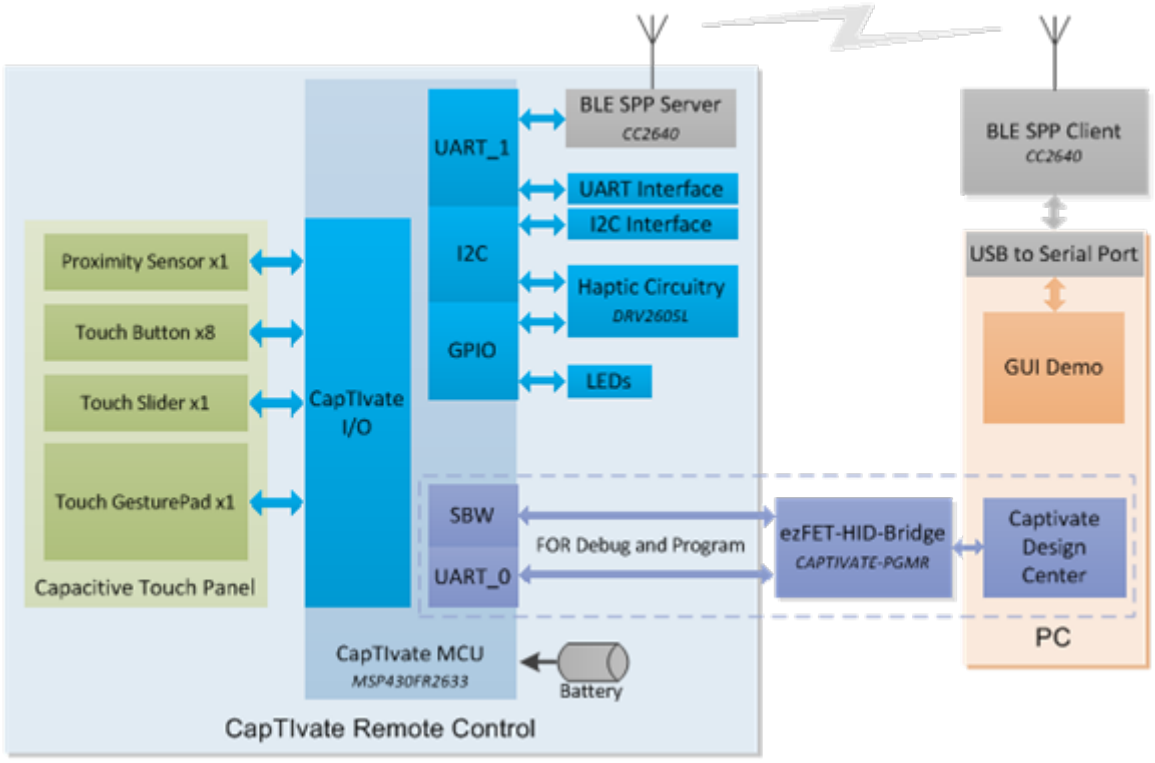
Technical Article

Touch It. Talk to It. Remote Control Solutions That Will Change How You Interact with the World

Welcome to the remote control of the future!

Imagine a sleek industrial design remote control with no physical buttons, still able to navigate the modern TV/STB user interfaces effectively. Capacitive touch and voice technology enables this. Users can easily, scroll and navigate menus with a gesture pad, which can detect the direction gestures as well as gestures such as single tap, double tap etc. With ultra-low power grip detection operating at < 5uA, the remote can automatically illuminate the backlight when a user grips it and avoid extra components like an accelerometer to detect motion. Additionally, with the voice command capabilities of the remote, users can search for, record their favorite TV show, control lights from across the room or simply input text with their voice.

Doesn't that sound amazing? This sleek, feature-rich remote control is made possible with TI's MSP430™ microcontroller (MCU) with CapTIvate™ touch technology and a SimpleLink™ wireless MCU for voice remote controls.



The above block diagram shows an example of using MSP430FR2633 MCU with CapTIvate technology with SimpleLink™ multi-standard CC2640 wireless MCU. Here are some key features of this design:

- 43 mm x 43 mm **gesture pad** to detect up, down, left, right and tap gestures. All accomplished with just ***10 CapTIvate IOs***.
- **Grip detection** using capacitive sensing with sensors built into the PCB to illuminate the backlight
- Enable **tactile feedback** using DRV2605L haptic driver from TI to enhance user experience.
- Paired with TI's SimpleLink wireless MCUs, the design offers the ability to communicate over **Bluetooth® low energy and ZigBee® RF4CE™**connectivity supporting three options:
  - CC2640 – Bluetooth low energy
  - CC2620 – ZigBee R4CE
  - CC2650 – Bluetooth low energy and ZigBee RF4CE
- <5 uA average power implies longer battery life for your remote.

You can have the remote control of the future now! Here is some information on how to get started:

- Learn more about TI's wireless MCUs for remote controls at www.ti.com/rc
- Get started developing with the all-in-one SimpleLink CC2650RC wireless MCU remote control kit
- Coming soon! MSP430 MCU with CapTIvate technology for remote control (TIDM-CAPTIVATE-REMOTECONTROL) TI Design reference design
- To evaluate CapTIvate technology:
  - Buy the CapTIvate MCU development kit
  - Guidance on designing touch sensors

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265