



# Single-Chip 802.11 b/g/n 2.4G WLAN with Bluetooth 4.1

## Overview

The XR829 is a fully integrated single chip which supports 2.4G IEEE 802.11 b/g/n WLAN and Bluetooth 2.1/4.0/4.1. It is optimized for short range wireless connected applications such as Tablets, Smart TV Boxes, Sports DV cameras and IOT devices.

## Highlights

- IEEE 802.11 b/g/n supports up to 150Mbps, with Bluetooth v2.1/4.0/4.1 dual mode.
- 2.7V-5.5V single VBAT supply support by high efficiency SMPS or LDO.
- Industry leading power consumption ensures excellent battery life.
- Provides a high level of integration, which effectively reduces the BOM cost and delivers a faster time-to-market for new wireless products.
- Packet Traffic Arbitration (PTA) efficiently enhances the coexistence performance between WLAN and Bluetooth.

## Features

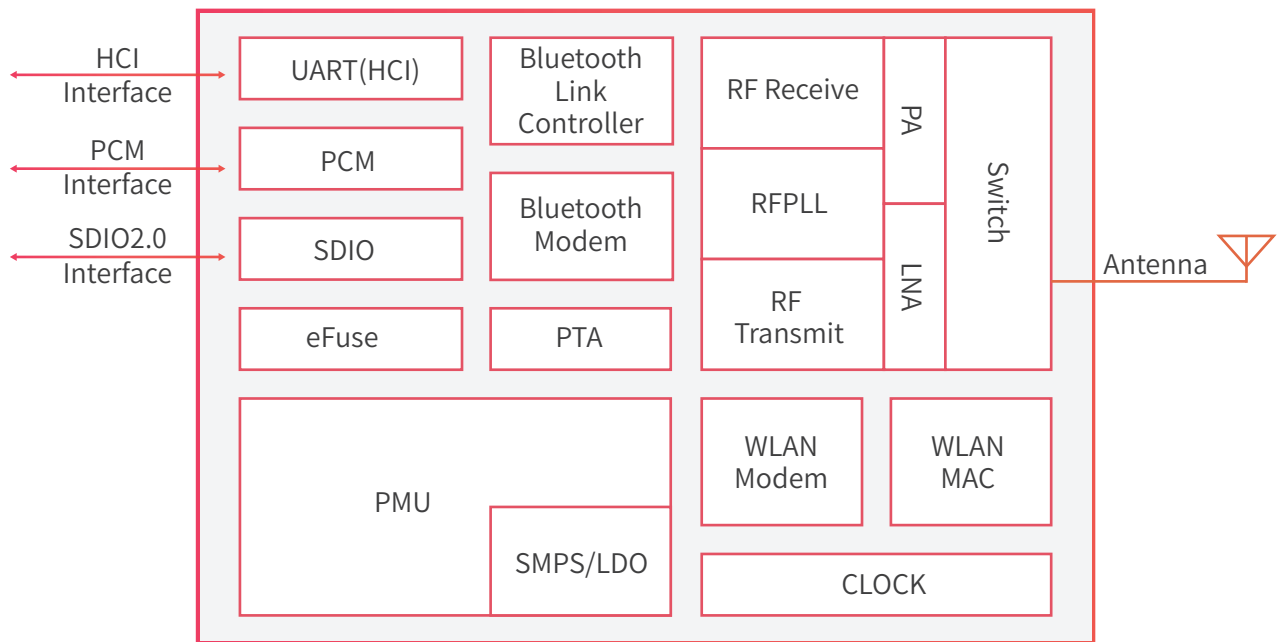
GENERAL	<ul style="list-style-type: none"><li>• Package – 5x5mm<sup>2</sup> 40pin QFN</li><li>• Clocks:<ul style="list-style-type: none"><li>– XTAL or external reference clock (19.2M/24M/26M/38.4M/40M/52MHz)</li><li>– Internal or external Low power clock at 32k or 32.768 kHz</li></ul></li><li>• Fully on-chip auto calibrations</li></ul>
WLAN	<ul style="list-style-type: none"><li>• Compatible with IEEE 802.11 b/g/n standard</li><li>• WLAN and BT coexistence support</li><li>• Supports:<ul style="list-style-type: none"><li>– 1 Mbps and 2 Mbps DSSS data rates</li><li>– 5.5 Mbps and 11 Mbps CCK data rates</li><li>– 6 Mbps to 54Mbps data rate for 802.11g</li><li>– 6.5 Mbps to 150 Mbps data rate for 802.11n</li></ul></li><li>• Wi-Fi Direct support with concurrent operation</li><li>• MAC enhancements support</li></ul>

BT	<ul style="list-style-type: none"> <li>• Bluetooth v2.1/4.0/4.1 Dual Mode support</li> <li>• Class 1, Class 2 and Class 3 transmitter operation</li> <li>• Host Controller Interface using a high-speed UART, maximum baud rate of 4 Mbps</li> <li>• Adaptive Frequency Hopping</li> <li>• SCO and eSCO support</li> <li>• Trans-coders for A-law, <math>\mu</math>-law and CVSD voice over air</li> <li>• Sniff/Hold/Sniff-Sub-rating low power mode support</li> </ul>
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## Applications

- Tablet PC
- Smart Internet TV Boxes
- Portable Gaming Devices (PGD)
- Portable Media Players (PMP)
- Internet of Things (IOT)

## Block Diagram



The XR829 includes a single-band 2.4G RF transceiver (integration with PA , LNA and TR switch), PMU, WLAN modem, WLAN MAC, BT modem and BT Protocol Stack. The WLAN subsystem keeps data communications with the host using SDIO 2.0, while the Bluetooth subsystem uses HCI Uart and PCM for audio data. The XR829 core benefits are to provide a competitive solution with a high level of system integration. In turn this reduces the overall BOM cost while also shortening the mass production cycle.