

# BCM43109

## 2.4/5/6 GHz IEEE 802.11bn 2x2 Wireless LAN MAC/Baseband/Radio, Dual-Core Bluetooth, IEEE 802.15.4, and Scan Radio



### Wireless LAN Key Features

- IEEE 802.11bn compliant
- Dual-stream spatial multiplexing data rate of up to 5 Gbps during single-band operation and 5.25 Gbps in RSDB mode
- Up to 320 MHz channels for the 2x2 5 GHz and 6 GHz radio, and 20 MHz channels for the 2x2 2.4 GHz radio
- STR MLO and EMLSR support
- PCIe mode supports:
  - PCIe base specification revision 3.0 for x1 lane
  - Power management running at Gen3 speeds
  - Common PCIe x1 interface for BT/WLAN
- Integrated Arm processor and memory minimize applications-processor use for standard WLAN functions

### Overview

The Broadcom® BCM43109 system-on-a-chip is fabricated in a 5 nm FinFET process and contains a simultaneous dual-band (SDB) 2x2 IEEE 802.11bn-compliant radio, a dual-core SDB Bluetooth (BT) radio, an IEEE 802.15.4 radio, and a dedicated scan core that enhances system operation.

A PCI Express (PCIe) v3.0-compliant interface running at Gen3 speeds is the WLAN host interface. The BT host interface can be a dedicated high-speed 4-wire UART or the same PCIe interface used by the WLAN subsystem.

### Bluetooth Key Features

- Complies with future BT Core Specifications
- Dual-core support
- 2G and higher band SDB with HDT support
- Dedicated high-speed UART for host controller interface (HCI)
- PCM and I<sup>2</sup>S for audio data

### General Features

- IEEE 802.15.4 (supporting OpenThread, ZBOSS, etc.)
- Scan radio enhances 2.4 GHz, 5 GHz, and 6 GHz channel performance
- RF Front-End Control Interface (RFFE)
- WLCSP and FcFBGA package