Broadcom Introduces Industry's First 6G Digital Front-End SoC for Massive MIMO

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New 0.4-8.5GHz CMOS radio digital front-end solution delivers breakthrough RF performance and power consumption for next-generation 5G Advanced and 6G networks

PALO ALTO, Calif., Feb. 19, 2026 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO), a global technology leader that designs, develops and supplies semiconductor and infrastructure software solutions, today announced the launch of BroadPeak™, a highly integrated radio digital front-end (DFE) SoC device, unlocking new possibilities for 5G massive multiple-input multiple-output (MIMO) and remote radio head (RRH) applications and paving the path for next-generation 5G Advanced and 6G wireless infrastructure. The device features state-of-the-art 5nm CMOS DFE and ADC/DAC blocks on a single chip, delivering up to 40% power reduction over existing solutions for massive MIMO and RRHs. With breakthrough RF performance and extended operating frequency range from 400 MHz to 8.5 GHz, BroadPeak is the first true 5G Advanced and 6G standard product for massive MIMO and RRHs.

Massive MIMO is a key enabling technology for 5G designed to boost the coverage, capacity and user throughput of mobile networks. As data consumption continues to increase driven by AI-powered applications and the need for better consumer experiences, mobile operators rely on new spectrum and radio architectures to improve network capacity and throughput. BroadPeak is the first radio digital front-end solution that meets the technical requirements for the upcoming 5G Advanced standard using the higher frequency n104 band from 6.425 to 7.125 GHz, as well as the 6G standard using the upper mid-band from 7 to 8.5 GHz. With BroadPeak, mobile operators and OEMs can now begin designing the next-generation high-capacity, high-throughput network to support a new era of AI-driven applications and personalized digital experiences.

BroadPeak BCM85021 Highlights

- 32T32R8FB (other SKUs also for 8T8R2FB and 16T16R4FB)
- Scalable, RF carrier frequency range of 400MHz to 8.5 GHz
- Integrated digital predistortion, carrier aggregation, crest factor reduction & antenna front-end, digital down-conversion, digital up-conversion, gain control, and filtering
- iBW up to 860 MHz
- oBW up to 800MHz
- ACLR with DPD better than -50dBc
- Support full spectrum of carrier aggregation
- DPD learning time 100x faster than typical reference
- ADC/DAC sampling rates up to 19.6 GS/s
- Receivers (RX): 100 MHz to 860 MHz, 1.6 GHz
- TX and FB: 200 MHz to 1.6 GHz, 3.2 GHz
- Gain control range: RX/FB: 30 dB, TX: 25 dB

"With 5G New Radio expanding into the 6 GHz spectrum and above to fuel the surge of AI and data-heavy applications, the infrastructure behind it must evolve. Our next-generation Massive MIMO SoCs are engineered to deliver the uncompromising linearity and power efficiency required to power the future of connectivity," said Vijay Janapaty, vice president and general manager of Broadcom's Physical Layer Products Division. "The BroadPeak SoC integrates DFE and AFE with high-linearity data converters at 8.5 GHz, delivering up to 40% greater efficiency for next-generation base stations."

"As mobile networks advance toward 5G Advanced and 6G, the industry requires deep, open, and highly optimized partnerships across silicon platforms," said Raghib Hussain, President and CEO of Altera. "Our collaboration with Broadcom and the successful interoperability testing between Altera Agilex™ 7 FPGAs and Broadcom BroadPeak SoCs validate a scalable, high-performance foundation for next-generation radio platforms, enabling equipment manufacturers and operators to innovate with flexibility and confidence."

"As RAN evolution demands greater intelligence, production-grade software is now as vital as the underlying silicon. By co-developing the BroadPeak SDK with Broadcom, Hitachi GlobalLogic is simplifying hardware complexity and exposing advanced DFE capabilities. We are ensuring that next-gen mMIMO, RRH and Open RAN architectures are not just innovative, but deployment-ready at scale," said Siba Satapathy, Chief Growth & Transformation Officer, Hitachi GlobalLogic.

Availability

Broadcom has begun shipping samples of BroadPeak BCM85021 to its early access customers and partners. Please contact your local Broadcom sales representative for samples and pricing.

About Broadcom

Broadcom Inc. (NASDAQ: AVGO) is a technology leader that designs, develops, and supplies semiconductors and infrastructure software for global organizations' complex, mission-critical needs. Broadcom combines long-term R&D investment with superb execution to deliver the best technology, at scale. Broadcom is a Delaware corporation headquartered in Palo Alto, CA. For more information, visit www.broadcom.com.

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