



XR809

Single-Chip Wireless MCU

Wi-Fi and Internet-of-Things
Solution for MCU Applications

Overview

The XR809 is a highly integrated single processor, which features an ARM Cortex-M4F MCU, a low power 802.11b/g/n WLAN subsystem and a Power Management Unit (PMU). It is designed for networked low-power embedded applications. It has an integrated network processor with a large set of TCP/IP with IPv4/IPv6 based services. These services can be accessed via a serial UART/SPI link connected to an external host CPU.

Highlights

- High-performance MCU, 384KB SRAM and 16Mbit Flash ROM, which enable software to connect multi cloud services simultaneously.
- Hardware crypto engine makes data transmission more secure and faster.
- A high level of integration effectively reduces the BOM cost and provides a faster time-to-market for new products.
- Industry leading power consumption and effective power management ensure excellent battery life.

Features

Platform	<ul style="list-style-type: none">● ARM Cortex-M4F MCU, up to 160MHz● Embedded 384KB SRAM and 16Mbit Flash ROM● 4 shared universal DMA channels● Low power RTC mode with internal 32KHz RC-OSC● 2Kbit eFuse
Crypto Engine	<ul style="list-style-type: none">● AES ECB/CBC/CTR, 128/192/256-bit key● DES/3DES● MD5/SHA/SHA256, CRC16/32, PRNG
Peripherals	<ul style="list-style-type: none">● SPIx2, UARTx2, I2C, SDIO, IrDA● PWMx4, ADCx3, GPIO

WLAN	<ul style="list-style-type: none"> ● Compatible with IEEE 802.11 b/g/n standard ● Single-band 2.4G 1T1R WLAN with data rate to 72Mbps ● Security support for WPA/WPA2 personal, WPS2.0 ● Integrated LNA, PA and T/R switch ● STA, AP, and mixed mode support ● Embedded NET80211, Supplicant, TCP/IP protocol
Power Management Unit	<ul style="list-style-type: none"> ● Single input power supply: 2.7V to 5.5V ● Integrated 200mA 3.3V LDO for external peripheral devices supply ● Integrated DC-DC and LDOs for the internal power supply ● System ON/OFF modes ● Brownout Detection ● Wakeup source management unit from system OFF/Deepsleep ● Independent power switches for CPU, RAM and Peripherals
Package	<ul style="list-style-type: none"> ● 6mm x 6mm 52-pin QFN package
Other	<ul style="list-style-type: none"> ● $T_{opt} = -40 \sim 85^{\circ}C$, $T_{stg} = -40 \sim 135^{\circ}C$ ● ESD HBM $\pm 4000V$, CDM $\pm 800V$

Block Diagram

