AIROC™ CYW20829 Bluetooth® LE MCU

The ideal combination of performance, energy efficiency, and security for Bluetooth connectivity

Infineon's AIROC™ CYW20829 Bluetooth® LE MCU is a Bluetooth® 5.4 core spec-ready device, 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 CYW20829 MCU integrates a 96 MHz Arm® Cortex®-M33 MCU and a secondary Arm® Cortex®-M33 dedicated as the Bluetooth® controller.

For Connectivity, the CYW20829 offers unmatched reliability and robustness through its best-in-class RF link budget, boasting up to -116 dBm with an integrated power amplifier for 10 dBm of transmit output power and a remarkable receive sensitivity of -106 dBm for Bluetooth® LE 125 kbps.

Security wise, it features support for secure boot, a secure execution environment, a TRNG, eFuse for custom keys, and cryptographic acceleration, safeguarding sensitive data.

Furthermore, The CYW20829 MCU comes with 256 KB of Application SRAM, an XIP-capable QSPI interface to allow flexible selection of NVM (external Flash), and a diverse range of peripherals, including CAN-FD, PDM, I2S, etc., making it adaptable to a wide variety of applications.

Bringing together the best of compute, connectivity, and security, the AIROC™ CYW20829 Bluetooth® LE MCU is complemented by a rich and proven software infrastructure, offering extensive code examples and an easy-to-use development environment.

This combination provides unparalleled flexibility and 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/CYW20829.

Key features

– Full Feature Bluetooth® LE 5.4
  – Including PAwR and Long Range
– Application MCU
  – Up to 96 MHz ARM® Cortex® M33
  – 256 KB SRAM
– Bluetooth® Subsystem
  – 48 MHz ARM® Cortex® M33
  – 96 KB SRAM
– 48 MHz QSPI/SMIF with XIP,
  – 32 KB Cache
  – On-the-fly encryption for off-chip Flash
– Secure Boot & Crypto HW Engine
– TX Power: up to +10 dBm
– 1.7 to 3.6 V supply voltage range
– 32 Programmable GPIO
– CAN-FD and LIN support
– -30 to 85°C operating temp. range
– 6x6 QFN56

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

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	Max CPU Speed	SRAM [KB]	Package	Temp [C]
CYW20829B0LKML	96 MHz	256 KB	6 x6 x 0.9 mm 56-QFN	-30 to 85
CYW20829B0LKMLT	96 MHz	256 KB	6 x6 x 0.9 mm 56-QFN Tape/Reel	-30 to 85
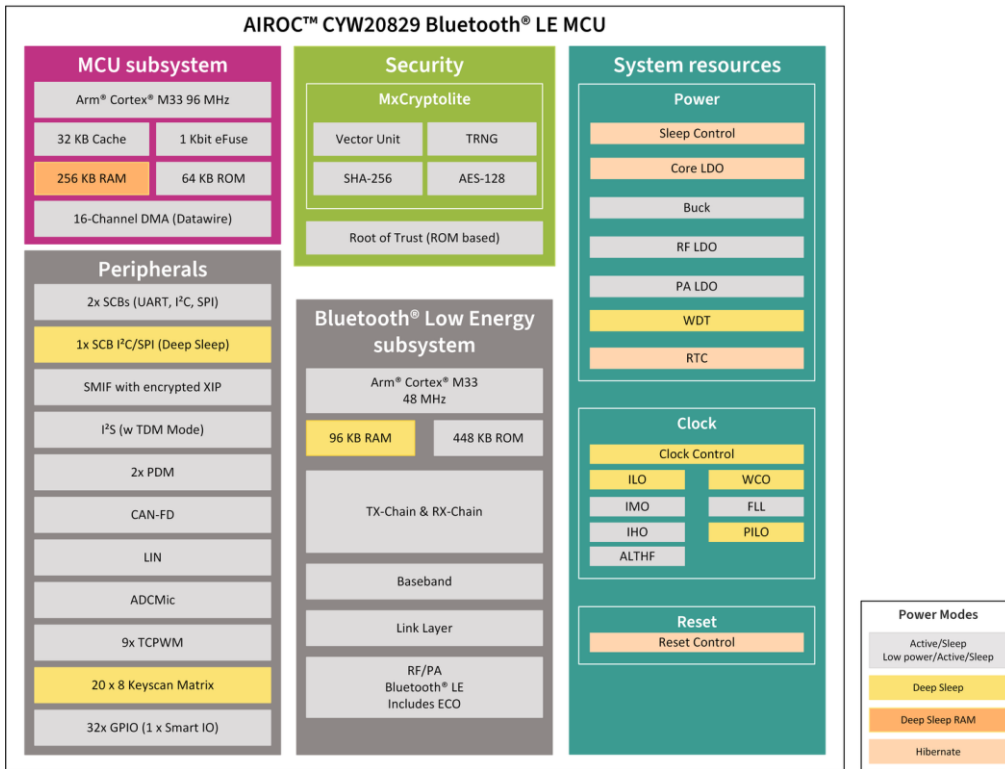
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Additional information
For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

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.