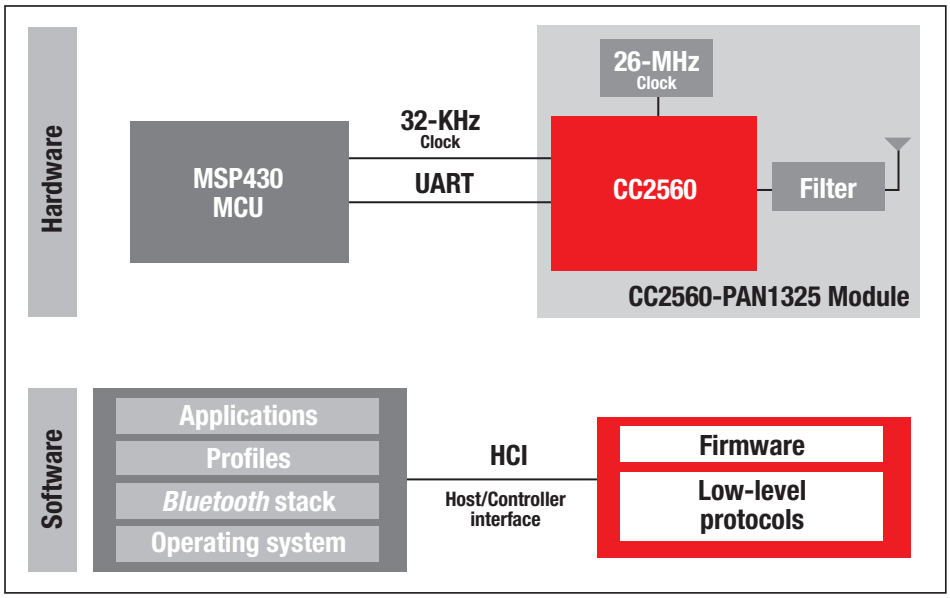
MSP430™ + CC2560 *Bluetooth*® Platform

Platform features

- *Bluetooth* 2.1 + Enhanced Data Rate (EDR) with best-in-class *Bluetooth* RF performance
- Complete, validated, certified, production-ready modules offered by Panasonic: CC2560-PAN1325, CC2560-PAN1315
- MSP430BT5190 pre-integrated with *Bluetooth* software stack and Panasonic module
- Full-featured evaluation boards for hardware and software prototyping
- Software development kit including *Bluetooth* software stack and serial port profile (SPP)
- Sample applications and demos provided in source code showing API usage
- Getting started guides, documentation and support: www.ti.com/connectivitywiki

Platform benefits

- TI's proven 7th generation *Bluetooth* technology enables a robust, high-throughput wireless connection with extended range and power efficiency
- CC2560-PAN1325/15 modules lower manufacturing and operating costs, save board space, ease certification, and minimize RF expertise required
- Pre-integration of host controller and *Bluetooth* modules simplifies and reduces hardware and software development, allowing faster time-to-market
- Evaluation tools allow for extensive prototyping and development of applications that require *Bluetooth* connectivity



▲ *CC2560-PAN1325 Bluetooth system*

Key features:

CC2560-PAN1325/15

- Fully qualified *Bluetooth*® v2.1 + EDR module
- Date rate up to 2.1 Mbps
- Best-in-class *Bluetooth* RF performance (Tx power, Rx sensitivity, blocking)
- +10 dBm typical Tx power with transmit power control
- -93 dBm typical receiver sensitivity
- Support for *Bluetooth* power saving modes (sniff, hold)
- *Bluetooth*, FCC, CE, IC certified
- Dimensions: 9 mm x 9.5 mm x 1.8 mm (CC2560-PAN1325, integrated antenna); 6.5 mm x 9.5 mm x 1.8 mm (CC2560-PAN1315, without antenna)
- *Bluetooth* + ANT footprint-compatible module available (CC2567-PAN1327); *Bluetooth* + BLE available in 2H 2011
- Integrates with TI's ultra-low power MSP430 microcontroller

MPS430BT5190

- Up to 25-MIPS operation
- 256-KB Flash, 16-KB RAM
- 1.8 V to 3.6 V supply
- Ultra-low power consumption
- Wake-up from standby mode in less than 5 µs
- 16-Bit RISC architecture
- Fully integrated LDO
- Three 16-bit timers
- 12-bit A/D converter
- Up to four universal serial communication interfaces (SPI/I²C/UART)
- 32-bit hardware multiplier
- Real-time clock module
- Up to 87 I/O pins

Hardware and software development

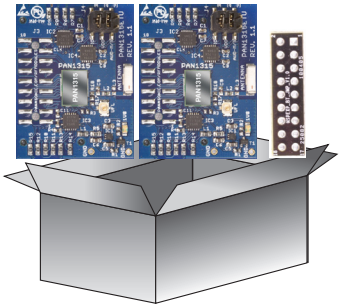
EZ430-RF2560 kit
$99 all-in-one evaluation kit

- Integrates CC2560 and MSP430BT5190
- Pre-flashed eZ430-RF2560 SDK with MindTree's Ethermind *Bluetooth* stack, serial port profile (SPP) and embedded sample applications running on FreeRTOS
- Supports software development with the MSP430BT5190 microcontroller
- Interactive sample PC game for demonstration of *Bluetooth* use in a remote control application using accelerometer data
- Removable USB stick enclosure, 2 LEDs, 3 pushbuttons

▲ *EZ430-RF2560 Kit*

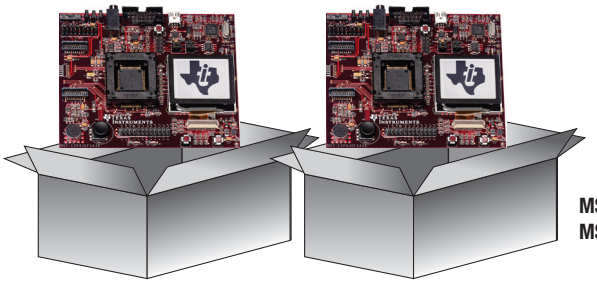
PAN1315EMK Kit
Bluetooth development and evaluation kit

- The kit, when coupled with the MSP430F5438 Experimenter Board, enables early software and hardware prototyping for wireless embedded applications
- The tool includes 2 PAN1315ETU's (Easy-To-Use) boards each containing the CC2560-PAN1315 Bluetooth module with on-board antenna connector and RF thru-line connector
- Users may download the MindTree EtherMind *Bluetooth* stack and SDK with SPP and embedded sample applications running on FreeRTOS
- The combination of sample applications in source format and the peripheral rich experimenter board makes this platform a versatile tool for extensive prototyping and easy development of applications that require *Bluetooth* connectivity



PAN1315EMK:
PAN1315 Evaluation Module Kit (EMK)

MSP-FET430UIF:
MSP430 USB Debugging Interface



MSP-EXP430F5438:
MSP430F5438 Experimenter Boards

MindTree EtherMind™ Bluetooth Stack

- EtherMind *Bluetooth* software development kit (SDK) is supported on the PAN131xETU + MSP430BT5190 device and EZ430-RF2560 kit
- Quickly evaluate EtherMind *Bluetooth* software protocol stack and SPP and implement applications using it
- SPP allows for reception and transmission of generic data streams enabling cable replacement
- Pre-integrated into TI MSP430BT5190 with FreeRTOS
- Sample applications to show turning *Bluetooth* on, discovery, inquiry, pairing, receive/transmit data over SPP, get and transmit RF parameters
- Compact stack enabling sufficient RAM and Flash headroom for custom application development over *Bluetooth* SPP

Platform partners

- Panasonic - RF modules and design services
  www.panasonic.com/ti

Panasonic

- MindTree - software and design services
  www.mindtree.com

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