SimpleLink™ Wi-Fi® Family

CC3100/CC3200 Internet-on-a-chip™ Solutions

Save time and resources developing with CC3100 and CC3200 Wi-Fi® CERTIFIED™ chips and modules

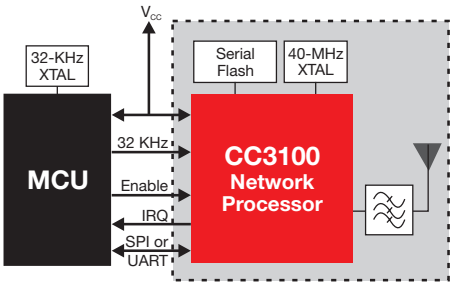
Overview

TI makes connectivity even easier with the next-generation SimpleLink Wi-Fi solutions. The product family features Internet-on-a-chip™, Wi-Fi CERTIFIED™ solutions for the Internet of Things (IoT) solving industry challenges for broad embedded applications. With SimpleLink CC3100 and CC3200 pin-to-pin-compatible solutions you can:

- Program applications on the industry's first Internet-on-a-chip solution with user-dedicated MCU
- Power Wi-Fi battery-operated designs for more than a year on two AA batteries
- Start quickly, no Wi-Fi experience needed

CC3100 Wireless Network Processor

The CC3100 device is a Wi-Fi, self-contained network processor with on-chip web server and embedded TCP/IP stack that connects

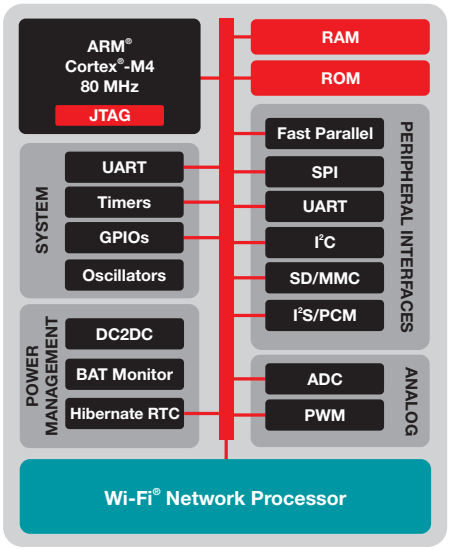


easily to any low-cost and low-power microcontroller (MCU) such as the MSP430F5529 or MSP430FR5969, due to a simple UART or SPI driver and host memory footprint as low as 7kB of code to reside on the MCU. Hardware design flexibility includes a 64-pin 9×9 mm QFN package or an upcoming **certified CC3100 module**.Flexible connection methods (provisioning) include Access Point Mode, WPS, SmartConfig™ Technology and others. On the security side, an embedded hardware cryptography engine allows establishing TLS secure Link in 200 ms.

Interfacing to any MCU, designed with low-power radio and advanced low-power modes, the SimpleLink Wi-Fi family makes sensor-to-the-cloud connectivity possible. Moreover, the solution contains several Internet protocols in ROM including mDNS, DNS, SSL/TLS and HTTP server.

CC3200 Wireless MCU

The SimpleLink Wi-Fi CC3200 solution capitalizes on the CC3100 benefits and integrates an 80-MHz ARM® Cortex®-M4 MCU and peripherals enabling application development with a Wi-Fi CERTIFIED device or module. Developers can fully access the MCU portion with more than 200kB of application code fully independent from the Wi-Fi processing.



The peripheral set includes parallel camera, I²S audio, SDMMC, ADC, SPI, UART, I²C, PWM, I/Os, built-in power management and RTC enabling connection to the cloud.

CC3200 certified modules, coming soon, provide easier Wi-Fi integration by lowering manufacturing costs, reducing development time and simplifying procurement and certification. The modules have complete antenna reference designs for streamlined integration.

Software and support

Both CC3100 and CC3200 solutions are supported by a software development kit (SDK) including software drivers, sample applications, API guide, user documentation and a world-class support E2E™ community. On the integrated Cortex-M4, all sample applications in the SDK are supported with Code Composer Studio™ Integrated Development Environment and no RTOS. A few of the applications support IAR, GCC, Free RTOS, TI-RTOS.

Example applications:

- Internet-on-a-chip sample applications
  - Email from SimpleLink Wi-Fi solution
  - Information Center – get time and weather from Internet
  - http server – host a web page on SimpleLink Wi-Fi solution
  - XMPP – Instant Message chat client
  - Serial interface
- Wi-Fi sample apps
  - Easy Wi-Fi configuration
  - Station, AP modes
  - TCP/UDP
  - Security – Enterprise/Personal, TLS/SSL
- MCU peripheral samples apps

Getting started: SimpleLink™ CC3100 and CC3200 hardware development kits

	Kit name	Description	When to buy this?
SimpleLink Wi-Fi C3200 Internet-on-a-chip wireless microcontroller (MCU)			
	**CC3200-LAUNCHXL** $29.99 USD	• CC3200 Launchpad • Single-chip Internet of Things solution with integrated MCU	Want to use Wi-Fi® wireless MCU – single-chip Internet-on-a-chip™
SimpleLink Wi-Fi CC3100 Internet-on-a-chip wireless network processor			
	**CC3100BOOST-CC31XXEMUBOOST-EXP430F5529LP** $49.99 USD	• CC3100 BoosterPack + Advanced emulation board + MSP430F5529 Launchpad	Want to evaluate all CC3100 sample apps, using TI's ultra-low-power MSP430™ MCU family
	**CC3100BOOST-CC31XXEMUBOOST** $36.99 USD	• CC3100 BoosterPack + flashing and advanced debug capability • Compatible LaunchPads (sold separately)	Want to use CC3100 with any other MCU. Need one EMUBOOST board for flashing, using radio tool, using SimpleLink Studio (MCU development on PC) or advanced debug
	**CC3100BOOST** $19.99 USD	• CC3100 BoosterPack	If buying additional CC3100BOOST boards – assuming you already have CC31XXEMUBOOST for flashing, radio tool and possible advanced debug
	**CC3100BOOST-MSP-EXP430FR5969** $34.00 USD	• CC3100 BoosterPack + MSP430FR5969 LaunchPad	Want to evaluate CC3100 with TI's low power FRAM device MSP430FR5969

Growing cloud of ecosystem partners

The TI IoT cloud ecosystem helps manufacturers using TI technology to easily and rapidly connect more to the IoT. Open to cloud service providers with a differentiated service offering and value-added services running on one of TI's IoT solutions, the TI cloud ecosystem provides options to meet individual manufacturer needs. **www.ti.com/simplelinkwificloud**

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TI Design Library: Wi-Fi and IoT development with SimpleLink Wi-Fi reference designs

TIDesigns

Jump start system design and speed time to market with our comprehensive Wi-Fi reference designs. Each design includes schematic or block diagram, BOM and design files. Created by experts with deep system and product knowledge, the designs span across TI's portfolio of analog, embedded processor and connectivity products.

- **SimpleLink Wi-Fi Antenna Selection** enables evaluation and development of end applications requiring antenna diversity
- **Smart Plug with Remote Disconnect and Wi-Fi Connectivity** quickly creates networked load control devices for industrial building and home automation applications
- **Wi-Fi Audio Streaming Application** enables the capture, streaming and playback of audio from a digital microphone or a stereo/mono audio jack to another Wi-Fi-enabled device
- **SimpleLink Wi-Fi Connectivity in a Smart Electric Meter** implements a three-phase energy meter with Wi-Fi connectivity

Key features

Features	Benefits
802.11 b/g/n station and access point roles with fully integrated radio, baseband and MAC.	High performance and easy hardware design
Single-chip Wi-Fi MCU: Wi-Fi network processor + ARM Cortex-M4 MCU integrated into one chip including RF reference design	Smaller footprint, reduced solution BOM
Embedded TCP/IP stack and Wi-Fi driver transparent to the application user	Easy and quick software design
Internet protocols including mDNS, DNS, SSL/TLS, web server (HTTP). Extended protocol examples including MQTT messaging and SMTP e-mail	Easy implementation of IP applications such as service discovery, e-mail, instant messaging and security
Embedded hardware crypto engine and TLS/SSL Internet security	Quickly enable TLS secure link (<200 ms)
Flexible connection (provisioning) methods including access point mode, WPS and Smart-Config™ technology	Ensures Wi-Fi connection in headless applications with multiple options
Low-power radio and advanced low-power modes	Enables battery-operated devices

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