Qualcomm

Qualcomm® QCA4020 Product Development Kit

The QCA4020 Product Development Kit for creating Internet of Things (IoT) products supports key wireless technologies and cloud ecosystems.

The QCA4020 Product Development Kit is engineered to help developers and device manufacturers create unique IoT products that work in concert with a wide variety of other devices and cloud ecosystems. The kit is well suited for developing IoT applications such as smart cities, toys, home control and automation, appliances, networking and home entertainment.

The QCA4020 kit is designed to provide interoperability among diverse IoT devices including most popular wireless standards, protocols and communication frameworks, and ease connectivity to various cloud and application services.

The QCA4020 SoC is a tri-mode intelligent connectivity solution with advanced smart coexistence, integrating numerous wireless communication technologies into a single SoC, a proven approach to address fragmentation in many technology areas. It combines the latest specifications of Wi-Fi®, *Bluetooth*® 5 and 802.15.4 based technologies, including ZigBee® and Thread and has advanced hardware-based security features to help improve device protection in ways not possible with just software.

The QCA4020 SoC comes with pre-integrated support for HomeKit™ and the Open Connectivity Foundation (OCF™) specifications, as well as support for AWS IoT software development kit (SDK) and Microsoft Azure IoT Devices SDK to connect with Azure IoT Hub.
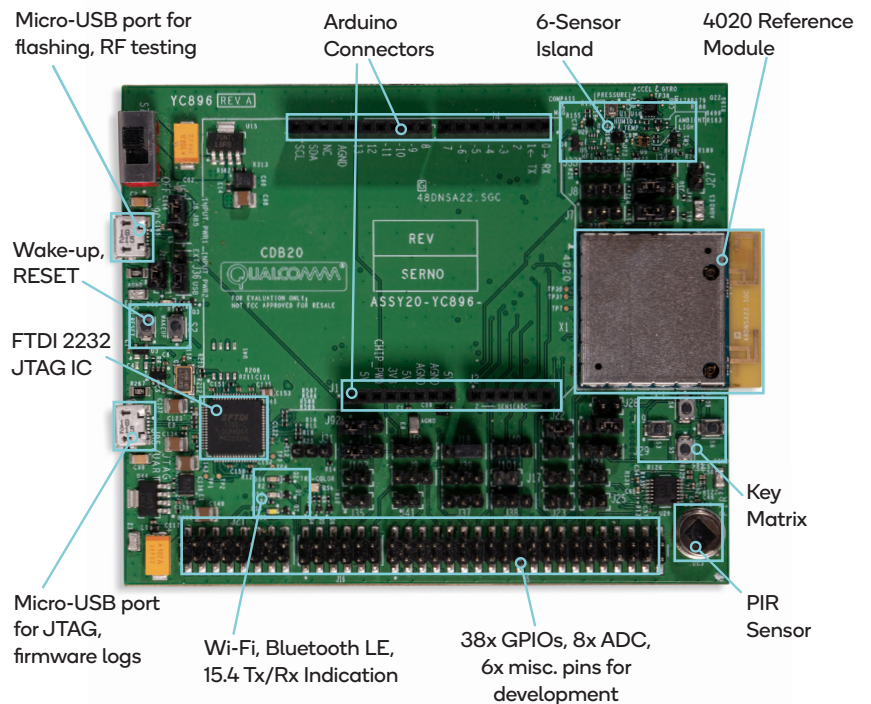
Development Kit Contents

- QCA4020 Reference Module and Development Board
- 2x Micro USB cables to connect to host PC and power supply
- Set-up guide

Development Board Highlights

- 6-Sensor Island
- Adruino Connector
- Key Matrix
- PIR sensor, LEDs
- FTDI Based JTAG
- USB Interface for RF testing, manufacturing

QCA4020 Development Board

Micro-USB port for flashing, RF testing

Arduino Connectors

6-Sensor Island

4020 Reference Module

Wake-up, RESET

FTDI 2232 JTAG IC

Micro-USB port for JTAG, firmware logs

Wi-Fi, Bluetooth LE, 15.4 Tx/Rx Indication

38x GPIOs, 8x ADC, 6x misc. pins for development

Key Matrix

PIR Sensor

Materials are subject to change without notice.
87-YB800-1 Rev. D

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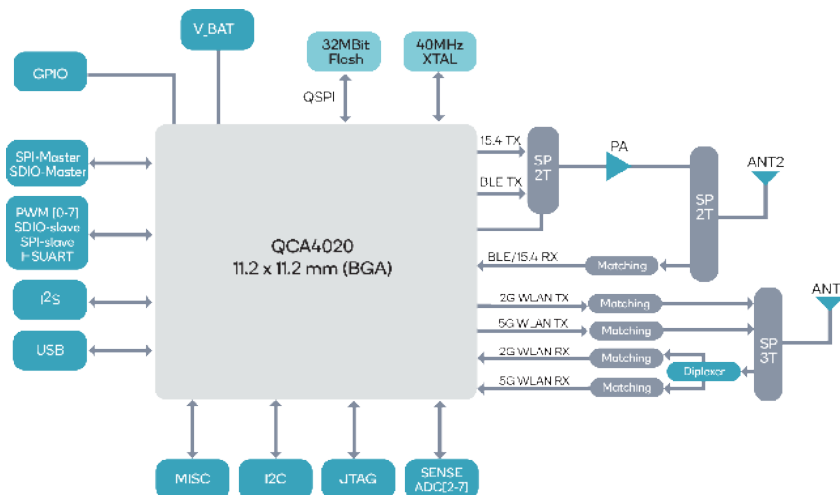
QCA4020 Target Applications

- Smart Cities
- Smart Homes
- Home Gateway

- Appliances
- Home Control
- Home Entertainment/Toys

Bluetooth®

Features

- QCA4020 tri-mode SoC with integrated Bluetooth 5, dual-band Wi-Fi, and 802.15.4 technologies
- On-board FTDI2232 IC for 4-wire JTAG debugging
- Various commercial and free IDE options for JTAG debugging and software development
- Arduino connector to extend kit and add shields
- Open schematics and layout files
- Eclipse based IDE for single-step JTAG debugging
- UART-AT commands to connect QCA4020 to MCU/CPU
- Eight sensors and actuators on-board:
  - Ambient light luminosity
  - 3D accelerometer
  - 3D gyroscope/rotation
  - 3D magnetic field
  - Temperature
  - Humidity
  - Pressure
  - PIR sensor
- Out-of-box drivers for sensors in demo applications
- Miscellaneous headers, test-points for power measurement, direct connect to battery, boot-configuration, and other measurements

Ordering Information

Product	Part Number
QCA4020 Product Development Kit	65-YA999-4

To learn more visit: **qualcomm.com**
or **developer.qualcomm.com**

QCA4020 Module Block Diagram

QCA4020 Module Specifications

Module Size	28.57 x 33.5 mm 124-pin
WLAN Tx/Rx	Integrated WLAN PA and LNA with 17dBm Pout and dedicated WLAN antenna
Bluetooth LE & 802.15.4 Tx	Shared PA between 15.4 and Bluetooth LE for transmit 17 dBm Pout for 15.4 and 7 dBm Pout for Bluetooth LE
Bluetooth LE & 802.15.4 Rx	Concurrent 15.4 and Bluetooth LE Rx Shared antenna between 15.4 and Bluetooth LE
Voltage	3.3V supply voltage
Application I/O	SPI master/slave, 8-channel PWM, SDIO master/slave, HSUART, I2C, 12-bit/8-channel 1-MSPS ADC, 4-wire JTAG debugging Extra GPIOs for application-specific use
Interfaces	SDIO/SPI/UART interfaces to connect to external MCU/CPU interface
Testing	USB interface for RF testing, factory automation

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