Product brief

AIROC™ CYW43439 Wi-Fi 4 + Bluetooth Combo SoC

Robust, standard solution for IoT applications needing reliable Wi-Fi 4

Infineon delivers market-proven AIROC™ Wi-Fi and Bluetooth Combo SoCs enabling robust, reliable, and secure wireless connectivity. Infineon is the industry leader in Wi-Fi for the IoT with 1 billion+ wireless devices in the field over the last 20 years, making AIROC™ the most deployed wireless IP in the industry. Infineon's broad portfolio consists of Wi-Fi 4 (802.11n), Wi-Fi 5 (802.11ac), and Wi-Fi 6 (802.11ax) + Bluetooth combo devices including variants supporting SISO (1x1) or MIMO (2x2), single-band 2.4GHz or dual-band 2.4/5GHz, as well as a host of differentiated feature sets including smart co-existence, ultra-low power consumption, enhanced security, and more.

The AIROC™ CYW43439 1x1 Single-Band Wi-Fi 4 + Bluetooth 5.2 SoC is the ideal connectivity device for cost-optimized IoT applications needing robust and reliable Wi-Fi 4 connectivity. This entry-level device builds on the market-proven Infineon pedigree of CYW4343W/43438 solutions, offering updated Bluetooth capabilities, enhanced security supporting WPA3, and improved performance.

The AIROC™ CYW43439 supports RTOS designs, with the ability to pair with Infineon's ultra-low-power, flexible and secure PSoC™ 6 MCUs within ModusToolbox™ Software and Tools as well as 3rd party M-Class MCUs. In addition, AIROC™ CYW43439 supports Linux and Android designs with popular A-Class processor platform partners. Multiple Infineon Wireless Module Partners are in production to enable fast time-to-market. For complete list please see the Infineon Wi-Fi Bluetooth Partner Module Product Selector Guide or visit the AIROC™ CYW43439 getting started web page.

Key features

Wi-Fi Features:

> Wi-Fi 4 (802.11n)

> Single-band (2.4 GHz)

> 1x1 SISO

> 20 MHz channels, up to 96 Mbps PHY data rate

> Integrated internal PA, LNA, and T/R switch supports a single antenna shared between Wi-Fi and Bluetooth

Bluetooth Features:

> Class 1 (100 m) and Class 2 (10 m) operation

> Bluetooth 5.2, supports BDR (1Mbps), EDR (2/3Mbps), and Bluetooth LE

General Features:

> SDIO v2.0 Host Interface – (Can be shared across Wi-Fi and Bluetooth)

> gSPI host interface

> SBC Host offload A2DP

> Supports WPA3 Security

> 2-wire GCI / SECI Coexistence

> SoftAP (Up to 4 clients)

> DPP (Device Provisional Protocol) for Wi-Fi Easy Connect™

> GPIOs (5)

AIROC™ CYW43439 benefits

> Cost-optimization without sacrificing Wi-Fi RF Performance or Security

> Built on market proven wireless IP – maximum interoperability

> Efficient power consumption for Wi-Fi 4 enabled devices

> Supports concurrent Wi-Fi and Bluetooth connectivity use cases

> Reduction in development time with Wi-Fi software enablement for both RTOS and Linux/Android designs with multiple hosts supported

> Rapid time-to-market with multiple partner modules integrating AIROC™ 43439 with full global certifications, reference platforms, and more

> Wi-Fi support in Infineon Developer Community with direct access to online applications support engineers

For more information, please go to:
www.cypress.com/cyw43439

AIROC™ CYW43439 Wi-Fi 4 + Bluetooth Combo SoC

Robust, standard solution for IoT applications needing reliable Wi-Fi 4

Key applications

Smart Home	Smart Appliances, Smart Thermostat, Smart Doorbells, IP Cameras, Service Robots
Smart Building	Surveillance Equipment, Smart Commercial HVAC, Occupancy Management
Industrial Automation	Factory Automation, Industrial Robotics
Smart Medical/Healthcare	Blood Pressure Monitors, Tele-health Gateways, Connected Patient Room Equipment

Product summary

Name	Description	Temperature range [°C]	Package
CYW43439	Single-Band Wi-Fi 4 + Bluetooth Combo SoC	-30C to +70C	63-ball WLBGA (4.87 x 2.87mm;;0.4mm ball pitch)
Murata Type 1YN (LBEE5KL1YN)	Fully certified Murata Module integrating the AIROC™ Single-Band Wi-Fi 4 + Bluetooth Combo SoC	-30C to +70C	6.95 x 5.15mm x 1.1mm max.
Laird Connectivity Sterling-LWB+	Fully certified Laird Connectivity Module integrating the AIROC™ Single-Band Wi-Fi 4 + Bluetooth Combo SoC	-30C to +85C	12 x 17mm
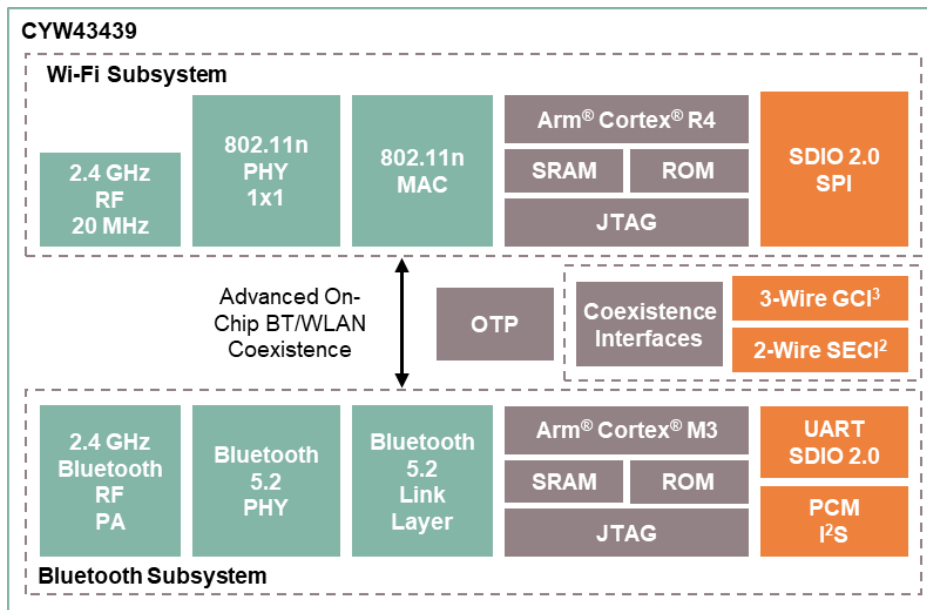
Please note!
This Document is for information purposes only and any information given herein shall in no event be regarded as a warranty, guarantee or description of any functionality, conditions and/or quality of our products or any suitability for a particular purpose. With regard to the technical specifications of our products, we kindly ask you to refer to the relevant product data sheets provided by us. Our customers and their technical departments are required to evaluate the suitability of our products for the intended application.

We reserve the right to change this document and/or the information given herein at any time.

Additional information
For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings
Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.