Broadcom Introduces FiFEM, The World's First Wi-Fi RF FEM with Filter Integration Optimized for Wi-Fi 7 Access Points

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Connected by Broadcom, the Wi-Fi access point platform with FiFEM delivers up to 40% reduction in RF front end module power

SAN JOSE, Calif., June 12, 2023 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today announced the availability of its FBAR integrated front end module (FiFEM™) devices for Wi-Fi access point (AP) applications, spanning Wi-Fi routers, residential gateways, and enterprise APs. The FiFEM devices incorporate best-in-class FBAR filter technology to provide superior 5 GHz and 6 GHz band coexistence and low in-band insertion loss while significantly reducing the bill of materials (BOM) at the RF front end. Additionally, the devices feature state-of-the-art non-linear power amplifier (PA) design optimized for Broadcom's Wi-Fi SoC Digital Predistortion (DPD) operation, enabling up to 40% reduction in RF front-end power.

The availability of the 6 GHz band for Wi-Fi has unlocked new opportunities for businesses and consumers across the globe through faster speed, lower latency, and higher capacity. To date, more than 60 countries have opened the 6 GHz band for Wi-Fi use providing the airspace for connected Wi-Fi 6E and Wi-Fi 7 devices to maximize their capabilities.

With the growing adoption of 6 GHz Wi-Fi in the market, the coexistence of 5-GHz and 6-GHz signals is a critical consideration for Wi-Fi 6E and Wi-Fi 7 AP designs. Further, the power dissipation in the 5 GHz and 6 GHz RF chains can be substantial, especially in a conventional tri-band 4x4 Wi-Fi AP system where RF power can reach 10 Watts per band. With RF filter integration and adaptive DPD, Broadcom's FiFEM devices are highly optimized for Wi-Fi 7 AP systems delivering unprecedented size, performance, and efficiency.

FiFEM Product Highlights

- Integration of 2nd generation Wi-Fi FBAR filter
  - Provides superior 5-GHz/6-GHz band isolation and efficiency
  - Reduces RF BOM and board space
  - Avoids yield loss from external filter mismatch
- First non-linear FEM qualified for Broadcom's Wireless FEM Active Management (WiFAM) Gen2 using advanced DPD technology with dynamic bias handling
  - Enables up to 40% reduction in RF front-end power
  - Enhances gateway energy efficiency via average power consumption
- Qualified to meet Wi-Fi 7 AP system specs with BCM6726/BCM67263 SoC reference designs
- Four (4) products in conventional FEM package (3x5 mm^2)
  - AFEM-W760-HP1 (6 GHz, +25dBm)
  - AFEM-W760-MP1 (6 GHz, +23dBm)
  - AFEM-W750-HP1 (5 GHz, +25dBm)
  - AFEM-W750-MP1 (5 GHz, +23dBm)

"Last year, the market for Wi-Fi 6E and Wi-Fi 7 infrastructure devices like Access Points, Routers and broadband equipment that supports Wi-Fi was just over two million units. Over the next five years, we expect consumer and enterprise Wi-Fi infrastructure device shipments to exceed 300M units. We expect the total market opportunity for Wi-Fi infrastructure devices over the same time frame to approach 1.5B units," said Chris DePuy, technology analyst at 650 Group. "As enterprises and consumers seek to upgrade their Wi-Fi experience, much of this billion-plus unit market will transition to support 5 and 6 GHz RF capabilities."

"Broadcom has shipped billions of highly integrated RFFE modules to the cellular market. Our Wi-Fi 7 FiFEM devices leverage this deep integration expertise via our FBAR and high efficiency PA technology," said Youngwoo Kwon, senior vice president and general manager of the Wireless Semiconductor Division at Broadcom. "We're excited to contribute to the widespread deployment of Wi-Fi 7 systems with our industry-leading performance, low power, high efficiency 5-GHz and 6-GHz FiFEM devices."

Availability

Broadcom has begun shipping samples of the AFEM-W750 and AFEM-W760 to its early access customers and partners. Please contact your local Broadcom sales representative for samples and pricing.

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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