



# 2.4/5#GHz Dual-band 1x1 Wi-Fi® 6 (802.11ax) + Bluetooth® 5.4 Solution

## IW611

Last Updated: Feb 28, 2024

The IW611 is a highly integrated 2.4/5#GHz dual-band 1x1 Wi-Fi 6 and Bluetooth/Bluetooth Low Energy 5.4 single-chip solution optimized for a broad array of IoT and Industrial applications in smart home, smart devices and accessories, smart appliances, smart energy, industrial automation, gateways and many more. This high degree of integration contributes to very low system costs and a minimum external BOM while achieving efficient co-existence between all internal radios as well as external radios, such as LTE.

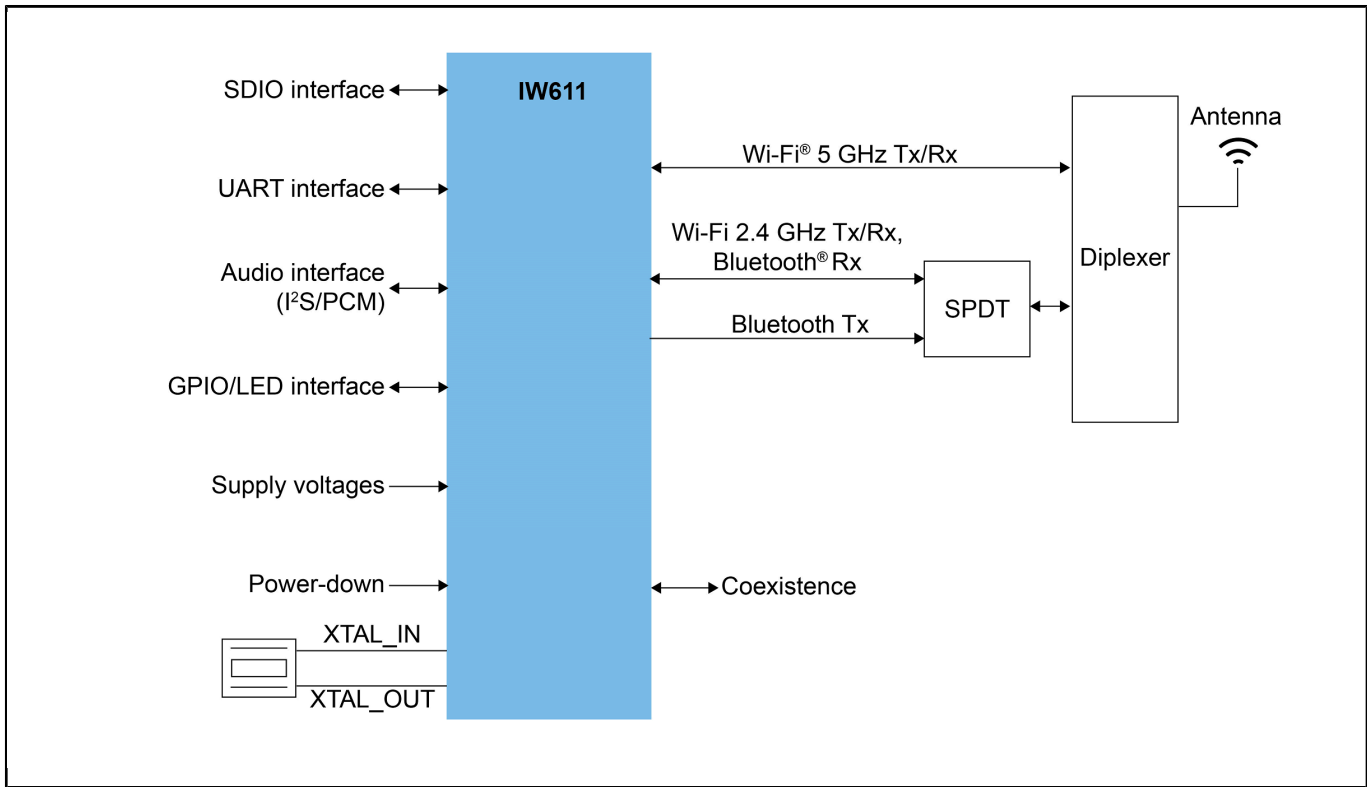
IW611 includes a full-feature Wi-Fi subsystem powered by NXP's 802.11ax (Wi-Fi 6) technology bringing higher throughput, better network efficiency, lower latency and improved range over previous generation Wi-Fi standards. The Wi-Fi subsystem integrates a Wi-Fi MAC, baseband, and direct-conversion radio with integrated PA, LNA, and transmit/receive switch removing the need for an RF front end module (FEMs) saving cost and reducing system complexity.

In addition to a Wi-Fi 6 radio, the IW611 integrates an independent Bluetooth 5.4 subsystem that supports Bluetooth and Bluetooth Low Energy (LE). The device features Bluetooth Profiles such as hands free (HFP), advanced audio distribution profile (A2DP) for audio streaming as well as additional profiles like dual wide band speech (WBS). For Bluetooth Low Energy, the IW611 enables 2 Mbit/s high-speed data rate, long range and extended advertising. Finally, LE Audio is supported utilizing Isochronous channels for a better overall audio experience.

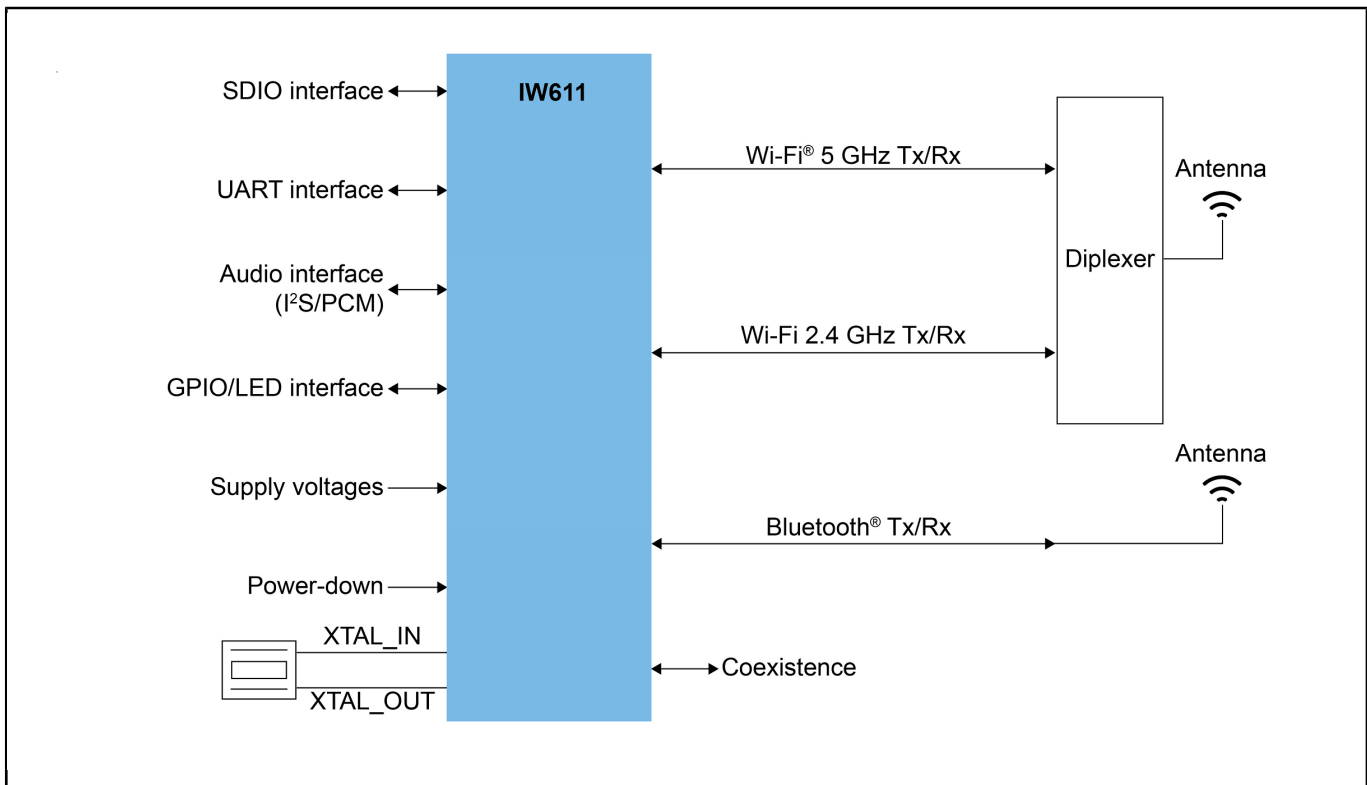
The IW611 integrates dedicated CPUs and memories for both the Wi-Fi and Bluetooth subsystems which enable real time, independent protocol processing. Interfaces for connecting the IW611 to external host processors include SDIO 3.0 for Wi-Fi and UART for Bluetooth.

Wireless modules based on the NXP IW611 are offered by leading [module manufacturers](#).

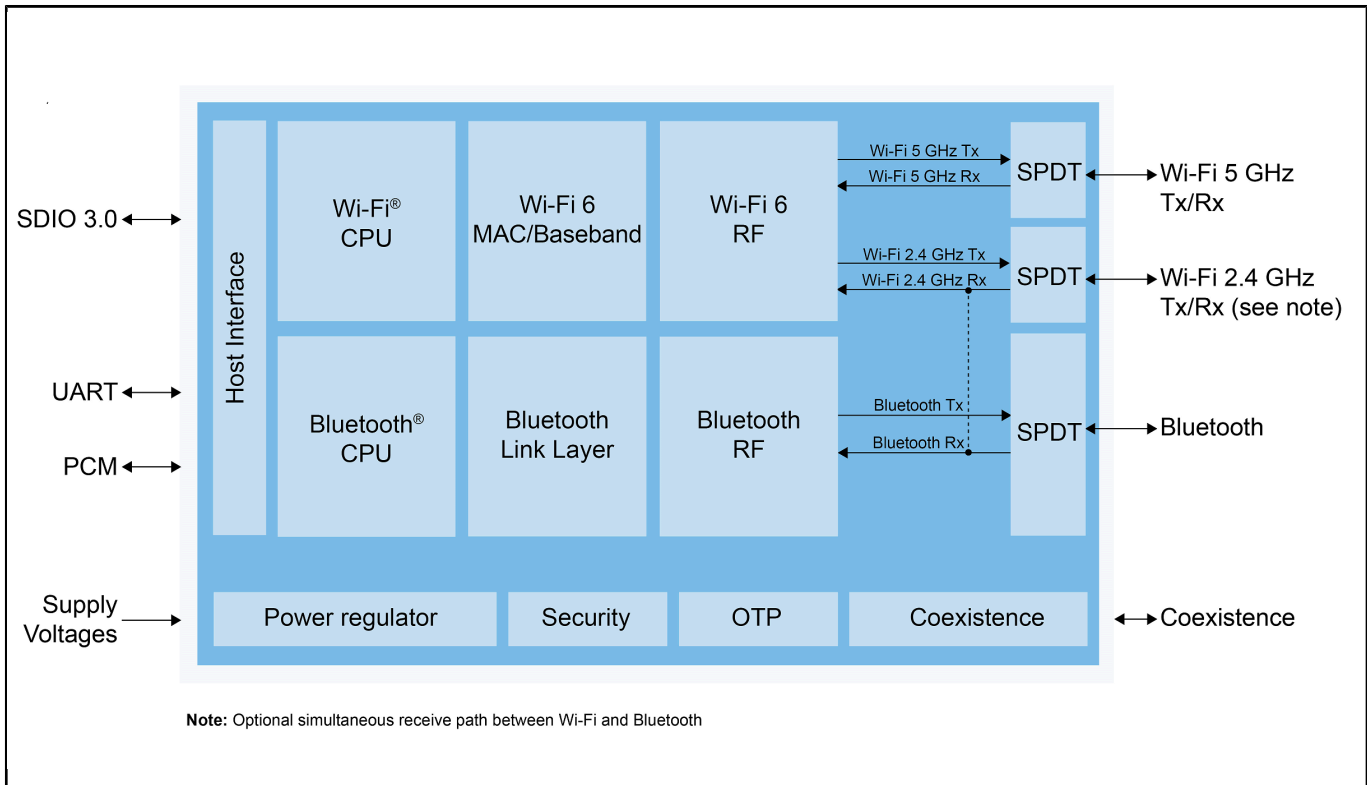
**IW611 application diagram - Single antenna Block Diagram**



**IW611 application diagram - Dual antenna Block Diagram**



**IW611 internal block diagram Block Diagram**



View additional information for [2.4/5GHz Dual-band 1x1 Wi-Fi® 6 \(802.11ax\) + Bluetooth® 5.4 Solution](#).

**Note:** The information on this document is subject to change without notice.

[www.nxp.com](http://www.nxp.com)

NXP and the NXP logo are trademarks of NXP B.V. All other product or service names are the property of their respective owners. The related technology may be protected by any or all of patents, copyrights, designs and trade secrets. All rights reserved. © 2024 NXP B.V.