Getting LE Audio designs to production faster with AIROC™ CYW55310

Built on Infineon's **AIROC™ CYW55310**, the Vela IF310 brings together **Bluetooth Classic (BR/EDR)** and is **Bluetooth Core® 6.0 certified**—including LE Audio with LC3, Isochronous Channels, Auracast, LE Coded & 2 MPHY and Advertising Extensions—so you can refresh legacy Classic designs and embrace the latest LE Audio opportunities with one module.

The reality: Audio is moving fast. Integration is not

Bluetooth® is shifting quickly right now, especially around audio. LE Audio, LC3, and Auracast are starting to show up in real applications like hearing aids, shared audio in public spaces, fitness equipment, and automotive systems. The features are there. Getting them into a working product is the hard part.

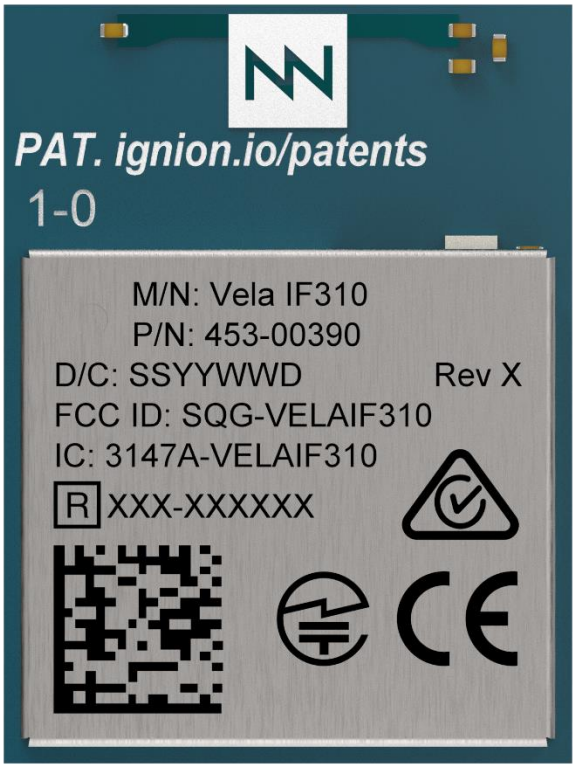
Most teams evaluating the AIROC™ CYW55310 do not run into issues because of the silicon. The problems show up around it:

- RF design
- Antenna placement
- Audio integration
- Certification

That is where timelines slip and costs build.

There is a practical business consideration. For teams thinking about chip-down, the economics usually does not make sense unless volumes reach 100,000 units or more. Until you are well into high volume, the module path is typically faster and lower risk when you factor in engineering time, certification, and iteration cycles. The priority at this stage is getting a working product to market. Optimization can follow later.

This is precisely the problem that the Vela IF310 is built to solve.



As a **Premium Infineon Wireless Module Partner**, Ezurio has taken the CYW55310 and delivered it as a production-ready module. The RF is validated, antenna options are certified, and the hardware is already integrated. The Vela IF310 is the module at the heart of the official Infineon CYW55310 evaluation kit, KIT-CYW55310-EVAL, not a third-party add-on, but the reference implementation Infineon chose for engineers getting started with the platform.

Bridging classic and LE audio — without starting over

One of the bigger challenges right now is the shift from Classic Bluetooth® to LE Audio.

The new features are real: LC3 codec, isochronous channels, Auracast broadcast audio, advertising extensions, and LE coded PHY for extended range. But most products still rely on Classic Bluetooth® for A2DP streaming and HFP voice. Those use cases are not going away anytime soon and cannot just drop support for them.

The Vela IF310 supports both Classic and LE Audio simultaneously, so a complete redesign is not required. In practice, this means your existing audio use cases keep working, while you start adding LE Audio features where they actually make sense. You can support both old and new devices and move toward LE Audio on your own timeline instead of all at once.

In real applications, that matters.

- **Hearing aids and assistive listening** need consistent, low-latency audio in real-world environments
- **Fitness equipment** still connects to existing infrastructure but is starting to support new headset experiences
- **Automotive systems** rely on HFP but are adding shared audio and broadcast use cases
- **Commercial AV and medical devices** have long lifecycles and can't break what's already deployed

You are not choosing between Classic and LE Audio, you are supporting both in the same design.

Fits the system you have

Bluetooth® is usually just one part of a larger system. The Vela IF310 is built to drop into that system without forcing you to redesign everything around it. You've got a few ways to work with it, depending on how your system is set up.

Hosted to MCU

The Bluetooth® stack runs on an external microcontroller via HCI UART. It works with standard HCI-based stacks like BlueZ, BlueKitchen, Infineon AIROC™, OpenSynergy, Mindtree, Clarinox, and others, so you're not locked into a specific software environment.

If you are using Infineon's AIROC™ stack, it's already Bluetooth® SIG certified and validated with the IF310. That saves time during bring-up and reduces the amount of debugging and certification work you need to do later.

Hosted to MPU

The Bluetooth® stack runs on an application processor under Linux or Android. The typical configuration for gateways, media players, and more capable embedded platforms where a host OS is already present.

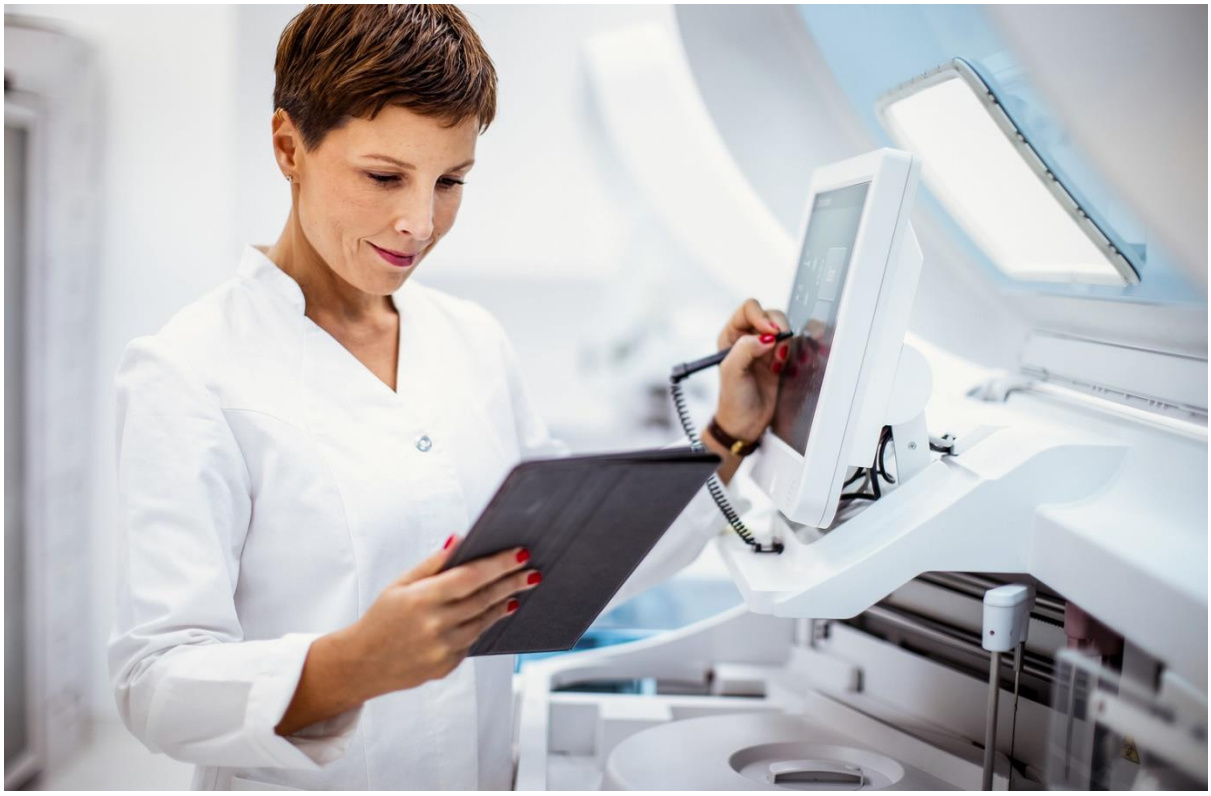
Hostless/Standalone

If you don't want an external host at all, the Vela IF310 can operate standalone using Infineon's AIROC™ stack within the ModusToolbox™ environment.

Note: Hostless mode requires external Flash/PSRAM depending on application demands. Infineon support for hostless mode via ModusToolbox is planned for Q2 2026.

That flexibility matters depending on the application.

- In **hearing aids or wearable audio**, you may want a more self-contained system
- In **automotive or gateways**, you are likely integrating into an existing OS
- In **industrial or medical devices**, you may already have a defined MCU architecture



The audio interface side follows the same principle. Standard I²S, TDM, and PCM interfaces, including dual TDM/I²S for multi-stream LE Audio and HFP/A2DP, mean integration into existing audio pipelines is straightforward. You are not rebuilding your signal chain; you are connecting to it.

From a hardware standpoint, it's straightforward. The module comes in a single 12×16 mm footprint with three antenna options: integrated, MHF4, or trace. You can change your antenna approach without redesigning the board.

One thing worth calling out early: placement matters. The module shouldn't be treated like something you drop in at the end of layout. Its position relative to the board edge, ground plane, and nearby components has a big impact on RF performance. Placing it early in the design gives you the flexibility to follow the layout guidelines properly. Waiting until the end is one of the most common ways RF issues show up late.

Lower risk, Faster to production

The most expensive problems in wireless projects are the ones you find late. RF issues during pre-compliance. Antenna problems after the layout is already locked. Certification failures that push timelines out by weeks. That is usually where things go sideways. The Vela IF310 helps avoid that by removing a lot of that work upfront, instead of leaving it to be figured out during integration.

Validated RF design

The RF design is already done and validated in real conditions, not just on a reference bench. Antenna performance is characterized as part of the full system, including the ground plane and surrounding environment. That matters, because the ground plane isn't passive, it directly affects how the antenna behaves. So instead of starting from a reference design and hoping it holds, you are starting from something that is already been proven in setups closer to real deployment.

Certification leverage

If you follow the module's design guidelines, like antenna keep-out, placement, ground plane, you can leverage the module's existing approvals.

If the approved trace layout is not followed, FCC/ISED requires full independent retesting of the end device. That can easily add weeks and significantly increase cost. The guidelines are there to avoid that situation. For EU RED/CE, a similar risk assessment applies. The design recommendations exist to keep that risk off the table.

Pre-certified antenna options

Antenna selection is also simplified. Ezurio provides pre-certified antenna options that are already tested with the module including the i-FlexPIFA™, mFlexPIFA™, FlexPIFA™, and NanoBlue series. This significantly reduces design uncertainty and minimizes the amount of regulatory work you need to handle independently.

Built-in security

TrustZone® and CryptoCell-312 are on-chip, supporting Secure Boot, firmware authentication and encryption, cryptographic key management, and anti-rollback. It's not something you need to layer on later.

Industrial reliability

Operating temperature range of -40°C to +85°C. Designed for the environments where wireless connectivity is hardest: factory floors, clinical spaces, and outdoor deployments.

With high transmit power and strong receive sensitivity, the platform supports longer-range connections without needing an external front-end module. That can make a difference in industrial and medical systems where coverage and reliability matter more than size or power constraints.

Expert support

As a Premium Infineon Wireless Module Partner, Ezurio brings demonstrated expertise in RF design, antenna integration, regulatory certification, and embedded wireless development. That expertise is available to customers, not just the module datasheet. Antenna scans, placement guidance, EMC testing, firmware support, and hands-on engineering assistance are part of working with Ezurio, not separate line items.

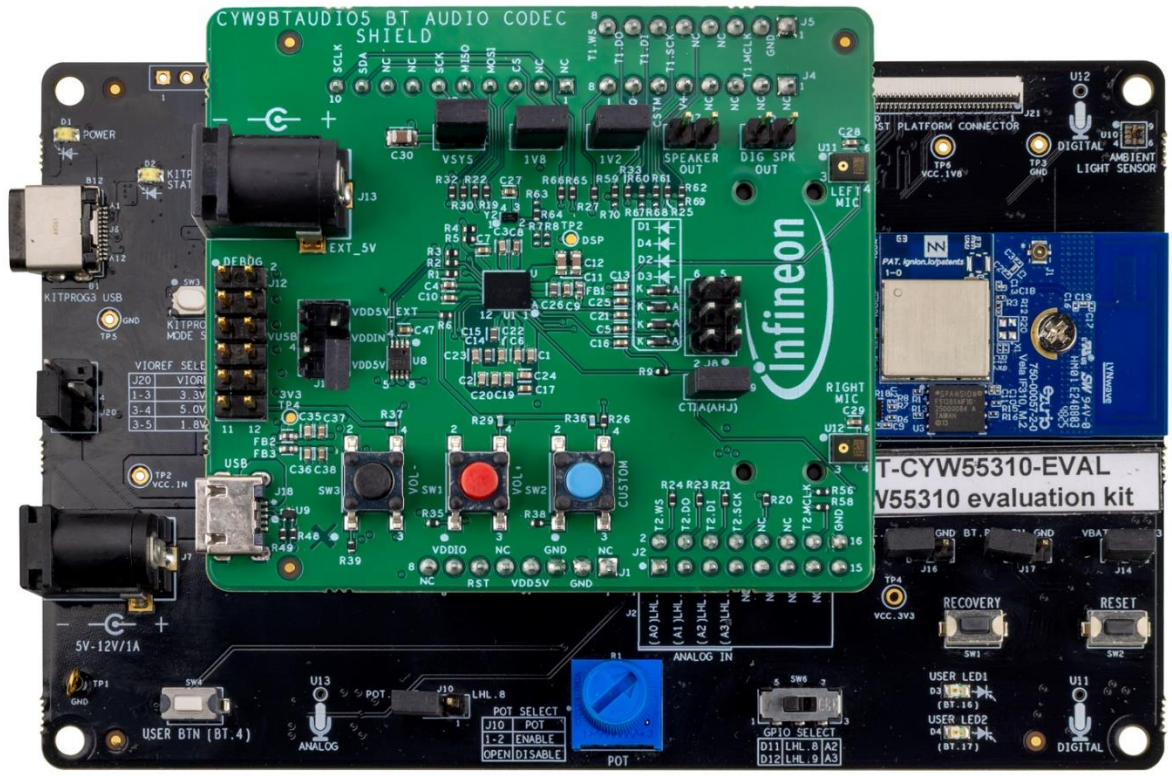
Solving the hard part of Bluetooth® audio integration

At the end of the day, the challenge isn't access to Bluetooth® features, it is getting them into a reliable product. CYW55310 already gives you the capability. The challenge is everything around it like RF design, audio integration, and certification. That's where most of the work is.

This is where the Vela IF310 makes a difference. Instead of starting from the silicon and working through all of that yourself, you're starting from a module where those pieces are already solved. RF is validated, integration is known, and the path to certification is clear.

That's what makes it easier to move from evaluation to something you can actually ship.

Start evaluating today



The Vela IF310 is the module inside the official Infineon KIT-CYW55310-EVAL development kit, the platform Infineon recommends for engineers evaluating Bluetooth® Classic and Auracast audio with the CYW55310. If you are already working with the eval kit, you are already working with the Vela IF310.

For teams ready to move from evaluation to design, the Vela IF310 is available as a standalone module in three antenna variants, with dedicated development kits for each:

- 453-00390-K1 — Development Kit, Integrated Ignion Antenna
- 453-00391-K1 — Development Kit, MHF4 Connector
- ezurio.com — Vela IF310 Product Page

Samples are available now. To get started, request samples or contact the Ezurio engineering team.