

SX-SDPAN

802.11a/b/g/n SiP for Mobile Applications



Highly Integrated Dual Band 802.11n plus Advanced Bluetooth 4.0 Solution

The Silex SX-SDPAN (Qualcomm Atheros AR6233) is a third-generation Wireless LAN solution, featuring dual-band 802.11n plus Bluetooth. Based on the game-changing AR6003 Wireless LAN chip, the SX-SDPAN brings 802.11n throughput, range and power efficiency to portable devices including patient monitors, printers, handheld terminals and more.

The SX-SDPAN integrates all WLAN and Bluetooth functionality in a single package to support a low-cost PCB layout implementation. 5 GHz WLAN is supported with an external Front End Module (FEM). Shared and dual antenna configurations can be implemented with a minimum number of external RF components.

Benefits:

- High RBOM integration enables design flexibility and lowest cost
- Smallest foot print for space constrained devices
- Ultra low power consumption for extended battery life
- Supports 40 MHz channels at 5 GHz allowing for highest throughput for bandwidth intensive applications

Solution Highlights:

The SX-SDPAN incorporates all the features and performance of the award winning Qualcomm Atheros ROCm® AR6003 solution, including:

- Single-stream 802.11n for faster downloads, longer range, and lower power consumption
- Bluetooth 3.0+HS and 4.0 Low Energy
- High level of RF integration enables direct antenna connection through separate 2.4 GHz WLAN and Bluetooth antenna ports
- Flexible dual-band solution with 5 GHz front end module (FEM); shared and dual antenna configurations supported
- Highest level of on-chip integration using CMOS technology
 - Radio/MAC/Baseband
 - Patented Qualcomm Atheros Efficient Power Amplifier (EPA™) for high transmitter output power
 - Integrated power management unit
- Qualcomm Atheros Universal Wireless Cooperation for enhanced Wi-Fi/Bluetooth Coexistence

Features:

- IEEE 802.11a/b/g/n 2.4/5 GHz
- Bluetooth 3.0+HS and 4.0 Low Energy
- Integrated CMOS Efficient Power Amplifier (EPA™), LNA
- Adaptive radio biasing for low-power or high-performance modes
- Industry-leading receive sensitivity
- No external EEPROM required for RF calibration
- Integrated RISC processor
- Support for industry standard QoS schemes (802.11e, WMM, WMM-PS)
- Hardware accelerated security, including WAPI (China)

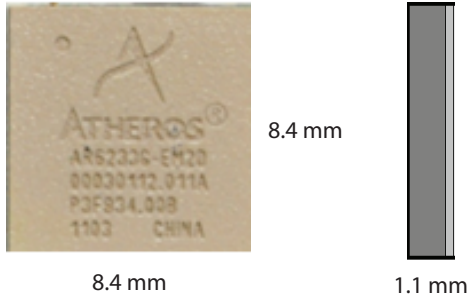
Target Applications:

The SX-SDPAN is ideal for any high volume portable device where there is a requirement to achieve the lowest BOM cost or smallest foot print. Implementation of a System-in-Package solution is recommended for companies that have RF hardware expertise. Software driver and supplicant development is also generally required.

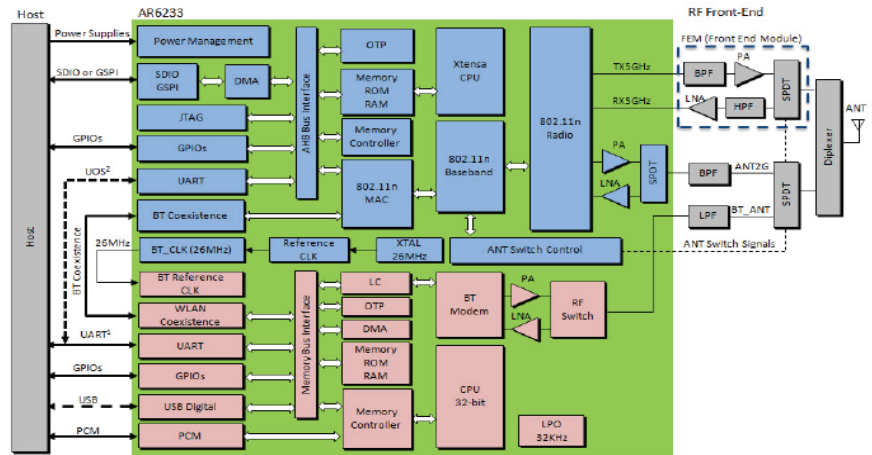
Specifications:

| | |
|--------------------------|---|
| Product Name | SX-SDPAN-2830BT |
| Chipset | Qualcomm Atheros AR6233 |
| Operating Voltage | VDD 3.3V, AVDD 1.8v |
| Dimensions | 8.4 x 8.4 x 1.1 mm LGA package with 650um pitch pads |
| Bluetooth Specifications | BT3.0+HS, BT4.0, Class 1.5 |
| Storage Temperature | -45 to +125 degrees C |
| Operating Temperature | -20 to +85 degrees C |

Dimensions and Architecture



Physical Specifications 8.4 x 8.4 x 1.1 mm LGA Package



General Specifications

- On-Chip Functionality: Single-chip MAC/BB/RF/PA/LNA
- Frequency Band: 2.4 GHz / 5 GHz
- Network Standard: 802.11a, 802.11b, 802.11g, 802.11n
- Modulation Modes: CCK and OFDM with BPSK, QPSK, 16 QAM, 64 QAM
- Hardware Encryption: WEP, WPA/WPA2, (AES and TKIP), WAPI
- Quality of Service (QoS): WMM, WMM-PS, 802.11e

Interfaces

- Communications: SDIO 2.0, GSPI
- Physical Specifications: 8.4 mm x 8.4 mm LGA Package
- 802.11n (PHY Layer) Throughput at different Modulations

| Mode | MCS | Modulation | Data Rate (Mbps) | | | |
|--------------|-----|------------|-------------------------|------|-------------------|-------|
| | | | 20MHz (2.4GHz and 5MHz) | | 40MHz (5GHz only) | |
| | | | FGI | HGI | FGI | HGI |
| IEEE 802.11n | 0 | BPSK | 6.5 | 7.2 | 13.5 | 15.0 |
| | 1 | QPSK | 13.0 | 14.4 | 27.0 | 30.0 |
| | 2 | QPSK | 19.5 | 21.7 | 40.5 | 45.0 |
| | 3 | 16-QAM | 26.0 | 29.9 | 54.0 | 60.0 |
| | 4 | 16-QAM | 39.0 | 43.3 | 81.0 | 90.0 |
| | 5 | 64-QAM | 52.0 | 57.8 | 108.0 | 120.0 |
| | 6 | 64-QAM | 58.5 | 65.0 | 121.5 | 135.0 |
| | 7 | 64-QAM | 65.0 | 72.2 | 135.0 | 150.0 |

Driver Support

- Reference Drivers:**
- Linux
 - Android
 - Windows Embedded Compact 7
 - QNX Neutrino
 - Green Hills Intergrity
 - Mentor Graphics Nucleus

Ordering Information

- SX-SDPAN-2830BT: Bulk Packaged, Tape / Reel
- SX-SDPAN-2830BT-SP: 10 Unit Sample Pack
- SX-6K3-EVK-DB: AR6003 Dual Band Evaluation Kit

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