SimpleLink™
MCU Platform

One environment.
Unlimited potential.

Gary Lin
Sr.FAE / MGTS
Connected MCU
New SimpleLink™ MCU platform
One environment. Unlimited potential.

Microcontroller
- MSP432™
  - MSP432P4
  - MSP432E4

Wireless Microcontrollers
- Bluetooth™
  - low energy
  - CC2642R
  - CC2640R2F
- Sub-1GHz
  - CC1312R
  - CC1310
- Multi-band
  - CC1352R
  - CC1350
- Multi-standard
  - CC2652R

Wireless Network Processor
- Wi-Fi®
  - CC3220
  - CC3235

100% code reuse
Common software

Texas Instruments

Multi-band
CC3120
CC3135

Multi-standard
CC3220
CC3235
End-to-end development resources

- Wired & wireless ARM®-based MCUs
- Common software
- Development Kits
- TI Resource Explorer
- Code Composer Studio™ IDE
- SimpleLink Academy
# TI Wireless Broad Portfolio
Solutions for every Industry Challenge

## Proximity

<table>
<thead>
<tr>
<th>cm</th>
<th>Personal Area Networks</th>
<th>Local Area Networks</th>
<th>Neighborhood Area Networks</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFC RFID</td>
<td>Identification</td>
<td>Proprietary 2.4GHz</td>
<td>Thread, 6LoWPAN</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>WiFi®</td>
</tr>
<tr>
<td>NFC</td>
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<td>Proprietary 2.4GHz</td>
<td>WiFi®</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sub-1 GHz, Dual-Band</td>
</tr>
</tbody>
</table>

### Key Attributes
- Passive operation & data storage
- Interoperable with other Bluetooth devices
- Standards based
- IPv6 stack
- Existing infrastructure
- Multi-protocol BLE
- Dedicated multi-tag read zone
- Large install base
- In mobile devices
- Ultra Low power
- IoT platform
- Ultra low power
- Connection to the cloud
- Robust RF

### Key Differences

<table>
<thead>
<tr>
<th>Proximity</th>
<th>Personal Area Networks</th>
<th>Local Area Networks</th>
<th>Neighborhood Area Networks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throughput:</td>
<td>✓ Data up to 848 Kbps</td>
<td>✓ Data up to 1 Mbps</td>
<td>✓ Data up to 1 Mbps</td>
</tr>
<tr>
<td>Throughput:</td>
<td>✓ Data or voice up to 3 Mbps</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Voice or video from 10-100 mbps</td>
</tr>
<tr>
<td>Throughput:</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Data up to 1 Mbps</td>
</tr>
<tr>
<td>Throughput:</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Data up to 1 Mbps</td>
</tr>
<tr>
<td>Throughput:</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Data up to 1 Mbps</td>
</tr>
<tr>
<td>Throughput:</td>
<td>✓ Data or voice up to 3 Mbps</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Voice or video from 10-100 mbps</td>
</tr>
<tr>
<td>Throughput:</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Data up to 1 Mbps</td>
</tr>
<tr>
<td>Throughput:</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Data up to 256 Kbps</td>
<td>✓ Data up to 1 Mbps</td>
</tr>
</tbody>
</table>

### Power Required
- No battery to coin cell
- Coin cell to AAA
- Coin cell
- Energy harvesting to AAA
- AA to Lithium Ion
- Energy harvesting to AAA
- Coin cell

---

[Image of the TI Wireless Broad Portfolio diagram]
## Why Sub-1 GHz?
Better **range**, **Lower power**, **More robust**, **Diverse Applications**.

### Long range
- 200x more than Wi-Fi, ZigBee
- Full house coverage with a simple software
- Choice of long range modulations

**Sub-1 GHz in Space**

### Ultra-Low Power
- 20 km on coin cell battery
- Multi-years on coin cell battery
- Lower power vs. other technologies for the same range

[More information on ultra-low power platform](#)

### Robust
- Less susceptible to interference
- Avoid the crowded 2.4 GHz
- Frequency hopping

[Learn more about frequency hopping](#)

---

### Applications
- **Home / Building automation**
  - Lighting Control
  - Door Locks
  - Heat Control

- **Smart Grid**
  - Flow Meters
  - E-Meters
  - Heat cost allocators

- **Alarm & Security**
  - Security Alarms
  - Smoke/CO2 alarms
  - Security Sensors

- **Retail**
  - ESL/Price Tags
  - Locationing
  - Cold Chain Mgmt

- **Logistics**
  - Tollroad Tags
  - Asset Tracking

- **Factory Automation**
  - Monitoring sensors
  - Cable Replacement

- **Agriculture**
  - Irrigation systems
  - Rodent traps
  - Animal tracking

- **Other**
  - Rescue tracking
  - RC toys
What’s new with Bluetooth 5?
Longer range, Higher speed, More data, Diverse Applications.

**Longer range**
- 6 dB improved sensitivity through coding – same TX/RX current
- Whole-house coverage (1.5km range)

**Higher speeds**
- 500% increase in data throughput vs. Bluetooth 4.0 (2Mbps mode)
- CC2640R2F supports even higher throughput up to 5Mbps (proprietary)

**Increased broadcasting capacity**
- Transmit more intelligent data over a beacon (up to 248 bytes)
- Enable rich location/navigation applications

Home / building automation
- Door locks, Beacons
- Smoke Detectors, Door bells, Lights

Health / medical
- Glucose Monitors, Patient Monitors, Drug delivery

Applicances
- Coffee-Maker, Vacuum, HVAC

Retail
- EPOS Card Readers
- EPOS Printers
- Handheld transaction terminals

Logistics
- Anti-lost tags, Asset tracking
- Personnel locator

Automotive
- Remote keyless entry (RKE), Passive-entry
- Passive-start (PEPS), wire replacement

Industrial
- Power Tools, E-meters, Sensors

Learn more

The secret to moving faster

Explore Bluetooth 5

Increased broadcasting capacity

Higher speeds

Longer range

6 dB improved sensitivity through coding – same TX/RX current
Whole-house coverage (1.5km range)
Why Thread?
The best way to **connect** and **control** products in the home

### Low power mesh
- Full house coverage
- Battery operation for sleepy end nodes
- Self-healing to fix routing problems

### IP connectivity
- Worldwide standard
- Easy connection to existing networks
- IP-based security with DTLS

### Smart phone commissioning
- Thread commissioning smartphone app is available
- Easy to form, join, and maintain network
- Secure commissioning

---

#### Alarm & Security
- Security Alarms
- Smoke/CO2 alarms
- Security Sensors

#### Appliances
- Coffee-Maker,
- Vacuum,
- HVAC

#### Home / building automation
- Lighting Control
- Door Locks
- Heat Control
# 2.4 GHz Wireless Technology Summary

## Grid infrastructure, Factory automation, Building automation

<table>
<thead>
<tr>
<th>Grid Infrastructure</th>
<th>Factory Automation</th>
<th>Building Automation</th>
</tr>
</thead>
<tbody>
<tr>
<td>WiSUN</td>
<td>Bluetooth LE</td>
<td>Zigbee</td>
</tr>
<tr>
<td><img src="#" alt="WiSUN" /></td>
<td><img src="#" alt="Bluetooth LE" /></td>
<td><img src="#" alt="Zigbee" /></td>
</tr>
</tbody>
</table>

### TI Support

- **3rd Party**
  - **TI Supported**
  - **TI Supported**
  - **3rd Party**
  - **TI Supported**
  - **TI Supported**
  - **TI Supported**

### Technology Features

- **IPv6**: 
  - Japan- HAN
- **Mesh**: 
  - ZigBee in UK
  - Process Control
- **IPv6**: 
  - Mesh- Limited
Sub-1 GHz Wireless Technology Summary

Grid infrastructure, Building automation

**Grid Infrastructure**

- **WiSUN**
- **Sigfox**
- **Wireless M-BUS**
- **IPv6**
- **Mesh**
- **Europe-centric**

**Building Automation**

- **TI 15.4-Stack**
- **Sub-1GHz**
- **Contiki**
- **Open Source**
- **TI Supported**

**TI Support**

- **3RD Party**
- **TI Supported**
- **3RD Party**

**Comments**

- **IPv6**
- **Mesh**
- **FAN**
- **IPv6**
- **Mesh**
- **Europe-centric**
- **IPv6**
- **Mesh**
- **IPv6**
- **Mesh**

*Texas Instruments*
CC13x0 / CC26x0

Introduction

SimpleLink™ Sub-1 GHz, BLE, Dual-Band and Multi-Protocol
Ultra-low power Wireless MCUs
CC26x0/CC13x0
One architecture, several technologies

Application MCU
• Application
• Profiles / services
• TI RTOS
• Peripheral drivers and libraries
• Royalty free protocol stacks

QFN package options:
2.7x2.7mm (14 IOs – CC2640R2F), 4x4mm (10 IOs), 5x5mm (15 IOs), 7x7mm (31 IOs)

Radio
• Flexible, SW defined radio
• Multi-protocol support
• LinkLayer in ROM
• Bluetooth stack in ROM

Sensor controller engine
• ADC and comparators
• Digital sensor readings
• Capacitive sensing

Memory
• 275 KB non-volatile memory
• 128 KB Flash
• 20 KB SRAM + 8 KB cache

ARM® Cortex®-M3

Sub-1GHz, Bluetooth® Low Energy, Zigbee, M-Bus, Sigfox
802.15.4g

Peripherals / modules
• DC/DC converter
• Temp/battery monitor
• AES
• GPIO
• Timers
• UART / SPI
• I2C / I2S
• DMA

Radio
SCE
Memory

802.15.4g

Application MCU

Peripherals / modules

Memory
SimpleLink™ CC13x0/CC26x0

Architecture

Key Features

CC1310
- Sub-1 GHz only

CC1350
- Dual-band (Sub-1 GHz + BLE)

CC2640R2F
- Bluetooth 5

CC2650
- 2.4 GHz Multi-Protocol

Ultra-low Power Consumption
- 61 µA/MHz ARM Cortex M3
- 8.2 µA/MHz Sensor Controller
- 1 µA sleep with retention and RTC
- 5.9 mA RX (single-ended)
- 6.1 mA TX (single-ended)
- <3µA while running 10 ADC samples
- 4x4, 5x5, and 7x7 mm packaging (2.7x2.7 WCSP for CC2640R2F)

Wireless MCU Key Features
- Autonomous sensor controller engine
- 1.7 - 1.95 V or 1.8 – 3.8 V supply range
- 275 KB of non-volatile memory
- 128 KB Flash
- 20 KB RAM + 8 KB Cache

RF Key Features
- Output power:
  - +5 dBm (BLE)
  - +14 dBm (Sub-1GHz)
- Sensitivity:
  - -97 dBm @ 1Mbps, -103 dBm @ 125Kbps (BLE)
  - -110 dBm (50kbps GFSK, Sub-1GHz)
- Pin compatible and SW compatible across protocols and frequency bands
CC13x2 / CC26x2

Introduction

SimpleLink™ Sub-1 GHz, Dual-Band and Multi-Protocol
Ultra-low power Wireless MCUs
CC26x2/CC13x2
One architecture, several technologies

Application MCU
- Application
- Profiles / services
- TI RTOS
- Peripheral drivers and libraries
- Royalty free protocol stacks

Peripherals / modules
- DC/DC converter
- Temp/battery monitor
- AES
- GPIO
- Timers
- UART / SPI
- I2C / I2S
- DMA

Radio
- Strong Sensitivity
- Power output:
  - +5dBm / +20dBm @ 2.4 GHz
  - +15dBm / +20dBm @ Sub-1 GHz
- LinkLayer in ROM

Sensor controller engine
- ADC and comparators
- Digital sensor readings
- Capacitive sensing

Memory
- 608 KB non-volatile memory
- 352 KB Flash + 256 KB ROM
- 80 KB SRAM + 8 KB cache

ARM® Cortex®-M4F
QFN package: 7x7mm

Sub-1GHz
Bluetooth Low Energy
THREAD
sigfox
802.15.4g
Key Features

More memory
- 608 KB non-volatile memory
- 352kB Flash memory + 256 KB ROM
- 80kB SRAM
- Device is equivalent to a 512kB device (including ROM)

Improved RF
- Sub-1GHz, 2.4 GHz and true dual band support with dedicated RF ports
- +20 dBm power amplifier
- Narrowband long range
- Support for 169 MHz

More peripherals
- Enhanced security (hardware acceleration, AES-128/256, SHA-256, ECC, RSA-2048)
- 1 Additional UART

Lower power
- Faster start-up times
- Standby current as low as 0.9μA
- Ultra-low power sensor controller with current consumption as low as 1 μA during operation

More processing power
- ARM Cortex M4F core (1-cycle MAC, SIMD, floating-point)
- 7x7mm pin compatible with CC1310 / CC2640R2F
SimpleLink™ Sub-1 GHz

Sensor to Cloud

Long Range Solution
SimpleLink Sub-1 GHz Sensor to Cloud

What is it? Why is it needed?

Fast time to market.
Long range applications to the cloud.
Flexible gateway solution

What is it? An end-to-end solution providing cloud connectivity for sending and receiving sensor data over a long range Sub-1 GHz network.

Why is it needed? The Sub-1 GHz band is very fragmented with no single dominant technology that provides an end-to-end solution for devices to access the cloud over a Sub-1 GHz network. The TI Sensor to Cloud is this solution.

Key Features
• IEEE 802.15.4g star networking solution
• AES-128 encryption and message integrity code
• Frequency hopping enabling robustness
• Scalable cloud integration
• Certification-ready design
SimpleLink Sub-1 GHz Sensor to Cloud
Choose your solution

**TI-RTOS-based wireless MCU gateway**
- Fully integrated wireless gateway
- Low power solution
- Unprecedented scalability with the SimpleLink MCU platform
- Cost-optimized solution

**Supported operating system:** TI-RTOS

**SimpleLink Wi-Fi CC3220**
- ARM® Cortex®-M4
- Dedicated network processor and additional application MCU
- Chip-level Wi-Fi Alliance certification
- 256K RAM or 256K RAM + 1 MB Flash and advanced security features

**Linux-based processor gateway**
- Enables enhanced user interface
- Ability to run concurrent applications
- Support for various wireless technologies like Bluetooth® low energy, Wi-Fi, zigbee®, Thread, etc.
- Wired and wireless gateway option

**Supported operating system:** Linux

**Sitara AM335x**
- Scalable ARM® Cortex®-A8 from 300 MHz – 1 GHz
- 3D graphics option for enhanced user interface
- Premium secure boot option
- Dual-core PRU-ICSS

Order now  Learn more  
Order now  Learn more
Sensor to Cloud Gateway Connections

**TI-RTOS Based**

- SimpleLink Sub-1 GHz CC131x LaunchPad
- SimpleLink WiFi CC3220 LaunchPad
- CC13x0/2 LaunchPad
- SimpleLink CC13x0/2 SDK
- Sensor Application

**Linux Based**

- SimpleLink Sub-1GHz CC131x LaunchPad
- CC13x0/2 LaunchPad
- SimpleLink CC13x0/2 SDK
- Sensor Application

- SimpleLink CC3220 LaunchPad
- SimpleLink WiFi CC3220 SDK
- Collector Application
- Gateway Application

- TI 15.4-Stack Linux SDK
- Sitara™ AM335x Processor SDK
- Cloud IoT Agent

BeagleBone Black

- BeagleBone

- CC135x LaunchPad
- Sensor Application

- Cloud IoT Agent

- Sitara™ AM335x Processor SDK

http://www.ti.com/tool/TIDC-01002

http://www.ti.com/tool/tidep0084
SimpleLink™ Wi-Fi® CC3220

Enabling Security for IoT Products
Target Applications in Industrial Market

**Thermostats**
- Thermostats
- HVAC systems Control

**Surveillance & Safety**
- Video Doorbells
- IP Network Camera
- Smoke/CO2 alarms

**Access Control**
- Electronic Smart Locks
- Garage door openers

**Appliances**
- Air Conditioners
- Robotic Vacuum
- Coffee Maker

**Asset Tracking**
- Logistics
- High value asset tracking
- Personel locator

**Factory Automation**
- Monitoring sensors
- Cable replacement
- Motor monitoring and control
Customized Power Modes for Every Use Case

Use Cases
- Building Automation
- Security Systems
- Wireless Audio
- Smart Energy
- Industrial Control
- Asset Tracking

Low Power Profiles
- Always Connected
- Intermittently Connected
- Transceiver

Lifetime* Batteries with 2AA
- Up to 1 year
- Up to 3 years
- Up to 5 years

Low Power Features
- **135uA Low Power Deep Sleep (LPDS) mode** while maintaining connection
- Proprietary real time Network Learning optimization algorithm
- **4.5uA Hibernate mode**
- **1uA – Shutdown mode**
- Fast secure TLS/SSL connection establishment in <200msec,
- DCHP renew feature and more
- 4.5uA - Hibernate mode
- 1uA - Shutdown mode
- Fast sequence of wake up, transmit re-hibernate

* Estimated, actual life time depends on customer system configurations
The network processor offloads networking and internet tasks from the application MCU.

**Wi-Fi Core**
- 802.11 b/g/n at 2.4GHz
- Modes: STA, AP (4 stations), Wi-Fi Direct®
- Wi-Fi Security: WEP, WPA, WPA2
- Provisioning: AP mode, SmartConfig™, WPS
- Throughput: 16 Mbps UDP, 13Mbps TCP

**Built In Power Management**
- Integrated DC2DC
  - $V_{Bat}$: 2.1 V to 3.6 V
  - Pre-regulated: 1.85 V
- Low power modes
  - Shutdown (1uA)
  - Hibernate (4.5uA)
  - Low power deep sleep (135uA)
  - Rx beacon listen (37mA)

**Internet & Application Protocols**
- Embedded webserver (HTTPs)
- Supports IPv4 & IPv6 TCP/IP Stack
- 16 Sockets (6 TLS v1.2 / SSL 3.0)

**Powerful HW Crypto Engine**
- Enables fast secured Wi-Fi and internet connections within 200mSec

**Industrial Temp**
- Supports -40°C to +85 °C
SimpleLink™ Wi-Fi® Wireless MCU CC3220 - MCU

**Applications MCU**

Physically separate MCU and memory, dedicated to the user’s applications.

Programmable Applications MCU
- Peripheral drivers and Libraries
- Supports no-OS or TI-RTOS/FreeRTOS

Application-dedicated Memory
- 256KB RAM
- Additional 1MB XIP Flash (CC3220SF)

Rich Set of Peripherals & Timers
- 27 I/O pins with flexible muxing options
- 4x General purpose (with PWM support)

Enhanced Features
Rich multi-layer set of security features, within a single chip, to help protect IP and data
- TI Root-of-trust and TI Certificate catalog
- File System Security
- Cloning protection
- Initial secure programming
- Secure content delivery
- Enabling Applications with HomeKit Technology
- OTA support
- SimpleLink™ Connected MCU Platform support
**SimpleLink™ Wi-Fi® Family**
Simple Integration, Powerful Features

**CC32xx - Wireless Microcontroller (SoC)**

- **Applications MCU**
  - ARM® Cortex™ M4
  - 256KB RAM + Opt. 1MB XIP Flash
  - User Application

- **Network Processor**
  - Internet
  - HTTPS
  - TLS/SSL
  - TCP/IP
  - MAC
  - Baseband
  - Radio
  - HW Crypto Engine
  - Power Management

**CC31xx - Wi-Fi Network Processor**

- **External Host MCU**
  - (Any user selected MCU)
  - User Application

- **Network Processor**
  - Internet
  - HTTPS
  - TLS/SSL
  - TCP/IP
  - MAC
  - Baseband
  - Radio
  - HW Crypto Engine
  - Power Management

---

**Simple Integration, Powerful Features**

- Pin2Pin Compatible

**SimpleLink™ Wi-Fi® Family**

**CC32xx**

- SPI & I2C
- GPIO
- UART
- PWM
- ADC

**CC31xx**

- SPI & I2C
- GPIO
- UART
- PWM
- ADC

---

**Texas Instruments**

- SimpleLink™ Wi-Fi® CC32xx wireless microcontroller
- SimpleLink™ Wi-Fi® CC31xx wireless network processor

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**SimpleLink™ Wi-Fi®**

- Simple Integration
- Powerful Features

- Pin2Pin Compatible

---

**CC32xx - Wireless Microcontroller (SoC)**

- SPI I2C
- GPIO
- UART
- PWM
- ADC

**CC31xx - Wi-Fi Network Processor**

- SPI I2C
- GPIO
- UART
- PWM
- ADC
# SimpleLink™ Wi-Fi® Family – Gen2
## Raising the Bar - New Features Highlights

<table>
<thead>
<tr>
<th>Larger on-chip memory</th>
<th>Embedded IP and File System Security</th>
<th>&gt; 30% longer battery life</th>
</tr>
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<tr>
<td>AP mode support of 4 STAs</td>
<td>IPv6 and HomeKit</td>
<td>Enhanced provisioning</td>
</tr>
</tbody>
</table>

## New Features Highlights

- **AP mode support of 4 STAs**
- **Enhanced provisioning**
- IPv6 and HomeKit
- **Larger on-chip memory**
- > 30% longer battery life

## Features Overview

<table>
<thead>
<tr>
<th>Device</th>
<th>WiFi-Fi Network Processor</th>
<th>Wireless MCU (SoC) Integrated ARM Cortex M4</th>
<th>Application Memory</th>
<th>Internet Protocols supported</th>
<th># Secure Sockets (TLS/SSL)</th>
<th># STA supported, in AP Mode</th>
<th>Wi-Fi + Internet level Security</th>
<th>Application level Security</th>
<th>SimpleLink MCU Ecosystem Support</th>
<th>HomeKit &amp; WAC support</th>
<th>Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC3220SF</td>
<td>●</td>
<td>●</td>
<td>256KB RAM + 1MB XIP Flash</td>
<td>IPv6 + IPv4</td>
<td>6</td>
<td>4</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>CC3220S</td>
<td>●</td>
<td>●</td>
<td>256KB</td>
<td>IPv6 + IPv4</td>
<td>6</td>
<td>4</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>CC3220R</td>
<td>●</td>
<td>●</td>
<td>256KB</td>
<td>IPv6 + IPv4</td>
<td>6</td>
<td>4</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<td>●</td>
</tr>
<tr>
<td>CC3120R</td>
<td>●</td>
<td>●</td>
<td>IPv6 + IPv4</td>
<td>6</td>
<td>4</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>CC3200</td>
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<td>●</td>
<td>256KB</td>
<td>IPv4</td>
<td>2</td>
<td>1</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>CC3100</td>
<td>●</td>
<td>IPv4</td>
<td>2</td>
<td>1</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
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</table>

## Product Compatibility

- **Gen 2** Pin-to-Pin compatible
- **Gen 1**

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**Texas Instruments**
SimpleLink™
MSP432 E4

May 2018
Connected MCU
SimpleLink MSP432 MCUs | Wireless Host MCU

- **P4**: Ultra-low-power
  
  High-precision ADC

Differentiate **wireless sensor nodes** with highest precision integrated ADC and local analytics

- **E4**: High performance
  
  Ethernet MAC+PHY

Develop **smarter industrial gateways** with simplified ETH design and multi-wireless protocol attach

Seamlessly add SimpleLink wireless connectivity options: BLE, Wi-Fi, or Sub-1 GHz, with SDK Plugins to **build differentiated industrial wireless networks, from sensor to gateway to cloud**
MSP432E4 Target applications

SimpleLink™
MSP432E4
120MHz Cortex-M4F
(MSP432E401YTPDT/
MSP432E411YTZAD)

8 x UART
4 x SPI
6 x I2C
2 x CAN

End-node
Gateway
USB 2.0
Host/FS Device
Eth + PHY

Sensors
WiFi

End-node

Sensors
MSP432E4 in Building Automation
## Getting started with SimpleLink Ethernet MCUs

<table>
<thead>
<tr>
<th>SimpleLink Ethernet LaunchPad™ development kit - $19.99</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.ti.com/tool/msp-exp432e401y">www.ti.com/tool/msp-exp432e401y</a></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>SimpleLink MSP432E4 SDK</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>SimpleLink Ethernet MCU production silicon $9.00 in 1ku</th>
</tr>
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Thank you
CES 2018
The SimpleLink™ MCU platform will demonstrate simplified, smart automation

SimpleLink MCU Platform videos