Presentation Will Begin Shortly

4:00

WI-FI

MAR 7TH	Unboxing SiWx917 Wi-Fi 6 + Bluetooth LE Pro Kit
APR 11TH	How to Develop Wi-Fi 6 Software Applications with SiWx917 SoC
MAY 16TH	Measure Power and Throughput on the SiWx917 Wi-Fi SoC
JUN 20TH	Design Battery Based Wi-Fi Cameras with SiWx917

Welcome

How to Develop Wi-Fi 6 Software applications with SiWG917 SoC

Agenda

01 Introduction for different development modes

02 CLI Demo Example App + QA

03 Low Power Mode Demo + QA

Introducing SiWx917 Wi-Fi 6 and Bluetooth LE SoC

Wi Fi 6 Bluetooth® matter

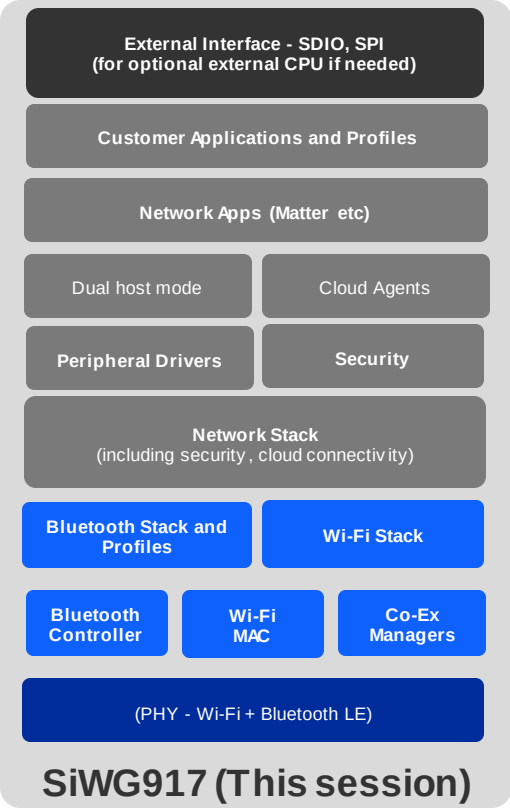
- **Ultra-Low Power**
  - Increases Battery life and Recharging Interval
- **IoT-Optimized Wireless Performance**
  - 2.4GHz: Long-range, low-power, effective wall penetration, high-throughput
- **Multiprotocol Co-Existence**
  - High-performance Wi-Fi 6 and Bluetooth Low Energy 5.4
- **Large Memory**
  - Up to 672kB RAM, 8MB Flash/PSRAM, 16MB External Flash/PSRAM
- **Single-Chip Matter over Wi-Fi Solution**
  - Wi-Fi, Bluetooth LE, and Matter in One Package
  - Certified Solution
- **Edge Computing + System Integration**
  - Separate Application MCU and Wireless Processor
  - Rich Peripherals, Sensor Hub, High GPIO Count, Large Memory
- **Robust Security**
  - A High Level of Security for the Device, Wi-Fi Protocol, and Networking

The Most IoT-Optimized Wi-Fi SoC

SiWx917 IC Software Architecture – Different Operational Modes

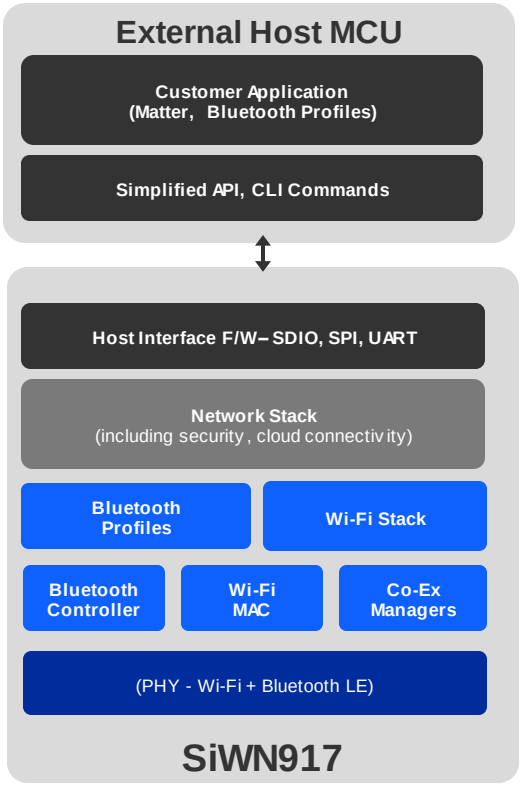
SOC – WIRELESS MCU

- Hostless – No external host needed
- All of the code (wireless, networking stacks and application code) runs on SiWx91x



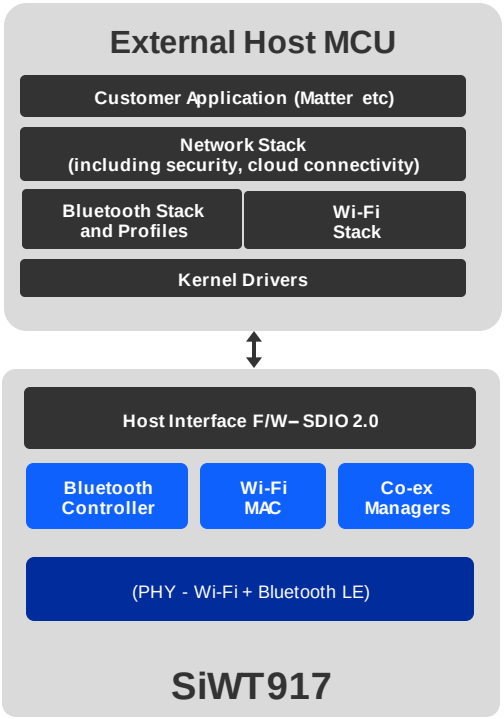
NCP- NETWORK CO-PROCESSOR

- Hosted – Network Co-Processor (NCP)
- Host MCU runs RTOS, application code, cloud agent, and Matter
- SiWx91x runs Wi-Fi and Bluetooth radios, wireless and networking stacks



RCP – RADIO CO-PROCESSOR

- Hosted - Radio Co-Processor (RCP)
- Host MCU runs Linux OS, wireless, networking, and security stacks
- SiWx91x supports Wi-Fi and Bluetooth radio functionalities



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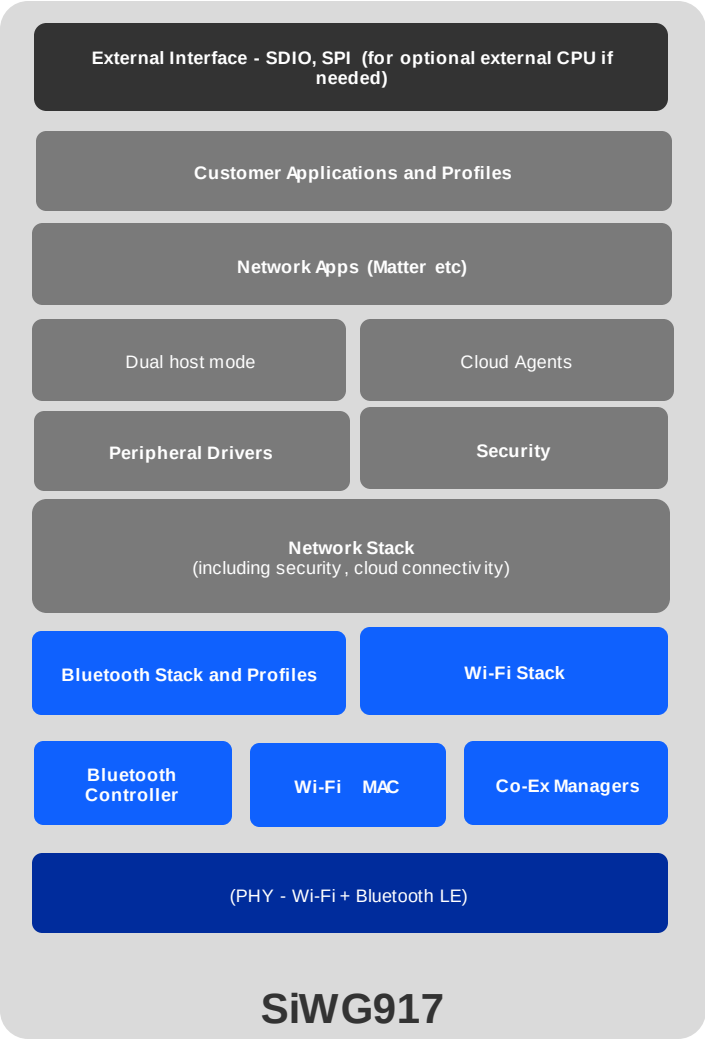
SiWG917 SoC Mode Overview



- **Integrated Wi-Fi + Bluetooth LE + ARM® Cortex® M4F**
  - Wi-Fi stack, Bluetooth LE 5.4 stack, PSRAM support
  - Networking Stack - TCP/IP, TLS 1.3, HTTP/HTTPS, DHCP, MQTT
  - ARM Cortex-M4F processor for customer application with floating point unit
  - SPI/SDIO for optional external processor if needed by the application
- **Multiple ultra low power modes for reducing system power**
  - Wi-Fi 6 Target Wake Time (TWT) for improved efficiency and long battery life
- **2.4 GHz Wi-Fi and Bluetooth LE Support**
  - Wi-Fi 6 OFDMA/MU-MIMO higher throughput, network capacity & low latency
  - Wi-Fi STA, Wi-Fi AP, Concurrent Wi-Fi STA + Bluetooth LE, Wi-Fi AP + STA
  - WPA2 (Personal/Enterprise), WPA3 (Personal)
  - Wi-Fi Matter support
  - Bluetooth LE 5.4, LR, dual role, data rates up to 2 Mbps,
- **Security**
  - Secure Boot/OTA, PUF, TRNG, Secure Zone, Secure Key Storage, Secure Debug, Anti Rollback, Secure XiP, Secure Attestation
- **Peripherals**
  - I2C, SPI, SSI, SIO, UART/USART, ADC/DAC, PWM, GPIO, I2S, QEI, CapSense, OpAmp, Interrupts, Timers
- **Amazon FreeRTOS Support; AWS IoT Cloud Connectivity**
- **IDE – Simplicity Studio 5**

SiWG917 SW Development Process – SoC Mode

1. Get a Development Kit

- Pro Kit SiWx917-PK6031A is recommended for application development in the SoC mode (i.e. wireless MCU)

2. Download Simplicity Studio

- Go to https://www.silabs.com/developers/simplicity-studio
- Get Developer Documentation from docs.silabs.com (Wi-Fi 6 + BLE SDK)

3. Search for WiSeConnect SDK

- Enter Simplicity Studio Installation Manager and search for the WiSeConnect SDK
- Upgrade your Development Kit tool with the latest firmware

4. Start Simplicity Studio

- Select the right SW Development flow – SoC
- Start experimenting with example applications

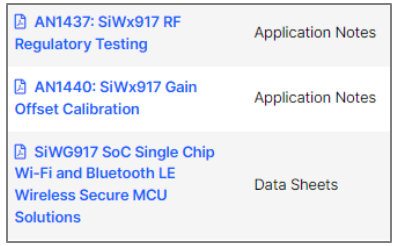
Covered in our previous Tech Talk: Unboxing SiWx917 Wi-Fi 6 Software Applications

How to Get Support During Your Wi-Fi Development

Documentation

Explore SW Developer Documentation at Docs.Silabs.com

Check Technical Resource Library silabs.com/support/resources



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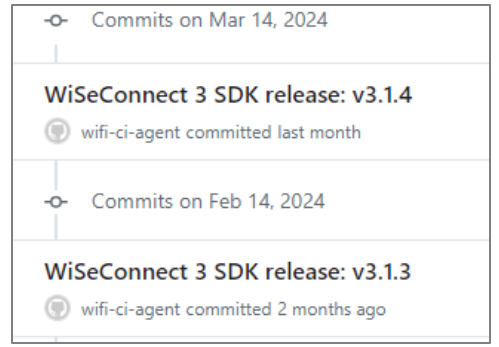

https://github.com/SiliconLabs/wiseconnect/issues

CLI Demo
Example App

Nik Von Huben
Senior Software Engineering Manager

Q&A

Low Power Mode Demo
“Associated and Deep Sleep”

Nik Von Huben
Senior Software Engineering Manager

Q&A

Thank You

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tech talks