

# WISEN-2 2T2R, 2.4G&5G, 80MHz Wi-Fi 6 + BT 5

## High-Performance Wi-Fi & BT Combo



WISEN-2 is a highly integrated system-on-a-chip (SoC) that incorporates 2T2R dual-band Wi-Fi 6 and Bluetooth 5 in a single chip.

The integrated Wi-Fi MAC/PHY/RF support the cutting edge IEEE802.11ax standard and Wi-Fi Alliance Wi-Fi CERTIFIED 6™ Release 2, delivering data rates of up to 1.2Gbps with improved network efficiency at lower power consumption, while keeping backward compatibility with legacy IEEE802.11a/b/g/n/ac standards.

The Bluetooth subsystem consisting of BT/BLE link controller, baseband, and RF conforms to Bluetooth 5 standard and supports BT/BLE dual mode operation. The internal Wi-Fi/Bluetooth coexistence solution carefully orchestrates Wi-Fi and Bluetooth traffic to minimize interferences between two radios.

Support for high-speed interfaces including PCIe 2.1, USB 3.0/2.0, and SDIO 3.0, and integrated RF front end components such as PA, LNA and Balun make WISEN-2 an ideal solution for designing a cost-effective and compact form factor high performance wireless connectivity solution for consumer devices and applications such as Laptops, TVs, set top boxes, IP cameras, wireless storage, and more.

## Features

### WLAN

- Integrated with RF, PHY and MAC that are compliant with IEEE 802.11a/b/g/n/ac/ax standards
- 2x2 MIMO, 80MHz channel width and 1024-QAM support achieving max. data rate of 1.2Gbps
- DL/UL MU-MIMO and OFDMA
- LDPC and BCC
- STBC
- DCM
- Beamforming
- Digital Pre-distortion (DPD)
- Radar detection and DFS
- A-MPDU/A-MSDU
- BSS Color
- TWT
- Multi-BSSID
- Simultaneous dual-band dual-concurrent support (DBDC) in 2.4GHz and 5GHz bands
- Concurrent mode (STA and soft-AP)
- Supports Wake-on-WLAN via magic packet and wake-up frame

### System

- Support multiple configurable GPIO pins
- UART/JTAG/I2C/SPI/PCM
- Multiplexed ADC
- Integrate eFuse to store device specific information and RF calibration data
- Advanced FDD/TDD mode Wi-Fi/Bluetooth coexistence scheme

### Bluetooth

- Support Bluetooth 5, Bluetooth low energy and backward compatible with Bluetooth v2.1+EDR
- Supports all packet types in basic rate and enhanced data rate
- Dual mode support: simultaneous LE and BR/EDR
- Integrated Balun and PA
- Up to 7 BT link + 12 BLE link
- Support secure simple pairing
- Support SCO and eSCO link with re-transmission
- Support wide-band speech and hardware
- Channel quality driven data rate adaptation
- Channel assessment and WB RSSI for AFH

### Security

- WPA2 and WPA3 personal
- Hardware cryptographic engine supporting WEP-40/104, TKIP, AES-CCMP-128/256, AES-GCMP-128/256

### Host Interfaces

- PCI Express base specification v2.1 for WLAN
- USB3.0/2.0 for WLAN and BT
- SDIO 1.1/2.0/3.0 for WLAN with clock rate up to 208 MHz
- HS-UART with configurable baud rate for Bluetooth

### Package

- FCCSP 7.8mm x 7.0mm