

AIROC™ CYW20829 Bluetooth® LE Module

The ideal combination of features for Bluetooth® connectivity in a fully integrated module

Infineon’s AIROC™ CYW20829B0-P4TAI100 is a Bluetooth® fully integrated module, with the right combination of low power, high performance, and security to enable fast development of IoT, smart home, and industrial applications and deliver feature-rich, innovative solutions to market rapidly.

The CYW20829B0-P4TAI100 is fully qualified by Bluetooth® SIG and is targeted at applications requiring cost-optimized Bluetooth® wireless connectivity. The module includes an onboard crystal oscillator, passive components, flash memory, and the [CYW20829](#) connected MCU.

The CYW20829B0-P4TAI100 supports high-performance analog-to-digital conversion audio input, I2S/PCM, CAN-FD, LIN, and other standard communication and timing peripherals. The CYW20829B0-P4TAI100 includes a royalty-free Bluetooth® stack compatible with Bluetooth® 5.4 core spec in a 14.5 × 19 × 1.95 mm package.

The CYW20829B0-P4TAI100 includes 1 MB of onboard serial flash memory and is designed for standalone operation. It also uses an integrated power amplifier to achieve Class I or Class II output power capability.

The CYW20829B0-P4XX100 is offered in two certified versions CYW20829B0-P4TAI100, and CYW20829B0-P4EPI100. The CYW20829B0-P4TAI100 includes an integrated trace antenna. The CYW20829B0-P4EPI100 supports an external antenna through a RF solder pad output.

This module simplifies even the most complex application deployments, making it an ideal choice for use cases including smart home, medical healthcare, lighting, remote controls, human interface devices, industrial automation, and any other Bluetooth® LE-connected IoT application.

For more Information visit www.infineon.com/CYW20829B0-P4TAI100.



Key features

- Bluetooth® SIG QDID, FCC, CE, MIC, and ISED
- High Performance with Rich MCU Peripherals
- Integrated 1 MB Flash, 256 KB RAM, 64 KB ROM
- 2 UART, 2 SPI, 2 I2C, 9 PWM, 26 GPIO
- High Reliability, Low Power BLE
 - -106 dBm LE-LR sensitivity
 - Active RX @ LE 1Mbps: 5.6mA, Active TX @ 0dBm: 5.2mA
 - Low Energy/Long Range (LE/LR)
 - 4.5 uA with 64 KB SRAM retention
 - 0.5 uA Deep Sleep
- Small Footprint
 - 14.5 × 19 × 1.95 mm, 41-PAD SMT
 - 1.7 to 3.6 V supply voltage range
 - Operating temperature -40 to 85°C

Key benefits

- Best RF range and robustness in the industry
- Full-featured Bluetooth® v5.4 support for future proofing
- High integration minimizes system BOM cost
- Ultra-low current consumption for extended battery life
- Ultra-low latency



PRODUCT BRIEF

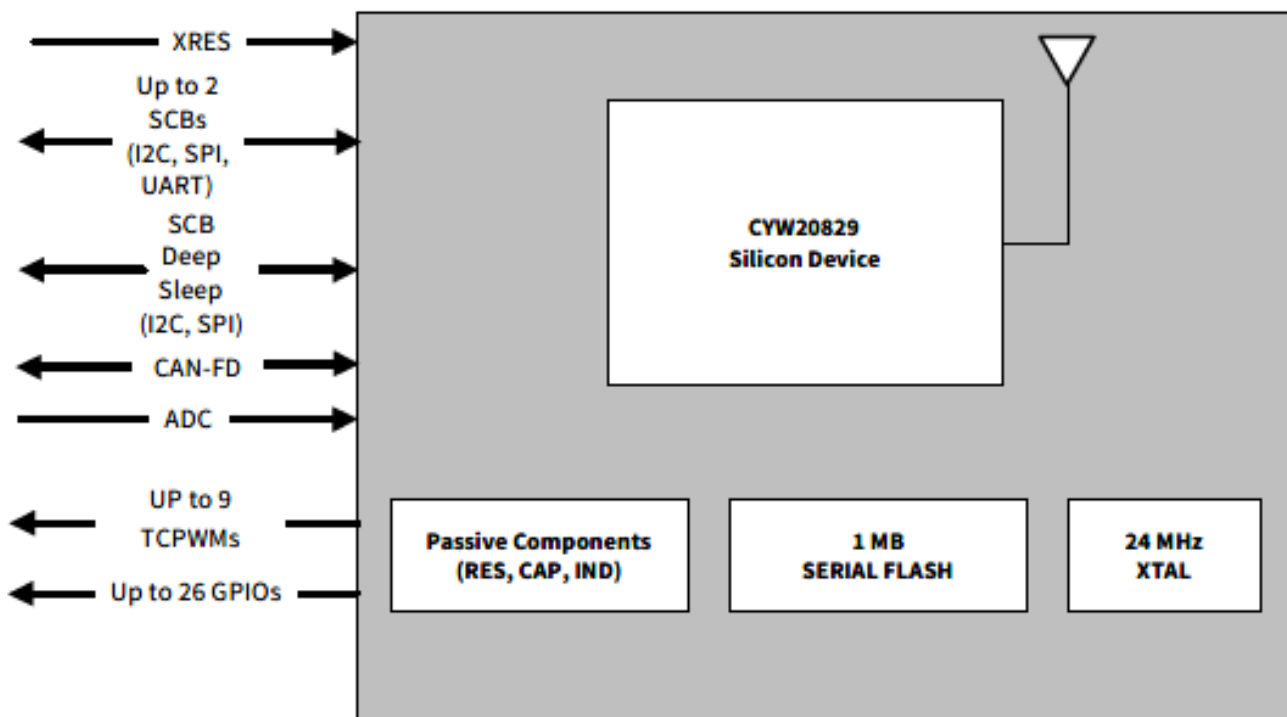
Key Applications

Industrial	Asset Tracking, 2-Way IoT Sensors, Solar Farms
Smart Home	Home-Automation, Sensors, Nodes
Health	Medical Patches, Wearable Monitors (e.g. ECG, blood pressure)
Gaming	AR/VR controllers, Accessories
PC Accessories	Mouse, Keyboards, Gaming, ULL-HID

Product Summary

PN	CPU Core	Max CPU Speed	SRAM [KB]	Flash [KB]	Antenna	Package	Temp [C]
CYW20829B0P4TAI100XUMA1	ARM® Cortex® M33	96 MHz	256	1024	Trace	14.5 × 19 × 1.95 mm, 41-SMT	-40 to 85
CYW20829B0P4EPI100XUMA1	ARM® Cortex® M33	96 MHz	256	1024	External	14.5 × 19 × 1.95 mm, 41-SMT	-40 to 85

Block Diagram



Get Support @ <https://community.infineon.com/t5/AIROC-Bluetooth/bd-p/Bluetooth>



www.infineon.com

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

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