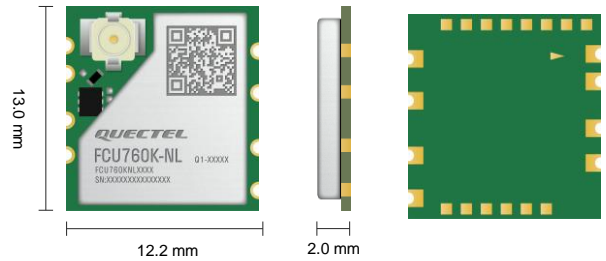


Quectel FCU760K-NL

Wi-Fi 6 & BLE 5.4 Module Ultra-compact LCC Package



FCU760K-NL is a high-performance Wi-Fi 6 and BLE 5.4 LCC package module launched by Quectel, which can be used for WLAN and Bluetooth connections. The module complies with IEEE 802.11a/b/g/n/ac/ax protocol, supporting up to 11ax MCS 11 rate at 40 MHz channel, and the transmission rate can reach 286.8 Mbps. FCU760K-NL adopts reliable USB 2.0 interface design and supports WLAN high speed transmission.

With an ultra-compact size of 13.0 mm × 12.2 mm × 2.0 mm, FCU760K-NL optimizes the size and cost for end-products, which fully meets the demands of size-sensitive applications.

Surface-mount Technology (SMT) makes FCU760K-NL an ideal solution for durable and rugged designs. The low profile and small size of LCC package ensure that FCU760K-NL can be easily embedded into size-constrained applications and provide reliable connectivity with these applications. The advanced package, integrated shielding cover and the laser-engraved label with better heat dissipation and indelible markings allow for large-scale automated manufacturing that has strict requirements on cost and efficiency. Coupled with its compact size and wide operating temperature range, FCU760K-NL can meet various needs of commercial and industrial applications.



Key Features

- ✓ 2.4 GHz/5 GHz Wi-Fi bands and BLE 5.4
- ✓ 1st generation RF coaxial connector, pin antenna interface (optional)
- ✓ USB 2.0 interface that supports higher data transmission rate and enables lower power consumption
- ✓ LCC package, convenient for welding
- ✓ Faster time-to-market: simple design minimizes design-in time and development efforts
- ✓ Wide operating temperature range: -20 °C to +80 °C



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



BLE 5.4



LCC Package



USB 2.0
Interface



Operating Temperature
Range: -20 °C to +80 °C



Ultra-compact
Size

Quectel FCU760K-NL

| Wi-Fi 6 & BLE 5.4 | FCU760K-NL |
|-----------------------------------|--|
| WLAN Protocol | IEEE 802.11a/b/g/n/ac/ax |
| Wi-Fi Frequency Band | 2.4 GHz/5 GHz |
| Wi-Fi Antenna | 1 × 1 |
| Wi-Fi Modulation Mode | DSSS/CCK/BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM |
| 2.4 GHz Channel Bandwidth | 20 MHz/40 MHz |
| 5 GHz Channel Bandwidth | 20 MHz/40 MHz |
| Encryption Mode | WEP/WPA/WPA2/WPA3-SAE |
| Wi-Fi Operating Mode | AP/STA |
| Bluetooth Protocol | BLE 5.4 |
| Dimensions | 13.0 mm × 12.2 mm × 2.0 mm |
| Weight | Approx. 0.52 g |
| Temperature Range | |
| Operating Temperature | -20 °C to +80 °C |
| Storage Temperature | -25 °C to +90 °C |
| Physical Rate (Max.) | |
| 802.11b | 11 Mbps |
| 802.11a/g | 54 Mbps |
| 802.11n | 150 Mbps |
| 802.11ac | 200 Mbps |
| 802.11ax | 286.8 Mbps |
| Interfaces | |
| USB 2.0 | × 1 (for Wi-Fi/Bluetooth) |
| Wi-Fi/Bluetooth Antenna Interface | × 1 (1 st generation RF coaxial connector, pin antenna) (optional) |
| Electrical Features | |
| Power Supply Voltage | VBAT: 3.0–3.6 V, Typ. 3.3 V |
| Power Consumption | Max. current at Tx mode: 509.20 mA @ VBAT |
| Certifications | |
| Regulatory | China: SRRC Europe: CE* America: FCC* Canada: IC* |

NOTE:

*: Under planning.

Quectel FCU760K-NL

Wi-Fi 6 & BLE 5.4 FCU760K-NL

Wi-Fi Performance

| | | Transmit Power (Typ.) | Receiver Sensitivity (Typ.) |
|---------|----------------------|-----------------------|-----------------------------|
| 2.4 GHz | 802.11b/1 Mbps | 18 dBm | -94 dBm |
| | 802.11b/11 Mbps | 18 dBm | -87 dBm |
| | 802.11g/6 Mbps | 17 dBm | -92 dBm |
| | 802.11g/54 Mbps | 15 dBm | -76 dBm |
| | 802.11n/HT20 MCS 0 | 17 dBm | -92 dBm |
| | 802.11n/HT20 MCS 7 | 15 dBm | -74 dBm |
| | 802.11n/HT40 MCS 0 | 17 dBm | -88 dBm |
| | 802.11n/HT40 MCS 7 | 15 dBm | -70 dBm |
| | 802.11ax/HE20 MCS 0 | 17 dBm | -91 dBm |
| | 802.11ax/HE20 MCS 11 | 13 dBm | -64 dBm |
| | 802.11ax/HE40 MCS 0 | 17 dBm | -90 dBm |
| | 802.11ax/HE40 MCS 11 | 13 dBm | -59 dBm |
| 5 GHz | 802.11a/6 Mbps | 17 dBm | -93 dBm |
| | 802.11a/54 Mbps | 15 dBm | -76 dBm |
| | 802.11n/HT20 MCS 0 | 17 dBm | -92 dBm |
| | 802.11n/HT20 MCS 7 | 15 dBm | -74 dBm |
| | 802.11n/HT40 MCS 0 | 16 dBm | -90 dBm |
| | 802.11n/HT40 MCS 7 | 14 dBm | -71 dBm |
| | 802.11ac/VHT20 MCS 0 | 16 dBm | -93 dBm |
| | 802.11ac/VHT20 MCS 8 | 14 dBm | -70 dBm |
| | 802.11ac/VHT40 MCS 0 | 16 dBm | -90 dBm |
| | 802.11ac/VHT40 MCS 9 | 13 dBm | -65 dBm |
| | 802.11ax/HE20 MCS 0 | 16 dBm | -93 dBm |
| | 802.11ax/HE20 MCS 11 | 12 dBm | -65 dBm |
| | 802.11ax/HE40 MCS 0 | 16 dBm | -90 dBm |
| | 802.11ax/HE40 MCS 11 | 12 dBm | -61 dBm |

Bluetooth Performance

| | | Transmit Power (Typ.) | Receiver Sensitivity (Typ.) |
|--------------|--|-----------------------|-----------------------------|
| BLE (1 Mbps) | | 4.5 dBm | -89 dBm |
| BLE (2 Mbps) | | 4.5 dBm | -89 dBm |

| Model | Ordering Code | Antenna | Coexistence with Cellular Module | Development Board (Only for Debugging) |
|------------|---------------|-----------------------|----------------------------------|--|
| FCU760K-NL | FCU760KNLABMD | Pin antenna interface | - | FCU760KNLABTA |