

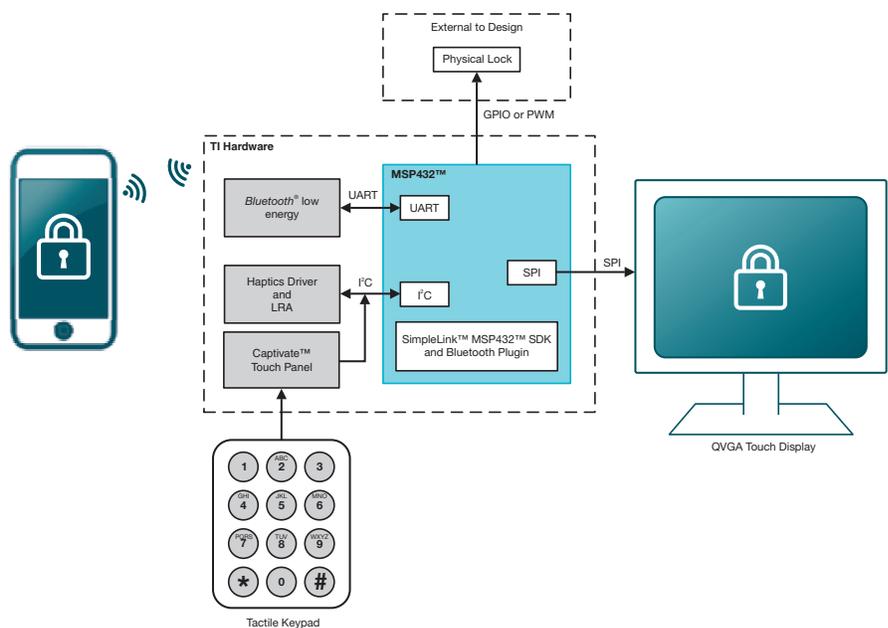
# SimpleLink™ MSP432™ MCU for electronic lock and intrusion HMI keypad



## Electronic Locks

### Electronic lock types defined

Most electronic locks are battery powered making battery life a key design challenge. Low power DC/DC with nano-amp quiescent current, load switches and an ultra-low-power microcontroller make extremely long battery life possible. Electronic smart locks are also incorporating more interactive RGBW LCD, capacitive touch and audio feedback to enable more intuitive and aesthetically pleasing devices while maintaining minimal power consumption. In residential homes, *Bluetooth®* low energy is often used for smart electronic lock designs.



## MSP432—Bluetooth® low energy solution—Customer benefits

### Most integrated

- Differentiate your security solution with Bluetooth low energy connectivity, robust capacitive touch and high-precision analog integration with MSP432 MCU and CC2640R2F network processor.

### Extend your battery life with lowest system power

- 660-nA standby, 80-µA/MHz MCU
- Lowest BLE radio, lowest power capacitive touch

### Quickest way to market

- Get started quickly and scale your platform of products by designing on a common SimpleLink SDK platform

## Collateral

### Existing collateral

- BLE Access Control Panel TI Design: [TIDM-1004](#)
- [SimpleLink MSP432 SDK](#) with *Bluetooth®* and Wi-Fi® plug-ins
- BLE access control panel [training video](#)
- BLE over-the-air update and LZ4 compression [training](#)
- Voice recognizer solution: [software and demo](#)
- [SimpleLink Academy](#) for MSP432 MCU
- MSP432 MCU + BLE [HomeKit™](#) and [demo](#)

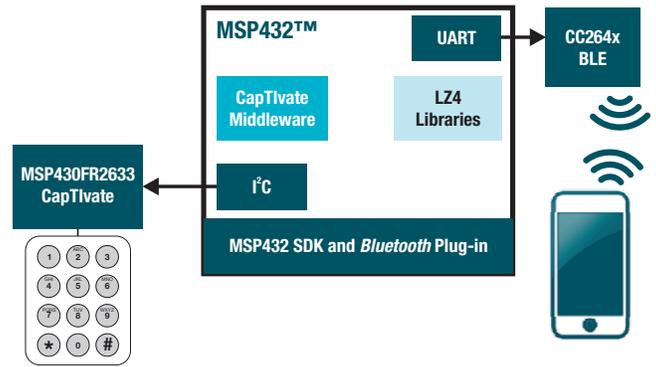
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## TI Design: Access Control Panel (TIDM-1004)

SimpleLink MSP432, SimpleLink CC264x and CapTivate™ technology

### Wireless Access Control Panel

- Proximity wake up
- LCD for keypad status, integrated haptics
- iOS/Android™ BLE app for remote access
- Optimized for ultra-low-power operation, <20-µA overall system (average)

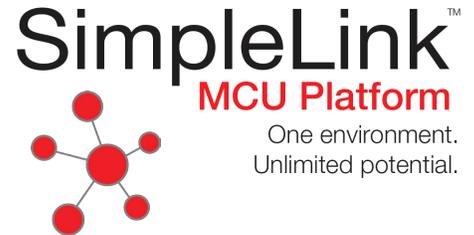


### MSP432 as wireless host MCU for

- CC2640 BLE network processor
- CapTivate touch controller
- HMI integration: QVGA display

### SimpleLink platform

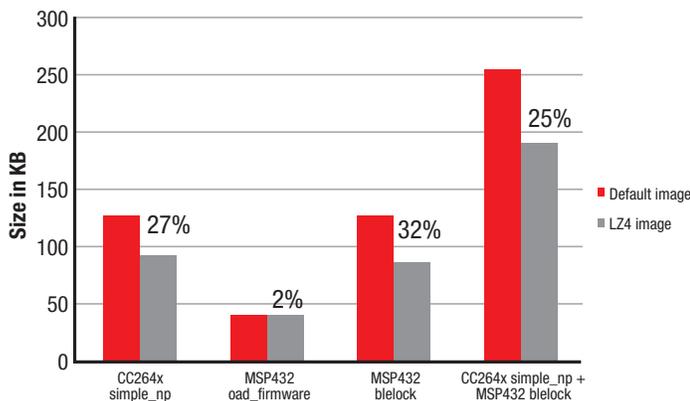
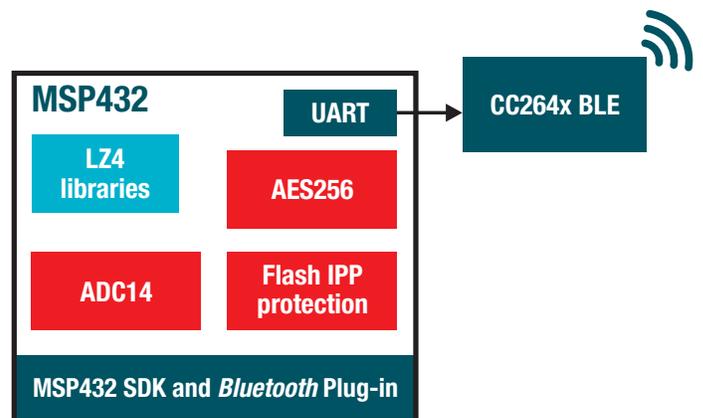
- **Portfolio:** MSP432 host and CC2640 network processor
- **Software:** MSP432 SDK and Bluetooth plug-in
- **Unified environment:** LaunchPad™ and CapTivate integration



## Enabling compression for over-the-air (OTA) updates

### Faster firmware updates and code portability

- Enabling ULP and faster OTA download with LZ4 compression
- Reduce code size and download time by **25 percent**
- Leverage 16-bit integrated ADC and scale up to 2 MB of programming resources with MSP432 MCU and CC2640 combo
- 100-percent code portability across SimpleLink platform via SDK and plug-ins



### Related applications

- Access control panels ([TIDM-1004](#))
- Glass-breakage detector, building gas detector
- Water meter, gas meter

### Resources

#### SimpleLink SDK Bluetooth plug-in

TI parts include:

- MSP432P401R, MSP432P4111 MCUs
- CC2650 (BLE) Wireless MCU

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