40 MCS 0   | -88 dBm                      | -                            |
| 5 GHz           | 802.11n/HT40 MCS 7   | -69 dBm                      | -                            |
|                 | 802.11ac/VHT20 MCS 0 | -91 dBm                      | -                            |
|                 | 802.11ac/VHT20 MCS 8 | -67 dBm                      | -                            |
|                 | 802.11ac/VHT40 MCS 0 | -88 dBm                      | -                            |
|                 | 802.11ac/VHT40 MCS 9 | -62 dBm                      | -                            |
|                 | 802.11ac/VHT80 MCS 0 | -85 dBm                      | -                            |
|                 | 802.11ac/VHT80 MCS 9 | -59 dBm                      | -                            |
|                 |                      | Transmitting Power (Typ.)    | Transmitting Power (Typ.)    |
|                 | 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                     |
| 2.4 GHz         | 802.11g/54 Mbps      | 15 dBm                       | 15 dBm                       |
|                 | 802.11n/HT20 MCS 0   | 15.5 dBm                     | 15.5 dBm                     |
|                 | 802.11n/HT20 MCS 7   | 14.5 dBm                     | 14.5 dBm                     |
|                 | 802.11n/HT40 MCS 0   | 15 dBm                       | 15 dBm                       |
|                 | 802.11n/HT40 MCS 7   | 13 dBm                       | 13 dBm                       |
|                 | 802.11a/6 Mbps       | 14.5 dBm                     | -                            |
|                 | 802.11a/54 Mbps      | 12.5 dBm                     | -                            |
|                 | 802.11n/HT20 MCS 0   | 13.5 dBm                     | -                            |
|                 | 802.11n/HT20 MCS 7   | 11.5 dBm                     | -                            |
|                 | 802.11n/HT40 MCS 0   | 12 dBm                       | -                            |
| 5 GHz           | 802.11n/HT40 MCS 7   | 10.5 dBm                     | -                            |
|                 | 802.11ac/VHT20 MCS 0 | 13.5 dBm                     | -                            |
|                 | 802.11ac/VHT20 MCS 8 | 11.5 dBm                     | -                            |
|                 | 802.11ac/VHT40 MCS 0 | 12 dBm                       | -                            |
|                 | 802.11ac/VHT40 MCS 9 | 10.5 dBm                     | -                            |
|                 | 802.11ac/VHT80 MCS 0 | 11.5 dBm                     | -                            |
|                 | 802.11ac/VHT80 MCS 9 | 10.5 dBm                     | -                            |

