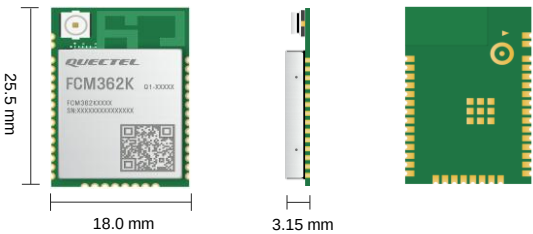


# Quectel FCM362K

## Wi-Fi 6 & Bluetooth 5.2 Module Compact LCC Package



FCM362K is a high-performance and low-power consumption MCU Wi-Fi and Bluetooth module launched by Quectel. It boasts a Cortex-M4F processor with a frequency of up to 240 MHz and supports IEEE 802.11a/b/g/n/ac/ax protocol and Bluetooth 5.2. The module features built-in 992 KB SRAM and 4 MB flash, ensuring efficient performance. In addition, it complies with WEP/WPA-PSK/WPA2 security standards, providing AES/hash hardware encryption for added security.

FCM362K is in an LCC form factor with an ultra-compact size of 25.5 mm × 18.0 mm × 3.15 mm, which optimizes the size and cost for end-products and is compatible with diverse designs.

In QuecOpen® solution, FCM362K supports up to 23 GPIOs for UART, SPI\*, I2C\*, I2S\*, PWM\*, ADC\*, USB\*, SDIO, PCM\* and other interfaces, providing flexibility and versatility for a range of applications, especially in smart homes and industrial IoT scenarios. The ultra-low power consumption design and USB\* and SDIO interfaces make it especially suitable for smart door locks and doorbells, IPCs, dash camera and other IoT smart devices that require a lower power consumption.



### Key Features

- ✓ Wi-Fi 6 module, 2.4 GHz/ 5 GHz frequency bands and Bluetooth 5.2
- ✓ 1<sup>st</sup> generation RF coaxial connector, pin antenna interface, PCB antenna (optional)
- ✓ 1024QAM for uplink
- ✓ 802.11ax: HE20, HE40
- ✓ Large memory, 992 KB SRAM and 4 MB flash
- ✓ 23 GPIOs for UART, ADC\*, SPI\*, I2C\*, I2S\*, PWM\*, PCM\*, SDIO and USB\* functions in QuecOpen® solution



| Wi-Fi 6 & Bluetooth 5.2     |                         | FCM362K                                                                                              |                             |
|-----------------------------|-------------------------|------------------------------------------------------------------------------------------------------|-----------------------------|
| WLAN Protocol               |                         | IEEE 802.11a/b/g/n/ac/ax                                                                             |                             |
| Wi-Fi Frequency Band        |                         | 2.4 GHz/ 5 GHz                                                                                       |                             |
| Wi-Fi Modulation Mode       |                         | BPSK/ QPSK/ CCK/ 16QAM/ 64QAM/ 256QAM/ 1024QAM                                                       |                             |
| Wi-Fi Operating Mode        |                         | AP/ STA                                                                                              |                             |
| Bluetooth Protocol          |                         | Bluetooth 5.2 (BR*/EDR* + BLE)                                                                       |                             |
| Encryption Mode             |                         | WEP/ WPA-PSK/ WPA2                                                                                   |                             |
| Internet Protocol           |                         | IPv6/ IPv4                                                                                           |                             |
| Kernel                      |                         | Cortex-M4F                                                                                           |                             |
| SRAM                        |                         | 992 KB                                                                                               |                             |
| Flash                       |                         | 4 MB                                                                                                 |                             |
| Dimensions                  |                         | 25.5 mm × 18.0 mm × 3.15 mm                                                                          |                             |
| Weight                      |                         | Approx. 1.41 g                                                                                       |                             |
| Temperature Range ①         |                         |                                                                                                      |                             |
| Operating Temperature Range |                         | -20 °C to +80 °C                                                                                     |                             |
| Extended Temperature Range  |                         | -40 °C to +85 °C                                                                                     |                             |
| Storage Temperature Range   |                         | -45 °C to +95 °C                                                                                     |                             |
| Certifications              |                         |                                                                                                      |                             |
| Regulatory                  |                         | Europe: CE<br>America: FCC<br>Canada: IC<br>China: SRRC<br>Australia/New Zealand: RCM                |                             |
| Interfaces                  |                         |                                                                                                      |                             |
| Antenna Interface           |                         | × 1 (1 <sup>st</sup> generation RF coaxial connector, pin antenna interface, PCB antenna) (optional) |                             |
| Other Interfaces ②          |                         | UART/ SPI*/ I2C*/ I2S*/ PWM*/ ADC*/ USB*/ SDIO/ PCM*, etc.                                           |                             |
| Supply Voltage              |                         |                                                                                                      |                             |
| Power Supply Voltage        |                         | 3.0–3.6 V, Typ. 3.3 V                                                                                |                             |
| Wi-Fi Performance           |                         |                                                                                                      |                             |
|                             |                         | Transmit Power (Typ.)                                                                                | Receiver Sensitivity (Typ.) |
| 2.4 GHz                     | 802.11b @ 1 Mbps        | 18 dBm                                                                                               | -99 dBm                     |
|                             | 802.11b @ 11 Mbps       | 18 dBm                                                                                               | -90 dBm                     |
|                             | 802.11g @ 6 Mbps        | 18 dBm                                                                                               | -93.5 dBm                   |
|                             | 802.11g @ 54 Mbps       | 15 dBm                                                                                               | -78 dBm                     |
|                             | 802.11n, HT20 @ MCS 0   | 18 dBm                                                                                               | -95 dBm                     |
|                             | 802.11n, HT20 @ MCS 7   | 15 dBm                                                                                               | -76.5 dBm                   |
|                             | 802.11n, HT40 @ MCS 0   | 18 dBm                                                                                               | -91.5 dBm                   |
|                             | 802.11n, HT40 @ MCS 7   | 15 dBm                                                                                               | -73 dBm                     |
|                             | 802.11ax, HE20 @ MCS 0  | 18 dBm                                                                                               | -94 dBm                     |
|                             | 802.11ax, HE20 @ MCS 11 | 13 dBm                                                                                               | -67 dBm                     |
|                             | 802.11ax, HE40 @ MCS 0  | 18 dBm                                                                                               | -92 dBm                     |
|                             | 802.11ax, HE40 @ MCS 11 | 13 dBm                                                                                               | -63 dBm                     |
|                             | 802.11b @ 1 Mbps        | 18 dBm                                                                                               | -99 dBm                     |

NOTE:

1. ①: Within the range of -40 °C to -20 °C or +80 °C to +85 °C, the module retains the ability to transfer data without any unrecoverable malfunction. Radio spectrum and radio network remain uninfluenced, whereas the value of one or more parameters, such as Pout, may decrease and fall below the range of IEEE and Bluetooth specified tolerances. When the temperature returns to the normal operating temperature range, the module's indicators will comply with IEEE and Bluetooth specification requirements again.

2. ②: See hardware design manual for details of the module interfaces.

3. \*: Under development.

| Wi-Fi 6 & Bluetooth 5.2 |                         | FCM362K               |                             |
|-------------------------|-------------------------|-----------------------|-----------------------------|
| Wi-Fi Performance       |                         |                       |                             |
|                         |                         | Transmit Power (Typ.) | Receiver Sensitivity (Typ.) |
| 5 GHz                   | 802.11a @ 6 Mbps        | 18 dBm                | -94.5 dBm                   |
|                         | 802.11a @ 54 Mbps       | 15 dBm                | -78.5 dBm                   |
|                         | 802.11n, HT20 @ MCS 0   | 18 dBm                | -94.5 dBm                   |
|                         | 802.11n, HT20 @ MCS 7   | 15 dBm                | -76.5 dBm                   |
|                         | 802.11n, HT40 @ MCS 0   | 18 dBm                | -91.5 dBm                   |
|                         | 802.11n, HT40 @ MCS 7   | 15 dBm                | -73 dBm                     |
|                         | 802.11ac, VHT20 @ MCS 0 | 18 dBm                | -95 dBm                     |
|                         | 802.11ac, VHT20 @ MCS 8 | 14 dBm                | -72 dBm                     |
|                         | 802.11ac, VHT40 @ MCS 0 | 18 dBm                | -91.5 dBm                   |
|                         | 802.11ac, VHT40 @ MCS 9 | 14 dBm                | -67 dBm                     |
|                         | 802.11ax, HE20 @ MCS 0  | 18 dBm                | -95 dBm                     |
|                         | 802.11ax, HE20 @ MCS 11 | 12 dBm                | -67 dBm                     |
|                         | 802.11ax, HE40 @ MCS 0  | 18 dBm                | -94.5 dBm                   |
|                         | 802.11ax, HE40 @ MCS 11 | 12 dBm                | -63 dBm                     |
| Bluetooth Performance   |                         |                       |                             |
|                         |                         | Transmit Power (Typ.) | Receiver Sensitivity (Typ.) |
| BLE (1 Mbps)            |                         | 3.55 dBm              | -90 dBm                     |

| Ordering Code     | Flash | Operating Temperature Range | Antenna                                         | Development Board (Only for Debugging) |
|-------------------|-------|-----------------------------|-------------------------------------------------|----------------------------------------|
| FCM362KAAMD-1X-04 | 4 MB  | -20 °C to +80 °C            | 1 <sup>st</sup> generation RF coaxial connector | FCM362KAATB-1X-04                      |
| FCM362KAAMD-0L-04 | 4 MB  | -20 °C to +80 °C            | Pin antenna interface                           | FCM362KAATB-0L-04                      |
| FCM362KAAMD-0P-04 | 4 MB  | -20 °C to +80 °C            | PCB antenna                                     | FCM362KAATB-0P-04                      |