The Synaptics SYN43598 system on chip (SoC) combines a dual-band (2.4 GHz, 5 GHz) Wi-Fi 2x2 MAC/baseband/radio with integrated Bluetooth 5.2 to reduce the space, cost, power, complexity, and time to market of wirelessly enabled IoT devices.

Features
- Supports Wi-Fi 2.4/5 GHz with best CMOS RF, including integrated power amplifiers (PAs) and low-noise amplifiers (LNAs) (external PA and LNA optional) with highest transmit (Tx) power level and receive (Rx) sensitivity.
- IEEE 802.11ac compliant with legacy support for 802.11a/b/g/n.
- Supports real-time simultaneous dual-band (RSDB) operation at 2.4 and 5 GHz.
- 20/40/80 MHz channels for the main (Main) 2x2 Wi-Fi core, and 20 MHz channels for the auxiliary (Aux) 2x2 Wi-Fi core.
- 2x2 Wi-Fi antenna array.
- Supports three antennas with two dedicated to Wi-Fi and one dedicated to Bluetooth.
- Integrated Bluetooth 5.2 with support for Bluetooth Low Energy (BLE).
- Synaptics Smart Co-Ex for best-in-class coexistence of Wi-Fi and Bluetooth radios in the 2.4 GHz band.

Benefits
- High integration reduces footprint, cost, power, complexity, and time to market.
- Operates in 2.4 GHz and 5GHz bands simultaneously for optimum performance and more robust connectivity at up to 867 Mbps throughput.
- Allows multiple concurrent Bluetooth connections and audio streams.
- Advanced Wi-Fi/Bluetooth radio co-existence capability for high quality of service (QoS) and robust connections.
- Secure.
- Seamless interoperability across multiple heterogeneous wireless networks.

Applications
- Multimedia streaming for the smart home
- Automotive in-cabin entertainment
- Personal area networks
- Security
- Smart factories/Industry 4.0
System Block Diagram

SYN43598 Wi-Fi™ + Bluetooth™ Combo SoC with RSDB

Product Brief

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