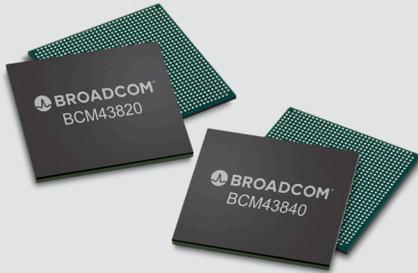


Product Brief



Wi-Fi 8 Solution

- Quad-stream 802.11bn UHR
- Up to 320 MHz bandwidth (6 GHz)

Increased Capacity

- Dynamic Sub-band Operation (DSO)
- Non-Primary Channel Access (NPCA)
- Inter-AP Coordination (Co-SR, Co-BF)
- Dynamic Bandwidth Expansion (DBE)

Higher Throughput & Range

- New UHR MCS rates
- Advanced LDPC codes
- Unequal Modulation (UEQM)
- Extended Long Range (ELR)
- Distributed Resource Units (DRU)

Optimized Reliability & QoS

- Low Latency Indication
- Seamless Roaming
- QoS Enhancements
- Enhanced EDCA
- Enhanced In-Device Coexistence

BCM43840 & BCM43820

Next Generation of Wi-Fi 8 (802.11bn) Access Point Devices

Overview

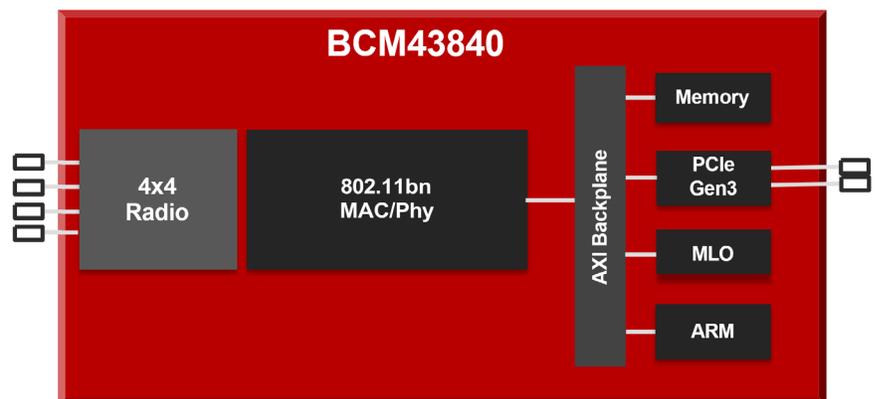
The Broadcom® BCM43840 and BCM43820 are the world's first 4x4 and 2x2 Wi-Fi 8 MAC/PHY/Radio solutions respectively, redefining wireless connectivity by delivering unparalleled performance, efficiency, and reliability for a new generation of 802.11bn (UHR) Enterprise Wi-Fi access points.

The BCM43840 and BCM43820 support the new Wi-Fi 8 802.11bn full feature set, increasing capacity (DSO, NPCA, DBE, Co-SR/Co-BF), improving throughput (UEQM as well as UHR new rates MCS17/MCS19/MCS20/MCS23), extending range (ELR, DRU), and optimizing reliability and QoS (seamless roaming, low latency indication).

The BCM43840 and BCM43820 combine Wi-Fi 8 capabilities with Broadcom's proprietary features to address the stringent demands of an AI-era by providing support for intelligent networks, better power efficiency, and a superior Quality-of-Experience for users across diverse devices and applications.

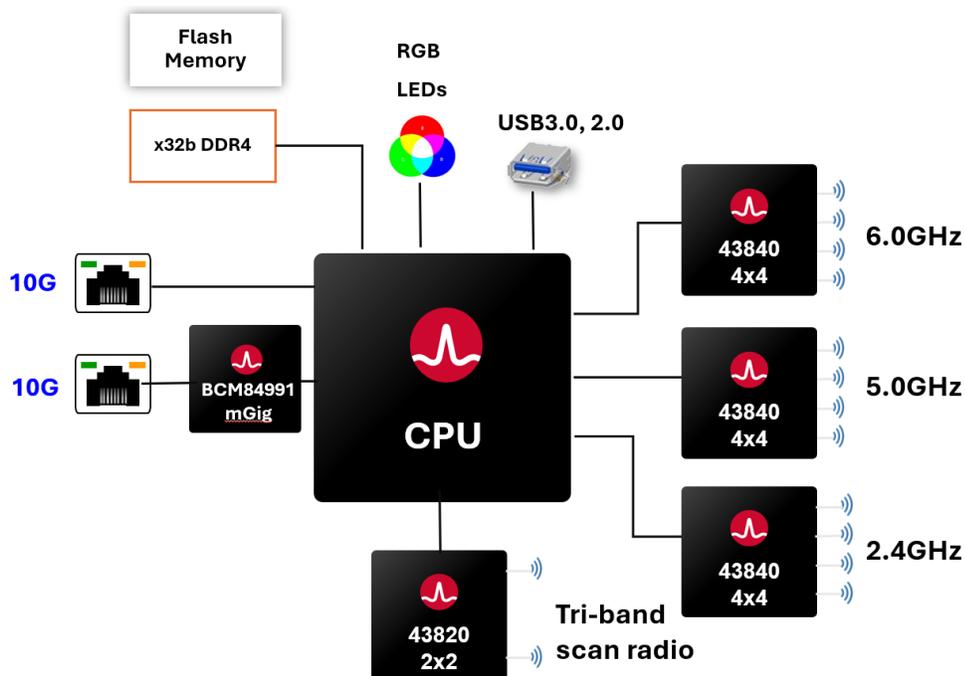
The BCM43840 and BCM43820 support 320 MHz channels in the 6 GHz band, 160 MHz in the 5 GHz band, and 40 MHz in the 2.4 GHz band.

BCM43840 Block Diagram



BCM43840 (6 GHz, bw320, 5G bw160, 2.4 GHz bw40)

Typical Wi-Fi 8 Access Point Block Diagram



BCM43840 and BCM43820 Specifications

Parameter	Details
Wi-Fi Standards	IEEE 802.11bn (Wi-Fi 8) Release 1.0 compliant IEEE 802.11be (Wi-Fi 7) Release 1.0 compliant IEEE 802.11ax (Wi-Fi 6 & 6E) compliant IEEE 802.11 a/b/g/n/ac
Spatial Streams	Quad-stream 4x4 (43840) and Dual-stream 2x2 (43820)
Spectral Bands	2.4 GHz, 5 GHz, 6 GHz
Highest Modulation Rate	4K-QAM
Channel Bandwidths	20/40/80/160/320 MHz
Wi-Fi Peak Speeds	Maximum PHY rate of 11.5 Gbps (43840) and 5.76 Gbps (43820)
Multi-Link Operation (MLO)	Supported on all bands
OFDMA	Supported in both uplink and downlink direction
MU-MIMO	Supported in both uplink and downlink direction
Wireless Security	Comprehensive wireless network security support that includes WPA, WPA2, WPA3 (with 192-bit Suite B encryption), AES encryption/decryption, TKIP and IEEE 802.1X support
Operating Temperature	0°C to 70°C (commercial temperature) and -40°C to 85°C (industrial temperature)

Ordering Information

Part Number	Description
BCM43840A0KEFBG BCM43840A0IEFBG	4x4 802.11bn (Wi-Fi 8) Up to 320 MHz bandwidth (6 GHz), Up to 160 MHz bandwidth (5 GHz) Up to 40 MHz bandwidth (2.4 GHz)
BCM43820A0KEFBG BCM43820A0IEFBG	2x2 802.11bn (Wi-Fi 8) Up to 320 MHz bandwidth (6 GHz), Up to 160 MHz bandwidth (5 GHz) Up to 40 MHz bandwidth (2.4 GHz)