Broadcom Introduces World's Lowest Power L1/L5 GNSS Receiver for Mobile and Wearable Applications

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Third generation dual-frequency GNSS receiver features advanced multipath mitigation, L5 acquisition capability, LTE filtering, and jamming protection

SAN JOSE, Calif., Sept. 22, 2021 (GLOBE NEWSWIRE) -- Broadcom Inc. (NASDAQ: AVGO) today announced the world's lowest power L1/L5 GNSS receiver chip, the BCM4778, optimized for mobile and wearable applications. Equipped with the latest GNSS innovations, this third-generation chip is 35% smaller and consumes 5 times less power than the previous generation.

Dual-frequency GNSS continues to be an important location feature for modern mobile and wearable devices as it provides greater positioning accuracy for location-based services (LBS) applications. The advanced L5 signal enables sidewalk-level accuracy for pedestrian navigation in urban environments, as well as lane-level accuracy for vehicle navigation.

Reduction in GNSS power consumption is crucial to extending the battery life of a mobile or wearable device. Compared to GNSS receivers used in integrated platforms, Broadcom's single-chip BCM4778 delivers significantly lower power consumption and higher performance while offering more advanced GNSS features, such as the next-generation Grid Tracking™ urban multipath mitigation technology. Further, the BCM4778 increases the GNSS always-on battery lifetime on a smart watch by 30 hours when compared to the previous generation chip operating on a 300mAh battery. The extended battery life benefit helps drive new experiences in smart watches and phones. For example, smart watches can keep the GNSS always-on for fitness applications for multiple days on a single battery charge.

In addition, the BCM4778 features fully integrated LNAs for L1 and L5 bands, which reduces RF front-end BOM costs and footprint requirements, ideal for space-constrained applications. The chip offers immense flexibility to smart watch and phone designers with its small size. Having the ability to place the BCM4778 closer to the antenna helps improve signal reception and thereby enhance the overall GNSS performance.

Product Highlights

- 7nm CMOS technology
- Typical power consumption
  - 4mW L1 band only
  - 6mW L1+L5 simultaneous
- FCBGA package
- New Grid Tracking™ technology
  - Advanced multipath mitigation
  - Continuously tracks the full L5 channel
- Capable of L5 acquisition
  - Increased processing capability and throughput
- Advanced LTE filtering and jamming mitigation
  - Enhanced LTE Band 13 and Band 14 filtering
  - Spoofing and jamming detector
  - Jamming mitigation through multiband and multi constellation
- Reduced BOM cost and footprint
  - Flexibility in using internal LNAs
  - Optional operation without interstage SAW filters
  - Integrated switching regulator with direct connect to battery

"With the launch of this third generation dual-frequency GNSS receiver chip, Broadcom continues the tradition of raising the bar for mobile GNSS," said Vijay Nagarajan, vice president of marketing for the Wireless Communications and Connectivity Division at Broadcom. "Always-on dual frequency GNSS is a key request from mobile and wearable OEMs, and we are thrilled to deliver it."

"We are excited to see this impressive power reduction, combined with the L5 Grid Tracking technology in the new Broadcom GNSS chip. This will increase the impact of Google's 3DMA ray-tracing for urban multipath mitigation," said Frank van Diggelen, principal software engineer at Google.

"Consumer electronic companies have been faced with the challenge of managing power consumption versus performance, often having to choose one over the other. Broadcom's innovative approach to the BCM4778 allows their customers to realize improvements on both fronts," said Ramon T. Llamas, research director for mobile devices at IDC. "The result: device manufacturers can enable new experiences and run applications over a sustained period of time. In addition, by reducing its BOM cost and its physical footprint, Broadcom is enabling further benefits from cost savings and design configurability."

Availability

Broadcom is currently sampling the BCM4778 to its early access partners and customers. Please contact your local Broadcom sales representative for samples and pricing.

More information on Broadcom's BCM4778 product is available online at:

https://www.broadcom.com/products/wireless/gnss-gps-socs/bcm4778

Additionally, Broadcom will be presenting further information on the chip in the Session B5, Panel: GNSS Chipset Technology – Trends, Opportunities and Challenges panel at the ION GNSS+ 2021 on September 24th.

About Broadcom
Broadcom Inc. (NASDAQ: AVGO) 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 cyber security 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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