

# WISEN-1 2.4GHz, 1T1R, Wi-Fi 6 + BLE 5

## 内置应用MCU的低功耗 Wi-Fi & BLE 芯片



WISEN-1是一款高度集成的1T1R 2.4GHz Wi-Fi 6 + BLE 5.1芯片和内置应用MCU的SoC解决方案，适用于低成本和低功耗的物联网应用。WISEN-1卓越的通信距离和低功耗使其成为智能家居（比如远程监控和传感）、电池类IPC、可视门铃、联网家电等低功耗应用的理想解决方案。

应用处理器子系统包含高性能的32位RISC-V MCU，工作频率高达160MHz，包括嵌入式SRAM/ROM。Wi-Fi子系统包含 2.4GHz 射频和 802.11b/g/n/ax 调制解调器及MAC，以实现低延时、长距离和低功耗。蓝牙LE 子系统包含蓝牙5.1射频、调制解调器和链路控制器，可以实现蓝牙Mesh功能。

WISEN-1通过极少的外围器件实现超小型解决方案，从而降低模组和系统级的成本。该SoC芯片方案支持常用的外围接口和安全功能，可靠的连接和电源管理技术可实现极低的工作和睡眠功耗，从而延长电池供电类设备的使用时间。

### 功能描述

#### WLAN

- IEEE 802.11 b/g/n/ax compliant
- 11b/g/n 20/40MHz bandwidth and 11ax 20MHz in 2.4GHz band
- 1T1R mode with data rate up to MCS 7
- Support MU DL/UL OFDMA
- Support STBC
- Support TWT
- Security support for WPA WPA/WPA2/WPA3
- Support IEEE 802.11e and Wi-Fi Multimedia (WMM)
- Supports 802.11w protected managed frame
- TX/RX A-MPDU, RX A-MSDU
- Fragmentation and defragmentation
- Greenfield, mixed mode, legacy modes support
- Support Soft-AP mode and concurrent mode
- Integrated LNA, PA and T/R switch
- Low power consumption

#### 处理器及内存

- 32-bit RISC-V single-core application processor with floating-point support
- 384 KB ROM
- 352 KB SRAM
- embedded 4MB NOR Flash
- SPI (single, dual & quad) for external FLASH

#### Bluetooth Low Energy

- Bluetooth LE 5.1 fully compliant
- Data rate 1Mbps, 2Mbps, Long range 125kbps and 500kbps
- Auto acknowledgement, retransmission and flow control
- Support full-function Bluetooth LE AoA and AoD features
- Advertising extensions
- Long data and Adv packets
- Support for stable modulation index
- Channel selection algorithm #2
- Multiple advertisement sets
- Both central and peripheral modes
- Integrated Balun and PA

#### 安全

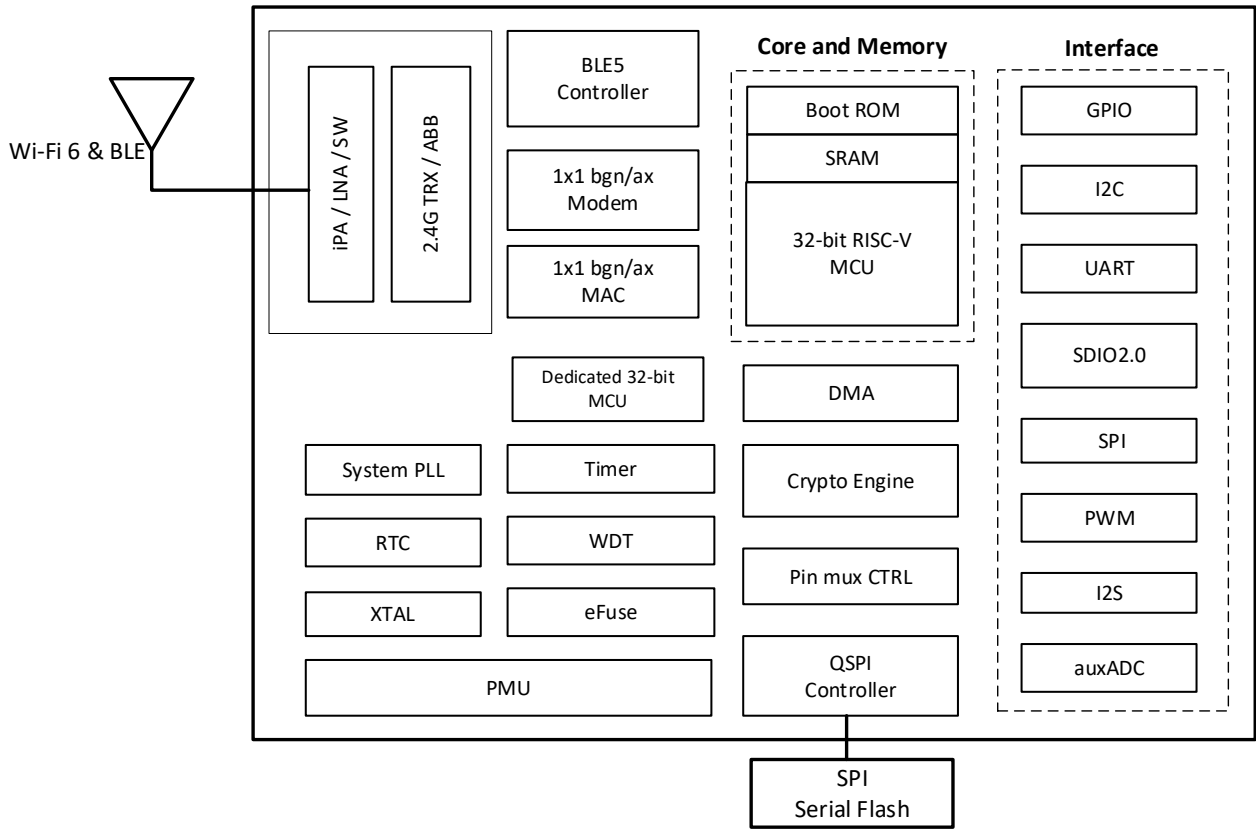
- Secure boot
- Flash encryption
- Cryptographic hardware acceleration

#### 接口

- Programmable GPIO, 12-bit SAR ADC
- 2 x SPI master, 3 x UART, 2 x I2C
- 6 x PWM controllers, 1 x I2S
- SDIO 2.0 device

#### 供电及封装

- Support 2.7V~3.6V voltage input
- 40MHz crystal clock
- QFN 40-pin, 5mm x 5mm



WISEN-1 系统框图