

## SiWx917 Specs

### Ultra-Low Power Wireless System on a Chip

- Wi-Fi single band 2.4 GHz and Bluetooth Low Energy 5.1 wireless radio
- Quad-thread ThreadArch processor up to 160 MHz
- ARM Cortex-M4 processor with FPU application MCU up to 180 MHz
- Integrated baseband processor, RF transceiver, high-power amplifier, balun and T/R switch
- Integrated PSA-L2 certifiable security engine, and AI/ML accelerator
- Embedded SRAM up to 672 KB FLASH up to 8 Mb and supports opt external PSRAM

### Wi-Fi 6

- Compliant to IEEE 802.11ax, 2.4 GHz, 20 MHz, single-spatial stream
- Supports 802.11ax features such as OFDMA, UL/DL MU-MIMO, and Target Wake Time (TWT)
- Transmit power up to +21 dBm with integrated PA
- Receive sensitivity as low as -98 dBm
- Data Rates: 802.11ax MCS0 to MCS7
- Operating frequency range: 2412 MHz - 2484 MHz

### Bluetooth Low Energy 5.1

- Transmit power up to +19 dBm with integrated PA
- Receive sensitivity: LE: -95 dBm, LR 125 Kbps: -106 dBm
- Operating frequency range: 2402 MHz - 2480 MHz
- Bluetooth Low Energy 1 Mbps, 2 Mbps and Long-Range modes (125 kbps, 500 kbps)

### Microcontroller Subsystem

- ARM Cortex-M4 processor FPU core with up to 180 MHz
- Integrated FPU, MPU, and NVIC
- In-System Programming (ISP) and Over-the-Air (OTA) wireless firmware update
- Power-On Reset (POR), Brown/Black-out and Black-out Detection
- Rich set of Analog and Digital Peripherals
- Digital Peripherals - SDIO, 1x USART, 2x UART, 4x SPI, 3x I2C, 2x I2S, SIO, PWM, QEI
- Timers: 4x 16/32-bit, 1x 24-bit, WDT, RTC
- Up to 46 GPIOs (GPIO Multiplexer)
- Analog Peripherals - 12-bit 16-ch, 5 Msps ADC, 10-bit DAC
- 3x Op-amps 2x Comparators, IR detector and Temp Sensor, 8 capacitive touch sensor inputs

## Best-in-Class Security

- PSA-L2 Certifiable
- QSPI Secure XIP from Flash (w/ AES-XTS)
- Secure Zone, Separated TEE
- TRNG, Root of trust (PUF)
- Secure Boot & OTA
- Advanced Cryptographic Accelerators

## Ultra-Low System Power Consumption

- Wi-Fi Standby Associated mode current: 50  $\mu$ A @ 1-second interval
- Deep sleep current < 1  $\mu$ A, Sleep/Standby current (RAM retention) < 10  $\mu$ A
- Low MCU Sub-system active current: 19  $\mu$ A/MHz in LP mode

## Software and Protocol Support

- Integrated Wi-Fi stack, TCP/IP stack, Bluetooth stack supporting wireless coexistence
- Matter over Wi-Fi with Bluetooth LE commissioning
- Support for Embedded Client mode, Access Point mode, Concurrent Wi-Fi and Bluetooth LE mode
- Supports advanced Wi-Fi and Networking security features: WPA2/WPA3-Personal and Enterprise security
- Integrated TCP/IP stack supports HTTP/HTTPS, DHCP, SSL/TLS1.3, MQTT
- Wireless firmware upgrade and provisioning
- Supports host-less SoC modes and hosted (Transceiver and Network Co-processor (NCP) modes

## Operating Conditions

- Wide operating supply range: 1.75 V to 3.63 V
- Operating temperature: -40°C to +85/105°C (industrial grade)

## Package Size

- QFN: 7.00 mm x 7.00 mm x 0.85 mm

## Development Environment

- Simplicity Studio v5