PRODUCT BRIEF

AIROC™ CYW55310

Bringing together Bluetooth® Classic Audio and Auracast™ in a secure, power-efficient SoC

Infineon's AIROC™ CYW55310 is a Bluetooth® Audio SoC that brings together Bluetooth® Classic Audio and Auracast™ LE Audio for rich, next-generation listening experiences. The dual-mode controller supports A2DP, HFP, Auracast™ broadcast/receive, and LE Long Range PHY with +19 dBm TX power and –110.5 dBm RX sensitivity, enabling robust links for true wireless earbuds, speakers, soundbars, conference systems, and audio-sharing gateways.

A power-efficient Arm® Cortex®-M33 MCU at 192 MHz with FPU handles advanced audio processing, UI, and control while allowing designers to right-size external flash for optimal cost and power. Integrated audio peripherals (I2S, TDM, analog mic) and display capability (OLED/TFT) simplify system design, while a ROM-based root of trust, secure boot, crypto acceleration, and standards-aligned certifications support secure, compliant connected audio products. ModusToolbox™, the AIROC™ Bluetooth® stack, and ready-to-use audio middleware help teams move quickly from concept to production.

For more Information visit: www.infineon.com/part/CYW55310



Key features

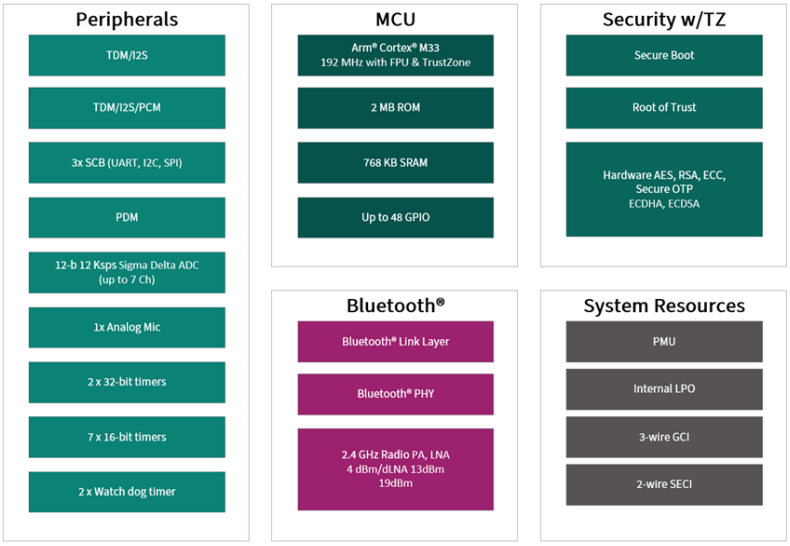
- Arm® Cortex®-M33 @ 192 MHz with FPU and TrustZone®
- Dual-mode Bluetooth® Classic Audio and Auracast™ LE Audio
- LE Long Range, LE 2 Mbps, Adv. Ext.
- Integrated PA up to +19 dBm TX power and –110.5 dBm RX sensitivity
- Comprehensive security: secure boot, lifecycle management, FW authentication/encryption, CryptoCell-312
- QSPI Flash/PSRAM with XIP and on-the-fly (OTF) encryption support
- 143-ball WLBGA package (3.57 × 5.32 x 0.35 mm)

Key benefits

- Combines Bluetooth® Classic Audio and Auracast™ LE Audio on a single, scalable platform
- Extends wireless range and robustness with +19 dBm TX and LE Long Range PHY
- Optimizes BOM cost with a flash-less Cortex-M33 MCU enabling external "right-sized" memory
- Simplifies secure product design with hardware root of trust, secure boot, and crypto offload
- Accelerates development using ModusToolbox™, AIROC™ Bluetooth® stack, and ready-to-use middleware

PRODUCT BRIEF

Bock diagram



Audio Peripheral

	Modes	Channels	Direction	Sample Rates	Sample Width	Application
Legacy PCMx	TDM	8 channels	Bi-Directional	8k, 16k	16 bit	HFP
	I2S	2 channels	Single-Direction	8k to 48k	16 bit	A2DP at 44.1k or 48k or LE Offload
TDM1/TDM2	TDM	8 channels	Bi-Directional	8k to 96k	16 and 24-bit	LE Audio
	I2S	2 channels	Bi-Directional	8k to 96k	16 and 24-bit	LE Audio/A2DP

Part Numbers

Part Number	Description	Temp (Ta)	Package
CYW55310IUBGT	AIROC™ CYW55310 Bluetooth® Audio SoC	-40 to 85°C	143-ball WLBGA (3.57×5.32x0.35 mm)
Vela IF310	AIROC™ CYW55310 based SiP modules from Ezurio	-40 to 85°C	SMT (12x16x2 mm)
KIT-CYW55310-EVAL	AIROC™ CYW55310 Bluetooth® Audio Development Kit	-40 to 85°C	Kit

Key Applications

Wearables	Smart watch audio applications, hearing aid, wireless earbuds
IoT	Audio applications, wireless audio, accessory applications, speakers, soundbars, conference systems, and audio-sharing gateways

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