Intelligent Wi-Fi System-on-Chips (SoCs) providing hosted or host-less connectivity for the Internet of Things (IoT).

QCA4002/4 are intelligent Wi-Fi SoCs for the Internet of Things (IoT). This networking platform is designed to enable customers to add full-featured Wi-Fi to a wide variety of products with minimal development effort and cost.

The Qualcomm® QCA4002 is a single-stream (1x1) IEEE 802.11n single-band SoC and Qualcomm® QCA4004 is a dual-band SoC for the IoT. The highly integrated Wi-Fi link includes an energy efficient on-board power amplifier and LNA. For the 2.4GHz band, RF switches are also integrated. Both QCA4002 and QCA4004 are engineered to optimize low system cost by minimizing the number of components required to achieve a reliable Wi-Fi link. In addition, QCA4004 can operate in a pure host-less mode of operation.

The QCA400x SoCs provide two host interfaces for connecting to local system controllers. A UART-based host interface can be used to support rapid development and deployment of simple data streams between the local device and the internet cloud. An SPI secondary interface is available for applications that require more advanced connectivity to the network. It supports a network stack along with SSL security designed to enable full-featured internet connectivity and reliable information exchange in a small, low-cost system. QCA400x SoCs also supports interoperability software framework and services, allowing devices to discover, connect and communicate directly with one another.

### Highlights

#### Power saving Wi-Fi modes extend battery life

QCA400x SoC support power saving modes and Quad SPI flash for faster wake time which minimizes power consumption and extends battery life.

#### On-board wake-up manager to further reduce sleep power

The onboard wake-up manager enables self-wake and sleep management on QCA400x, which can further reduce sleep power (down to microamps).

#### On-chip user development for hostless applications

Developers can write simple applications directly on the QCA4004, eliminating the need for a standalone MCU.

#### Dual-band support for more robust Wi-Fi connection

QCA4004 with dual-band connectivity for both 2.4GHz and 5GHz, is well-suited for applications in interference sensitive environments.
Features

- IEEE 802.11n 1x1 single or dual-band 2.4GHz/5GHz
- Single or dual Rx front end for receive diversity
- Integrated on-chip processor and memory
- Cost optimized RBOM with integrated PA and LNA
- Full security support: WPS, WPA, WPA2 and WEP
- SPI and UART host interface
- Data rates up to 10Mbps
- Integrated IPv4/IPv6 networking stack
- Green Tx power savings and Low power Rx listen
- Low power modes:
  - IEEE Sleep with low power consumption and optimal state transition times
  - Power optimized listen, receive, transmit and associated operating modes
  - Suspend mode (QCA4004 only) for hostless mode of operation with very low power consumption
- Store and recall
- HTTP, DNS services
- Manufacturing tools for configuration and test

Ordering Information

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<td>QCA-4002x-BL3A</td>
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<tr>
<td>QCA4004 SOC</td>
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For additional product information and updates go to: developer.qualcomm.com/get-started/internet-of-things

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