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Product Brief

BCM4918

Quad-Core ARM v8 10Gb Accelerated Processing Unit with AI for Premium Wi-Fi 8 Residential Access Points

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Features

- Quad-Core ARMv8-compatible CPU
- Integrated Broadcom Neural Engine (BNE) AI/ML core
- Dual Issue Runner Packet Processor
- Offload of both wired and wireless data paths
- Integrated cryptographic protocol acceleration
- Integrated Multi-Gig Ethernet PHY interfaces
- Advanced memory interfaces
- Quad PCIe Gen3 ports
- Dual USB ports
- Secure Boot and enhanced encryption support

Overview

The Broadcom® Wi-Fi 8 Accelerated Processing Unit (APU) is a next-generation system-on-chip designed to unify high-performance computing, networking, and AI acceleration in single, tightly integrated silicon. This SoC dramatically expands upon the capabilities of previous generations by integrating a powerful Broadcom Neural Engine (BNE) for on-device AI/ML inference and acceleration, transforming the access point into an intelligent edge computing platform.

The integrated quad-core ARMv8 CPU complex provides robust performance for dedicated customer applications, while the advanced networking engines offload both wired and wireless data paths. This engine architecture enables complete CPU bypass of all networking traffic for ultra-low latency and maximum throughput.

With its high level of integration, the BCM4918 combines the compute flexibility of a CPU, the intelligence of the Broadcom BNE, the efficiency of dedicated network accelerators, and the protection of integrated crypto engines. This powerful combination is engineered to simplify design, minimize PCB footprints, and ensure industry-leading throughput and power efficiency, creating a new class of secure, AI-ready Wi-Fi 8 platform for the connected world.

BCM4918 Block Diagram
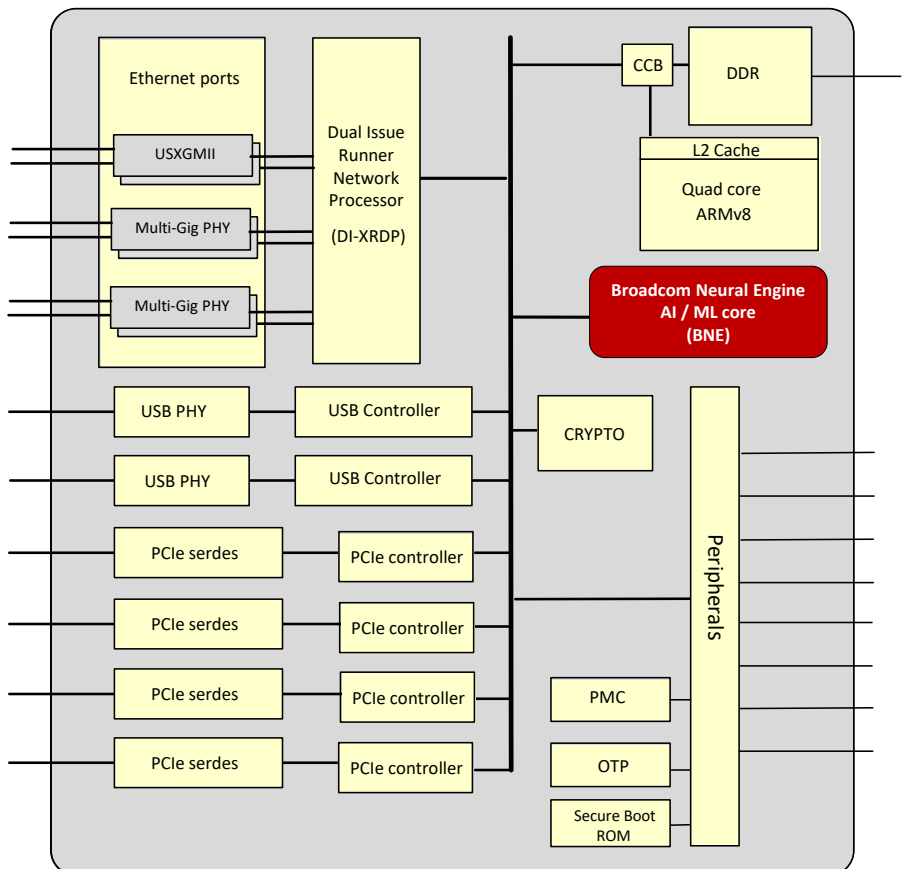
Next-Generation Network Processor with Integrated AI

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Typical Wi-Fi 8 Access Point Block Diagram
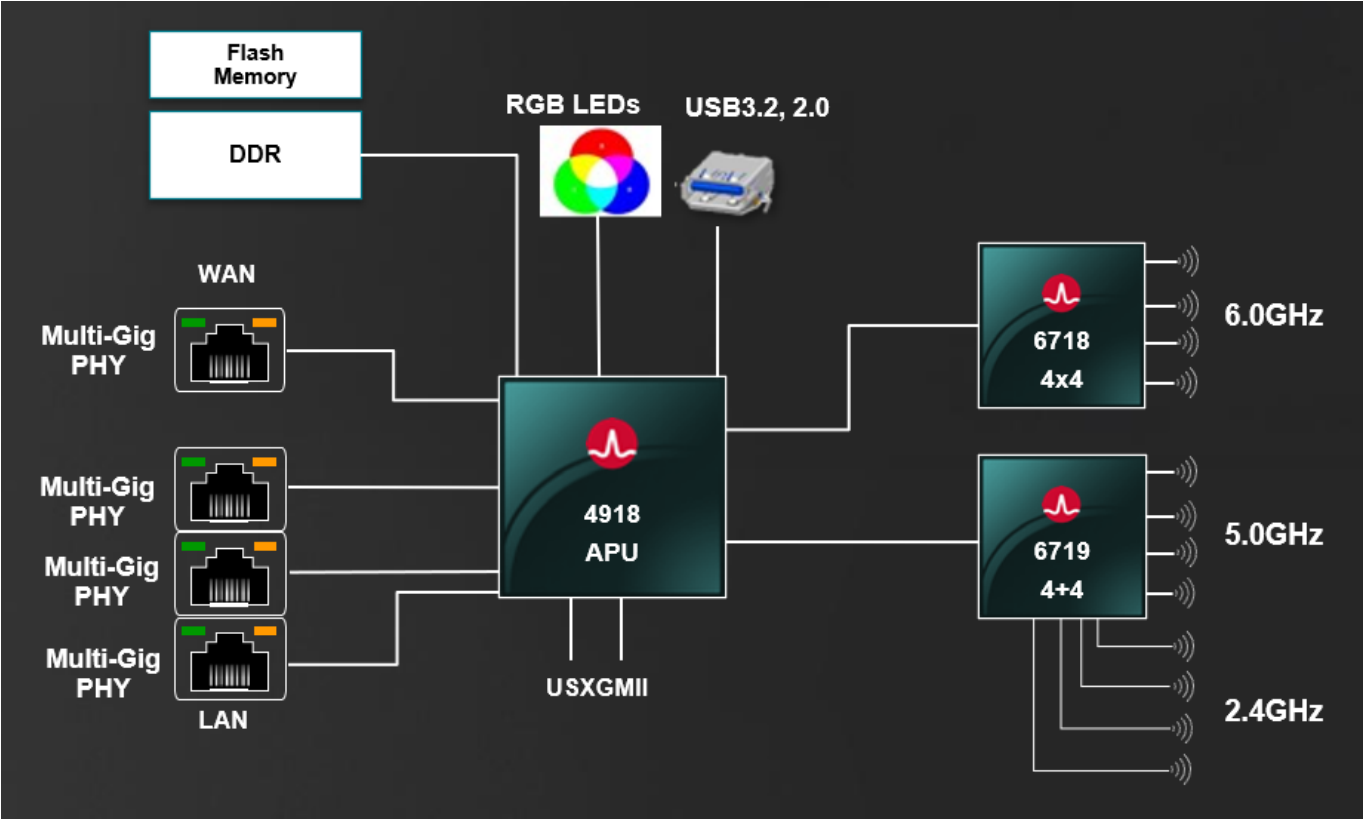
Ordering Information		
Part Number	Package	Ambient Temperature Range
BCM4918A0KFBEG	19 mm x 19 mm FCBGA	0°C to 70°C