Broadcom Announces Availability of Second-Generation Wi-Fi 7 Wireless Connectivity Chips

June 20, 2023

Connected by Broadcom, new Wi-Fi chipset solutions enable next generation smartphone and access point platforms to expand market adoption

SAN JOSE, Calif., June 20, 2023 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today announced sample availability of its second generation of wireless connectivity chipset solutions for the Wi-Fi 7 ecosystem, spanning Wi-Fi routers, residential gateways, enterprise access points, and client devices. The new chips build on the ecosystem of products with Broadcom's first-generation Wi-Fi 7 chips while delivering additional functionality to a wider market.

The first chip, the BCM6765, is a highly-optimized residential access point chip that supports 320 MHz 2-stream Wi-Fi operation. This new platform system-on-chip (SoC) allows the productization of Wi-Fi 7 mass-market access points and smart repeater solutions which span the spectrum of cost, form factor, and performance. The second chip, the BCM47722, is an enterprise access point chip that also supports 320 MHz 2-stream operation along with dual IoT radios that support simultaneous operation for Bluetooth Low Energy (BLE), Zigbee, Thread, and Matter protocols. This SoC addresses the growing needs of Internet of things (IoT) applications in the enterprise Wi-Fi market. The third chip, the BCM4390, is a low-power Wi-Fi, Bluetooth, and 802.15.4 combo chip designed for use in mobile devices such as handsets and tablets. It supports 160 MHz 2-stream Wi-Fi operation, dual Bluetooth, and Zigbee, Thread, and Matter protocols to service a broad set of mobile markets.

Wi-Fi 7 is designed from the ground up for the newly available 6 GHz band and brings multi-gigabit wireless broadband to your homes and hands. Wi-Fi 7 devices based on Broadcom's first-generation products have already reached the market, and the second-generation of chips announced today builds on this momentum to significantly expand the range of products using Wi-Fi 7 wireless connectivity.

Wi-Fi 7 will experience rapid adoption, driven by both increased bandwidths, and by multi-link operation (MLO), which allows devices to aggregate channels and rapidly switch between channels. This is an ideal feature for high-density, congested networks and guarantees commercial-grade quality of service with optimal application latency. Broadcom's Wi-Fi 7 ecosystem includes support for 3-link MLO, which reduces latency by 50% compared to typical 2-link implementations. In addition, Broadcom Wi-Fi 7 supports the proprietary SpeedBooster™ feature, which allows 160 MHz devices, such as mobile devices based on the BCM4390, to use the full 320 MHz access point capacity, thereby doubling Wi-Fi connection speed. Wi-Fi 7 will also use Automatic Frequency Coordination (AFC) for optimal spectrum allocation to enable high-power access points and extend 6-GHz transmit range in both indoor and outdoor environments. In all, Broadcom Wi-Fi 7 delivers fast, high-quality video streaming and more responsive gaming, and improves other applications that require reliable speeds in congested environments.

Additionally, both the BCM47722 and BCM4390 support the latest Bluetooth 5.4 standard and are forward-compatible with the draft Bluetooth Channel Sounding specification for location services. This brings a wide range of new features both to mobile handsets, such as secure vehicle keyless entry, and enterprise access points, including support for asset tracking and electronic shelf labels. In addition, both chips support Zigbee, Thread, and Matter, allowing them to interoperate with the growing number of residential and enterprise IoT devices.

"High-speed, low-latency wireless connectivity is essential for our homes and offices alike. We launched a complete Wi-Fi 7 ecosystem for mobile handsets and residential and enterprise networks last year to power the next generation of digital experiences," said Vijay Nagarajan, vice president of marketing for the Wireless Communications and Connectivity Division at Broadcom. "With these three new products, Broadcom enables its customers to build a diverse set of best-in-class Wi-Fi 7 products across a wide range of markets."

"Device capabilities continue to evolve and expand, and at the same time, new services and applications are arriving that require cloud, edge, and on-device processing," said Phil Solis, research director for connectivity and smartphone semiconductors at IDC. "Wi-Fi 7 and MLO are rapidly becoming a must in new devices and access points, and Bluetooth LE Audio, Bluetooth Channel Sounding, Zigbee, and Thread round off support for new features and Matter."

"Wi-Fi 7 revenue for both the Consumer Wi-Fi Infrastructure and Enterprise Access Point markets will exceed that of any other Wi-Fi technology in five years, mostly coming from Wi-Fi systems based on 6 GHz devices," said Chris DePuy, technology analyst at 650 Group. "Additionally, we expect that IoT device shipments will grow at over 50% CAGR in the Enterprise market in the next several years. Therefore, Broadcom's support for Bluetooth, Zigbee, and other wireless interfaces is critical."

PRODUCT HIGHLIGHTS

Broadcom's Wi-Fi 7 ecosystem product portfolio includes the BCM6765, BCM47722, and BCM4390.

The BCM6765 is optimized for the residential Wi-Fi access point market. Key features include:

- Integrated Quad-Core ARMv8 CPU with 10G Ethernet PHY
- Dual 2x2 tri-band (2.4, 5 and 6 GHz) capable radios that support simultaneous operation in any band
- Integrated 2.4 GHz power amplifiers and support for Digital Pre-distortion (DPD) external FEMs for reduced power consumption
- 4096-QAM modulation and 320 MHz channel bandwidth for 8.64 Gbps PHY rate
- Multi-link operation (MLO) with up to 3-link support on SoC and SpeedBooster™ support
- Compliance to IEEE, WFA Wi-Fi 7 and Automated Frequency Coordination (AFC) specifications

The BCM47722 is an enterprise access point platform SoC supporting Wi-Fi 7, Bluetooth Low Energy, and 802.15.4 protocols. Key features include:

- Integrated Quad-Core ARMv8 CPU with 10G Ethernet PHY
- Dual 2x2 tri-band (2.4, 5 and 6 GHz) capable radios that support simultaneous operation in any band
- Integrated 2.4 GHz power amplifiers and support for Digital Pre-distortion (DPD) external FEMs for reduced power consumption
- 4096-QAM modulation and 320 MHz channel bandwidth for 8.64 Gbps PHY rate
- Multi-link operation (MLO) with up to 3-link support on SoC and SpeedBooster™ support
- Integrated dual radio Bluetooth Low-Energy, Thread and Zigbee Support
- Compliance to IEEE, WFA Wi-Fi 7 and Automated Frequency Coordination (AFC) specifications, as well as the Bluetooth 5.4 standard and future draft specifications such as Channel Sounding

The BCM4390 is a highly-integrated Wi-Fi 7 and Bluetooth 5 combo chip optimized for mobile handset applications. Key features include:

- Dual radio that supports simultaneous 2-stream 2.4 GHz and 2-stream 5/6 GHz Wi-Fi 7 operation
- 4096-QAM modulation and 160 MHz channel bandwidth for 3.2 Gbps PHY rate
- Integrated Bluetooth Classic and Low-Energy, Thread and Zigbee Support
- Client multi-link operation (MLO) and SpeedBooster™ support
- Compliance to IEEE and WFA Wi-Fi 7 standards, as well as the Bluetooth 5.4 standard and future draft specifications such as Channel Sounding

AVAILABILITY

Broadcom is currently sampling its second-generation Wi-Fi 7 chips to early access partners and customers in retail, enterprise and smartphone, service provider, and carrier segments. Please contact your local Broadcom sales representative for samples and pricing.

SUPPORTING QUOTES

“Arcadyan is proud to expand our collaboration with Broadcom to build out our portfolio of Wi-Fi 7 solutions for the service provider market. Broadcom’s modular approach of Wi-Fi 7 solutions enables a full spectrum of residential gateways and extenders options which can be optimized for performance, form factor, and cost and gives us the flexibility to address our customers' specific needs.” -- Raymond Hsiung, Vice President, Sales & Marketing, Arcadyan

“Asus will continue its strategic partnership with Broadcom in delivering a 2nd generation of Wi-Fi 7 routers, mesh solutions, and extenders based on the BCM6765 SoC. The high level of integration on this SoC is critical to enabling small form factor, low power solutions to the mass-market retail segment.” -- Tenlong Deng, Corporate Vice President, ASUSTek Computer Inc.

“The network is increasingly strategic to the operations and success of enterprises, and we’re excited about the potential of Wi-Fi 7 to accelerate and empower organizations to succeed in the Infinite Enterprise. As the number of connected devices grows, real-time monitoring and management of IoT devices in enterprise networks becomes increasingly important to ensure secure and smooth operations. The combination of our industry-leading networking solutions and Broadcom’s highly-integrated and best in class Wi-Fi 7 and IoT-ready SoC will collectively raise the bar on performance and speed.” -- Nabil Bukhari, Chief Technology Officer and Chief Product Officer, Extreme Networks

“Sercomm is excited to work with Broadcom for Wi-Fi 7 based products with this new highly integrated SoC. Sercomm’s industry leadership in delivering next generation broadband and Wi-Fi platforms together with Broadcom’s advanced Wi-Fi 7 technology enables us to be a trusted supplier to Tier 1 service providers worldwide.” -- Ben Lin, President, Sercomm Corporation

“Global availability of the 6 GHz band for Wi-Fi operations is enabling new opportunities for companies like Broadcom to innovate using this critical swath of unlicensed spectrum. With steady adoption of Wi-Fi 6E – more than 915 Wi-Fi 6E certified devices and more than 463 million Wi-Fi 6E devices shipping in 2023 – and excitement mounting for Wi-Fi 7, users are already benefiting from reduced latency, increased capacity, and improved efficiencies. Coming availability of Wi-Fi CERTIFIED 7 will drive massive adoption of next generation Wi-Fi which will deliver even more advanced experiences in 2.4 and 5 GHz, and countries that make the full 6 GHz band available will deliver maximum benefit to users.” -- Kevin Robertson, President and CEO, Wi-Fi Alliance

About Broadcom
Broadcom Inc. (NASDAQ: AVGO), a Delaware corporation headquartered in San Jose, CA, is a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. Broadcom’s category-leading product portfolio serves critical markets including data center, networking, enterprise software, broadband, wireless, storage and industrial. Our solutions include data center networking and storage, enterprise, mainframe and cybersecurity software focused on automation, monitoring and security, smartphone components, telecoms and factory automation. For more information, go to https://www.broadcom.com.

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Source: Broadcom Inc.