SPECTRUM COEXISTENCE

VECTORWAVE

Autonomous Wi-Fi spectrum sharing

VectorWave enables Wi-Fi access points to sense incumbent RF activity and adapt in nanoseconds—unlocking spectrum coexistence without the latency, complexity, and coordination burden of conventional approaches.

The pressure

Wi-Fi demand keeps rising. More connected devices, more data, and more real-time applications are increasing pressure on existing bands.

But spectrum is finite. Expanding wireless capacity increasingly depends on making shared spectrum fast, reliable, and practical to use—without creating interference for incumbent users such as radar systems.

Where current approaches fall short

Automated Frequency Coordination (AFC): Uses an external permissioning system to determine whether a Wi-Fi access point may transmit—but decisions can be slow and conservative, limiting the extent to which available spectrum is used.

Dynamic Frequency Selection (DFS): Requires Wi-Fi devices to listen for radar, vacate affected channels, and remain off-channel for defined periods—interrupting service and leaving usable spectrum idle.

Traditional approaches depend on human-scale coordination and minute-scale channel avoidance. VectorWave enables intelligence at signal speed.

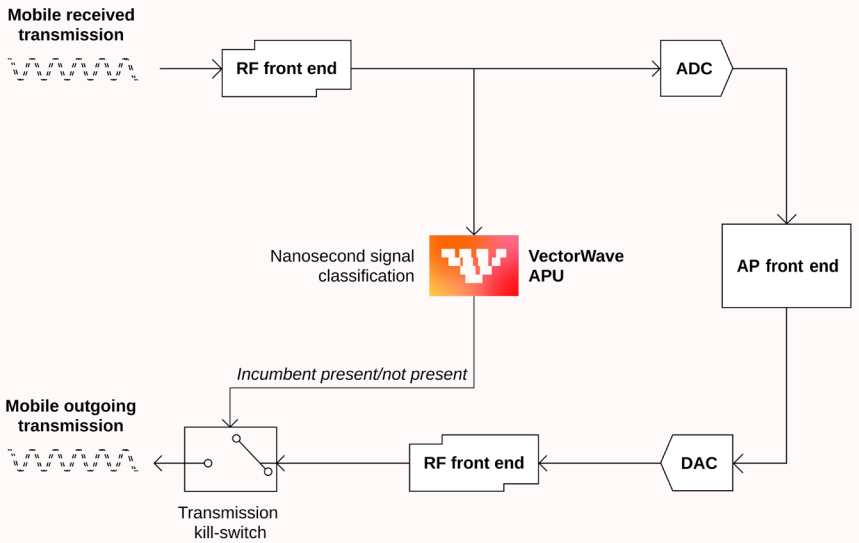
VectorWave changes where RF decisions happen

Instead of relying on external coordination and delayed downstream processing, VectorWave performs AI inference directly on the live RF signal.

Integrated into the Wi-Fi access point, VectorWave's Analog Processing Unit (APU) identifies incumbent RF activity before conventional digital compute and triggers an automatic response in nanoseconds.

Signal-speed intelligence inside the access point

1. RF activity enters the Wi-Fi access point.
2. The APU analyzes the RF signal before conventional digital compute.
3. VectorWave APU inference identifies incumbent radar or other protected RF activity.
4. The system automatically attenuates, switches channels, or pauses transmission.
5. The access point resumes operation immediately when the channel is clear.



What VectorWave enables

More usable spectrum

Makes shared spectrum practical to use by enabling real-time coexistence with incumbent users.

Faster local adaptation

Enables access points to respond to changing RF conditions in nanoseconds.

Better user experience

Expands the spectrum available to the access point, supporting faster and more reliable connectivity.

Reduced coordination overhead

Moves spectrum awareness into the access point itself, reducing dependence on external coordination systems.

Nanosecond AI inference performed directly on the live RF signal

Edge-native RF sensing inside the access point

Automatic response through attenuation, channel switching, or transmission pause

1.5–2x improvement in user experience under supported spectrum-sharing scenarios*

By preforming intelligence directly on the live RF signal, VectorWave turns Wi-Fi spectrum sharing from a managed constraint into an autonomous capability inside the access point.

Learn more at **vectorwave.com**

* Performance claims are subject to deployment conditions.