Broadcom Introduces New Location Architecture with Advanced Multi-Constellation and Indoor Positioning Support

Smartphone Location Platform Delivers 10X Improved Acquisition Performance and Leverages Broadcom Wireless Connectivity for Indoor Positioning

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News Highlights:

- 10x acquisition performance improvement delivers faster and more accurate position computation
- Leading 40nm CMOS process reduces power consumption by 50 percent and board area by 44 percent
- Ability to leverage sensors, Wi-Fi, Bluetooth and NFC enables innovative consumer applications
- Integration on recently announced Broadcom BCM28155 platform brings feature-rich location functionality to Android 4.0 smartphones

Broadcom Corporation (NASDAQ: BRCM), a global innovation leader in semiconductor solutions for wired and wireless communications, today introduced a new location architecture to provide more responsive outdoor and indoor positioning capabilities for smartphone devices. With proven third-generation multi-constellation support and tight integration with sensor components and Broadcom's industry-leading connectivity sub-system, the new solution opens the door to innovative applications, such as indoor positioning and place-based mobile commerce. For more news, visit Broadcom's Newsroom.

The architecture features a new Global Navigation Satellite System (GNSS) chip that significantly reduces time-to-first-fix (TTFF) for outdoor positioning applications, cutting the time smartphone users have to wait when first checking their position. The platform solution also uses data from inertial sensors, Wi-Fi access points (including those based on recently announced 5G WiFi) and future technologies such as Bluetooth beacons to enable ground breaking indoor positioning capabilities, such as "personal shopper" applications that can direct users to specific stores within shopping malls, and even specific shelves within those stores. In addition, platform integration with NFC enables smarter, more secure mobile payments, with users able to specify countries, cities or even stores where digital wallets can be used.

The Broadcom® BCM4752 GNSS chip provides the industry's most advanced multi-constellation support by simultaneously collecting data from four satellite constellations (GPS, GLONASS, QZSS and SBAS) and using the best received signals, resulting in faster searches and more accurate real-time navigation. Building on the success of previous GNSS chips, Broadcom's multi-constellation technology, coupled with advanced signal processing, provides faster positioning performance for improved user experience, especially in challenging urban environments where buildings and obstructions can dramatically impact accuracy and time-to-fix.

The new chip and accompanying software benefit from tight integration with Broadcom's InConcert® wireless connectivity sub-system, featuring the most advanced and complete technology offering in the industry. By developing its various connectivity components to operate as a unified system, Broadcom can offer more expansive location features that extend beyond GNSS capabilities.

Key Features and Benefits:

- Enhances performance and reliability:
  - Industry-breakthrough acquisition engine with advanced multipath mitigation techniques provides faster time-to-first-fix performance in challenging environments, as well as a more accurate urban navigation experience.
  - Multi-constellation capability collects data from four satellite constellations (GPS, GLONASS, QZSS and SBAS) simultaneously and uses the best received signals, resulting in faster signal searches and more accurate real-time navigation.

- Lowest board space, power consumption and cost:
  - Fabricated in 40nm process, the BCM4752 is the industry's smallest size GNSS chip, accounting for 44 percent less board space in a device.
  - Integration of key components such a low noise amplifier (LNA) enables lowest bill of materials cost.
  - The BCM4752 uses 50 percent less power than previous generations, allowing location-aware applications to
remain active for longer periods of time.

- New applications such as "geofencing" that provide alerts or services based on location can be completely off-loaded from the smartphone’s CPU for ultra-low system power operation.

- Opens doors to new applications, with a proven software platform capable of:
  - Ground-breaking indoor positioning through integration of Wi-Fi (including 5G WiFi), Bluetooth low energy, NFC and handset inertial sensor data into positioning applications.
  - Industry-leading urban navigation by applying handset inertial sensor readings into the position computation.
  - Best in class assisted GNSS (AGNSS) with both GPS and GLONASS assistance data available worldwide from Broadcom’s hosted reference network.

Availability

The BCM4752 is production ready and shipping to early access partners.

For ongoing news, visit Broadcom's Newsroom, read the B-Connected Blog, or visit Facebook or Twitter. And to stay connected, subscribe to Broadcom’s RSS Feed.

Quotes:

Scott Pomerantz, Broadcom’s Vice President & General Manager, GPS

“The astounding growth of mobile devices is driving new opportunities for inventive applications that make these devices even smarter and more location aware. As the leader in GNSS and wireless connectivity, Broadcom is ideally positioned to drive this next wave of innovation. As our third generation multi-constellation solution, the BCM4752 and advanced location software bring together GNSS, sensors, Wi-Fi, Bluetooth and NFC to make these applications a reality.”

Patrick Connolly, Senior Analyst, Telematics and Navigation, ABI Research

“Demand for GNSS-enabled consumer devices continues to grow strongly with new vertical markets providing new opportunities. As consumers increasingly turn to their mobile devices for advanced navigation assistance, advances to signal processing, multi-constellation support and indoor location and positioning applications and technologies will only propel this demand further.”

About Broadcom

Broadcom Corporation (NASDAQ: BRCM), a FORTUNE 500® company, is a global leader and innovator in semiconductor solutions for wired and wireless communications. Broadcom® products seamlessly deliver voice, video, data and multimedia connectivity in the home, office and mobile environments. With the industry’s broadest portfolio of state-of-the-art system-on-a-chip and embedded software solutions, Broadcom is changing the world by Connecting everything®. For more information, go to www.broadcom.com.

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