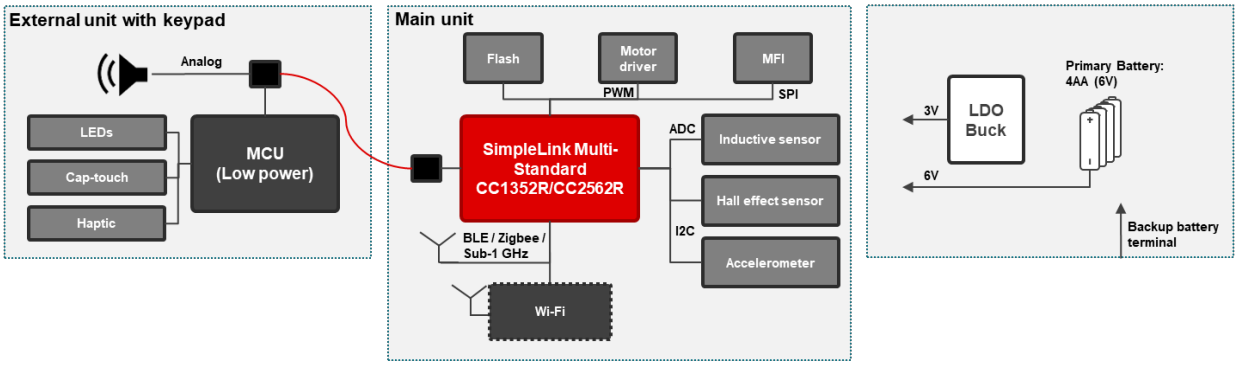
Electronic Smart Locks: Ultra-low power and Multi-Standard operation



Electronic door locks with integrated connectivity offer new possibilities such as controlling your door directly from your phone with Bluetooth low energy, integrating with existing home automation systems using Sub-1 GHz, Zigbee, or Thread, and monitoring your door from anywhere in the world with Wi-Fi. The typical challenge with connected electronic door lock designs is maintaining low power operation to achieve maximum battery life while integrating multiple connectivity protocols for a robust network with remote user interface.

The SimpleLink Multi-Standard CC1352R/CC2652R devices offer a single-chip solution that supports BLE, Zigbee, Thread, and Sub-1 GHz operation with an integrated Arm-Cortex M4F application processor. The device is ultra-low power with 0.8uA in standby and has an integrated Sensor Controller core which provides a programmable interface to analog and digital sensors and is designed to reduce active power & maximize sleep time.

Features	Benefits	Resources
Integrated Arm-Cortex M4F application processor with: • Programmable, low power sensor interface • 12-bit ADC • I2C / I2C • And more…	Monitor tamper detection & door bolt status in low power manner to enable longer battery lifetime	Ultra-Low Power Designs With the CC13x2 and CC26x2 Sensor Controller SimpleLink™ Sensor Controller BoosterPack
TI 15.4-Stack Sub-1 GHz out-of-box star-network solution: • Network formation, discovery, joining and leaving • Supports large network up to 1000+ nodes • FCC/ETSI certification-ready • Frequency hopping and acknowledgments • Full end to end solution with ready to use gateway offering.	Reduce time to market, lower development costs, increase packet transmission success rates for optimized low power sensor network and longer battery life time; allows developer to focus on the end application thanks to a fully tested, pre-built Sub-1 GHz star-network solution. Runs on Ultra-low power SimpleLink wireless MCU.	Learn more about the TI 15.4-Stack SimpleLink Academy TI 15.4-Stack Project Zero
Bluetooth 5 high speed support (2Mbps)	2x faster over-the-air firmware updates minimize power consumption and extend battery life	www.ti.com/Bluetooth5
Concurrent multi-protocol operation on a single chip: powered by the Dynamic Multi-Protocol Manager	Run Sub-1 GHz or Zigbee concurrently with BLE on a single device to add smart phone connectivity to an existing low power network	Connect Series: Dynamic Multi-Protocol Demo Dynamic Multi-protocol Manager Fundamentals
RSSI Connection Monitor	Locate the smart phone user by measuring the receiver signal strength (RSSI)	Connection Monitor Example
Industry's smallest, full-featured Bluetooth 5 solution: 2.7mm x 2.7 mm WCSP package option	Allows for small form factor designs to fit in space constrained door lock enclosures	Blog: Industry's smallest full-featured Bluetooth 5 solution

Read more about Smart Door Locks using the SimpleLink Platform
Learn more about the Access Control Panel with Capacitive touch Reference Design TIDM-1004
Learn more about the Battery Powered Smart Lock Reference Design with BLE provisioning TIDC-01005
See additional system parts at TI electronic smart lock reference design page

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