10 Bluetooth Low Energy Profiles for Rapid Design of Consumer Medical, Fitness, Alert Applications and More

Texas Instruments launched ten Bluetooth low energy technology profiles with associated sample applications to boost market development of Bluetooth low energy-compliant sensor devices. The Bluetooth low energy application software is a part of TI's BLE-Stack, and is available royalty-free to all using TI's CC2540 Bluetooth low energy system-on-chip (SoC). TI's BLE-Stack is available today at www.ti.com/ble-pr, and a corresponding CC2540DK-MINI development kit is available on TI's e-store. An enhanced, new CC2540DK development kit will also be available in mid September, providing a flexible platform for software development, extensive RF performance assessment and packet-sniffing testing.

TI has achieved Bluetooth Special Interest Group (SIG) certification for find-me, health thermometer, heart rate, and proximity profiles. The updated BLE-Stack also includes support for to-be-adopted profiles such as blood pressure sensor, remote control (soft command), watch (time/network availability), emulated keyboard/dongle (HID), and time and alert notification profiles. TI's updated BLE-Stack also adds support for Bluetooth low energy central and peripheral configurations. When set to the central configuration, the CC2540 SoC can support up to three simultaneous connections. For example, an end user can run a heart rate monitor, blood pressure sensor and health thermometer – all connected to one central health device.

"We are proud to be the only company to offer this range of profiles to date, allowing our customers to realize their product ideas more quickly and participate in early interoperability testing with their devices against dual-mode devices," said Sid Shaw, product marketing manager, Low-Power RF, TI. "Our BLE-Stack adds support for adopted profiles as well as profiles expected to be adopted in the near future. With additional tools updates and our new extensive development kit, designers will now have access to the latest and greatest tools to develop single-mode Bluetooth low energy applications."

"Bluetooth v4.0 technology is experiencing incredible traction, and the market is hungry for new devices and use cases," said Michael Foley, Ph.D., executive director, Bluetooth SIG. "As shown with its certifications, new profile offerings and updated Bluetooth low energy stack, we are pleased to see TI playing a critical role in delivering Bluetooth v4.0 with low energy capabilities to new places – from health monitoring to fitness equipment, alert notifications and more."

In addition to attaining Bluetooth SIG Certification and interoperability testing, TI's BLE-Stack has undergone comprehensive testing against TI's dual-mode Bluetooth solutions. TI provides single-mode Bluetooth low energy solutions for sensor

applications and dual-mode solutions for mobile handheld devices, including the BlueLink™ 7.0 (BL6450), WiLink™ 6.0 (WL127x) and WiLink 7.0 (WL128x) offerings. With both sides of the link, TI delivers a fully tested, robust Bluetooth low energy ecosystem.

Key features and benefits: TI BLE-Stack Bluetooth low energy application software
• Early realization of single mode Bluetooth low energy applications
o Support and sample applications for ten profiles
o Royalty-free software available to all using TI's CC2540 Bluetooth low energy SoC
• Support for Bluetooth low energy central device, with up to three simultaneous connections
• Development framework for low-power, small-form-factor central applications
o No external microcontroller required
o New GAP central role profile for single-chip central Bluetooth low energy applications
• Free tool for testing of Bluetooth low energy peripheral applications
o Updated BTool includes support for multiple connections, encryption, pairing, bonding
• Reference design and development kit pre-integrated with TI TPS62730* step down converter, which reduces the current drawn from the battery by as much as 20 percent (CR2032 coin cell).

Key components: CC2540DK development kit, available in mid September
Complete hardware performance test platform and generic software development environment helps developers get up and running with the CC2540 quickly and easily. The kit includes:
• Two CC2540-based RF evaluation modules
• One CC2540-based USB dongle
• General purpose development boards (SmartRF05EB)
• Software and hardware prototyping, cables, antennas and documentation

* Optimized for ultra-low-power applications, the CC2540 SoC can be combined with TI's recently announced TPS62730 DC-DC companion solution. As a step-down converter for high efficient voltage conversion and an integrated bypass switch, the TPS62730 saves power and extends application run time.

www.ti.com [1]

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