



SYN4383 "Triple Combo 3" Wi-Fi, Bluetooth, IEEE 802.15.4 SoC

PRODUCT BRIEF

The Synaptics SYN4383 integrates Wi-Fi® 6/6E, Bluetooth® 5.4, and IEEE 802.15.4 radios on a single state-of-the-art system on chip (SoC) to reduce the space, cost, power, complexity, and time to market of wirelessly enabled IoT devices.

With applications ranging from multimedia streaming for the smart home to automotive entertainment, security, and the smart factory, the SYN4383 is Matter compliant for secure, seamless interoperability in a heterogeneous, multi-platform wireless environment. The Wi-Fi radio is IEEE 802.11ax compliant with legacy support for 802.11a/b/g/n, has a 2x2 antenna arrangement for a throughput of up to 1200 Mbps, and features real simultaneous dual-band (RSDB) capability to allow the 2.4 GHz and either the 5 GHz or 6 GHz radios to connect and stream multimedia content at the same time for optimum performance and more robust connectivity. The Bluetooth 5.4 (6.0 compliant) radio features LE Audio for multiple concurrent Bluetooth audio streaming connections, as well as Bluetooth Channel Sounding for accurate positioning. Built-in support for the Thread networking protocol allows devices using the SYN4383 to connect to a smart home's secure, low-power mesh network while acting as a Thread Router node, including advanced mesh networking and security features.

BENEFITS

- ▶ Reduces footprint, cost, power, complexity, and time to market
- ▶ Simultaneous 2.4 GHz and 5 or 6 GHz band operation with up to 1200 Mbps throughput
- ▶ Allows multiple concurrent Bluetooth connections and audio streams
- ▶ Enables highly accurate positioning
- ▶ Advanced Wi-Fi/Bluetooth radio co-existence

APPLICATIONS

- ▶ Multimedia streaming for smart home
- ▶ Automotive in-cabin entertainment
- ▶ Position tracking
- ▶ Personal area networks
- ▶ Security
- ▶ Smart factories/Industry 4.0



PERFORMANCE AND COST OPTIMIZED



ROBUST, HIGH-PERFORMANCE WI-FI



BEST WI-FI AND BLUETOOTH COEXISTENCE



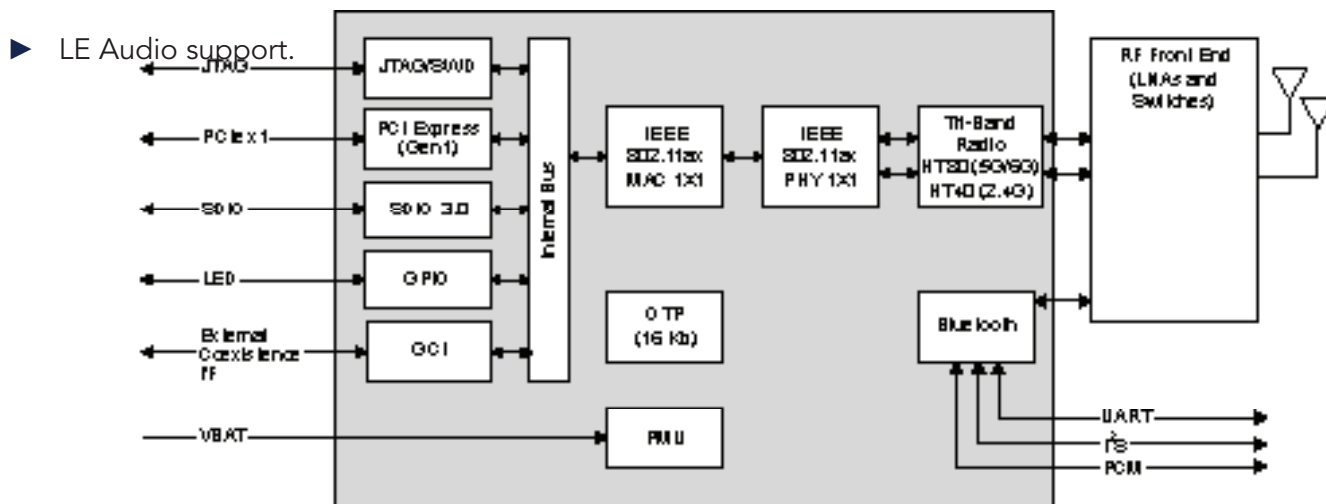
LOW SYSTEM COST FOR IOT



FEATURES

- ▶ Supports Wi-Fi 2.4/5/6/6E with best CMOS RF, including integrated PAs and LNAs with high transmit (Tx) power level and receive (Rx) sensitivity, and integrated T/R switch.
- ▶ Supports real simultaneous dual-band (RSDB) operation with 2.4 GHz radio and either 5 or 6 GHz radio.
- ▶ 2 x 2 MIMO antenna array
- ▶ Integrated Bluetooth 5.4 with support for Bluetooth Low Energy (BLE) and Bluetooth Channel Sounding.
- ▶ LE Audio support
- ▶ IEEE 802.15.4 physical layer (PHY) for Zigbee and Thread support.
- ▶ Application-layer support for Matter-complaint security and interoperability.
- ▶ Synaptics Smart Co-Ex™ for best-in-class coexistence of Wi-Fi and Bluetooth radios in the 2.4 GHz band.

SYSTEM BLOCK DIAGRAM



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