# EC32LXX 2.4GHz 802.11 b/g/n Modules

## Wi-Fi Ready Fully Certified MCU Modules

## 32bit MCU for Custom App Development

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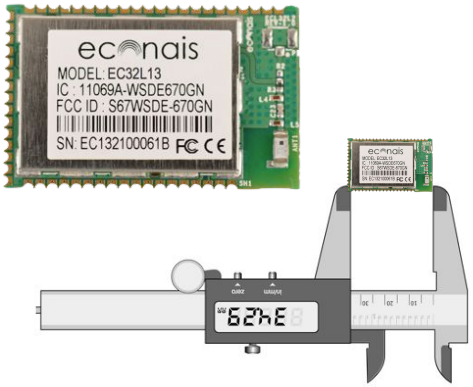


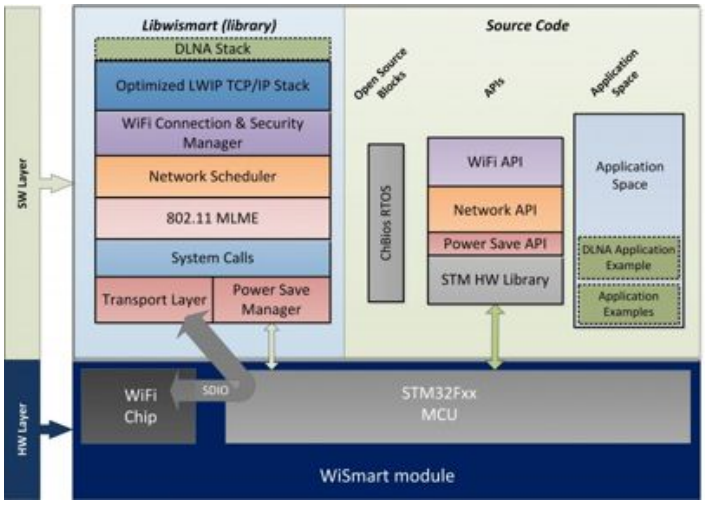

The EC32Lxx family of modules is the ultimate choice for product designers who want to integrate Wi-Fi into their network connected devices and appliances. No previous Wi-Fi experience is needed!

The EC32Lxx includes the most comprehensive software library and open source applications to ensure full customization and rapid path to market for Wi-Fi enabled products. The MCU on the EC32Lxx can be used to replace an existing MCU. Porting customer application code to EC32Lxx saves space, power, and cost.

## Highlights

- Powerful Cortex-M3/M4 Processors with Flash and RAM to support custom applications
- UART to Wi-Fi and SPI to Wi-Fi functions
- Best in class open source RTOS
- Power consumption as low as 2.8uA
- Network Tx/Rx performance up to 22Mbps
- Complete set of interfaces: GPIOs, USARTs, UARTs, I2C, I2S, SPI, USB, CAN2.0A/B, ADC, DAC
- Full set of open source application examples
- Ideal for OEM/ODM products requiring Wi-Fi network connectivity or media streaming

## Block Diagram




## Applications

- Home Automation and Smart Appliances
- Wi-Fi Audio Speakers and Headphones
- Wi-Fi Audio/Video Monitoring
- Wireless Sensors and Sensor Networks
- Healthcare and Fitness Devices
- Wearable Devices
- Security, Authentication, and Admittance Control
- Lighting
- Toys
- Building/Energy/Industrial Management/Control
- Remote Control, Data Acquisition & Monitoring

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# Product Brief

## Features

- ChibiOS/RT RTOS
- Wi-Fi Client and Ad-Hoc support
- Wi-Fi AP support with up to 5 clients
- WPA Personal & Enterprise (with TLS)
- WPS 2.0 Pin and Push Button Methods
- HTTPS/SSL
- Over-The-Air (OTA) Firmware Upgrades
- Advanced Roaming Algorithms
- DHCP Client/Server
- Configurable Web Server
- IPv4, TCP/UDP sockets
- Cloud services support
- Open source ARM toolchain
- Free sample code provided

## Specifications

| | |
|---|---|
| Radio Technology | 2.4GHz IEEE 802.11b/g/n |
| Power supply | 3.3V |
| Antenna | SMD or U.FL |
| Max TX power | 18 dBm |
| Max RX sensitivity | -94 dBm |
| Storage Temp. | -50 to +125 °C |
| Optimal Operating Temp. | -30 to +85 °C |
| Max Operating Temp. | -40 to +85 °C |
| Max Distance | 400m open space line of sight |
| Roaming | <20 ms |
| Certification | FCC, EC, IC, TELEC, RoHS |

## EC32LXX Module Selection

| Resource | EC32L13 | EC32L14 | EC32L24 | EC32L44 |
|---|---|---|---|---|
| Processor (MCU) | STM32F103RF ARM Cortex-M3 32bit | STM32F103RG ARM Cortex-M3 32bit | STM32F205RG ARM Cortex-M3 32bit | STM32F405RG ARM Cortex-M4 32bit |
| Clock | 72MHz | 72MHz | 120MHz | 168MHz |
| Flash for user apps | 150KB | 400KB | 400KB | 400KB |
| RAM for user apps | 30KB | 30KB | 95KB | 160KB |
| GPIOs | 25x | 25x | 25x | 25x |
| USARTs | 3 | 3 | 3 | 3 |
| UARTs | | | 2 | 2 |
| Serial2Wi-Fi | Yes | Yes | Yes | Yes |
| DLNA DMR/DMS | Yes | Yes | Yes | Yes |
| OTA FW | Yes | Yes | Yes | Yes |
| WPA/WPA2 | Yes | Yes | Yes | Yes |
| SSL/HTTPS | Yes | Yes | Yes | Yes |
| Shutdown | 3.1uA | 3.1uA | 2.8uA | 3.5uA |
| Connected Idle(1) (DTIM3) | 1.9mA | 1.9mA | 2.2mA | 3.7mA |
| TX/RX (TCP) | 10/16 Mbps | 10/16 Mbps | 18 Mbps | 22 Mbps |

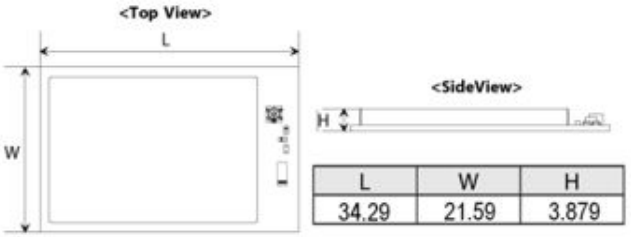
**(1) DTIM:5**

## Evaluation and Development Kits

EC32L13DK

EC32L13WADK

## EC32LXX Dimensions (mm)




| L | W | H |
|---|---|---|
| 34.29 | 21.59 | 3.879 |

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