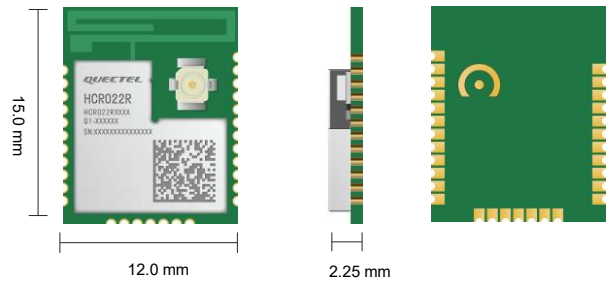


# Quectel HCR022R

## Bluetooth 5.0 Module Compact LCC package



HCR022R is a high-performance dual-mode Bluetooth module launched by Quectel, supporting the Bluetooth 5.0 protocol.

With an ultra-compact size of 15.0 mm × 12.0 mm × 2.25 mm, HCR022R optimizes the size and cost for end-products, which fully meets the demands of size-sensitive applications. It supports three antenna solutions: PCB antenna, RF coaxial connector, and pin antenna interface. This enables compatibility with diverse structural designs.

HCR022R integrates dual-mode Bluetooth technology, combining Bluetooth Low Energy and Classic Bluetooth. It supports UART and PCM interface communication, enables a physical layer rate (PHY) of 2 Mbps and LE Data Length Extension functionality, as well as dual-channel A2DP synchronous connections for the parallel transmission of two audio streams.



## Key Features

- ✓ Bluetooth 5.0, supporting BR/ EDR/ BLE modes
- ✓ PCB antenna, RF coaxial connector, and pin antenna (optional)
- ✓ Operating temperature range: -40 °C to +105 °C
- ✓ Support Bluetooth Low Energy (multi-master and multi-slave mode)



Bluetooth 5.0



Multiple Interfaces



Operating Temperature Range: -40 °C to +105 °C



LCC Package

# Quectel HCR022R

| Bluetooth 5.0         |   | HCR022R                     |  |
|-----------------------|---|-----------------------------|--|
| Bluetooth Protocol    | Bluetooth 5.0   |                             |  |
| Operating Mode        | BR/ EDR/ BLE  |                             |  |
| Dimensions            | 15.0 mm × 12.0 mm × 2.25 mm   |                             |  |
| Weight                | Approx. 0.59 g  |                             |  |
| Temperature Range     |   |                             |  |
| Operating Temperature | -40 °C to +105 °C   |                             |  |
| Storage Temperature   | -45 °C to +110 °C   |                             |  |
| Certification         |   |                             |  |
| Regulatory (Planning) | <b>Europe:</b> CE<br><b>America:</b> FCC<br><b>Canada:</b> IC<br><b>China:</b> SRRC<br><b>Australia/ New Zealand:</b> RCM |                             |  |
| Interfaces            |   |                             |  |
| Antenna Interface     | × 1 (1 <sup>st</sup> generation RF coaxial connector, PCB antenna, pin antenna interface) (optional)                      |                             |  |
| Other Interfaces      | UART/ PCM   |                             |  |
| Electrical Feature    |   |                             |  |
| Power Supply Voltage  | 3.13–3.46 V, Typ. 3.3 V   |                             |  |
| RF Performance        |   |                             |  |
|                       | <b>Transmit Power</b>   | <b>Receiver Sensitivity</b> |  |
| BR (GFSK)             | 7 dBm ±2.5 dB   | -92 dBm ±2.5 dB             |  |
| EDR ( $\pi/4$ -DQPSK) | 5 dBm ±2.5 dB   | -90 dBm ±2.5 dB             |  |
| EDR (8-DPSK)          | 5 dBm ±2.5 dB   | -85 dBm ±2.5 dB             |  |
| BLE (1 Mbps)          | 7 dBm ±2.5 dB   | -95 dBm ±2.5 dB             |  |
| BLE (2 Mbps)          | 7 dBm ±2.5 dB   | -92 dBm ±2.5 dB             |  |

| Ordering Code | Operating Temperature | Antenna   | Development Board (Only for Debugging) |
|---------------|-----------------------|---|--|
| HCR022RAAMD   | -40 °C to +105 °C     | 1 <sup>st</sup> generation RF coaxial connector | HCR022RAAM2                            |
| HCR022RABMD   | -40 °C to +105 °C     | PCB antenna                                     | HCR022RABM2                            |
| HCR022RACMD   | -40 °C to +105 °C     | Pin antenna interface                           | HCR022RACM2                            |