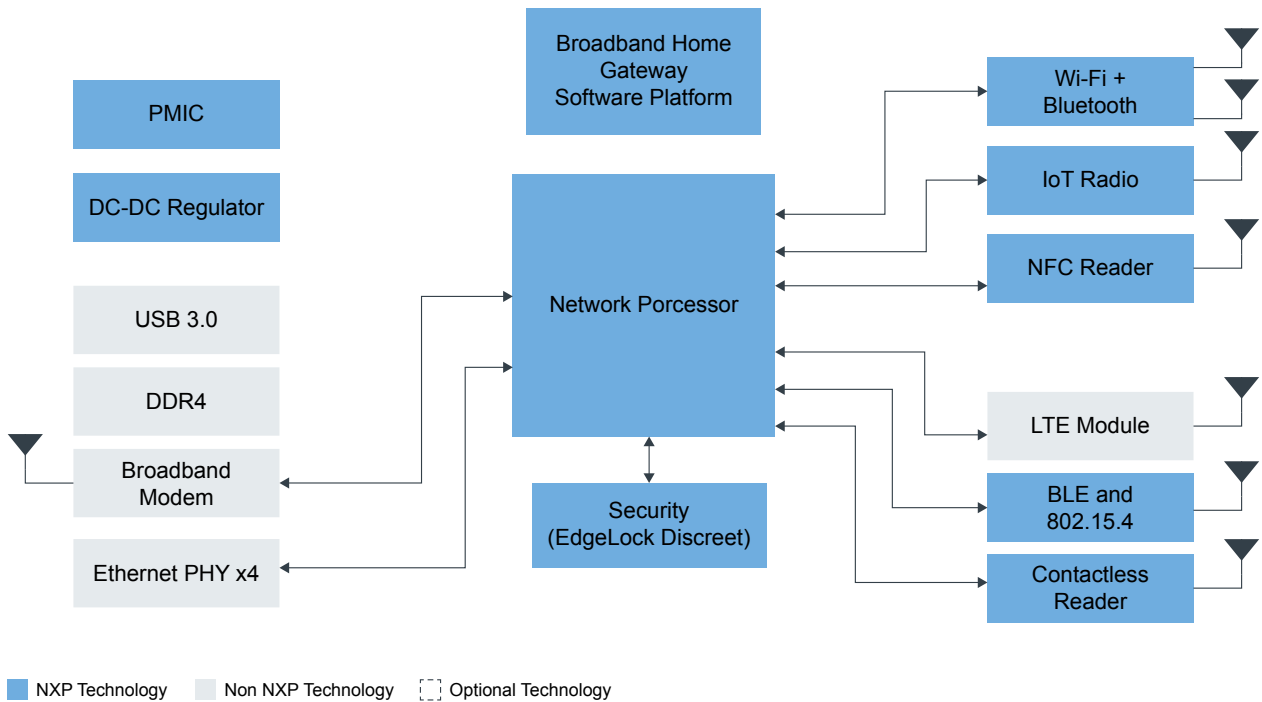# Broadband Modem and Residential Gateway

Last Updated: Mar 18, 2024

A broadband (smart home) gateway is an appliance that delivers broadband data, voice and video services to a home or customer premises. It is the point of entry for Internet services to the home and its performance is key to the quality of experience provided to the end user.

These days, most end users equate Wi-Fi performance in the home with the overall service provided by the broadband operator. More and more people also rely on their broadband data service for TV and video and increasingly expect to manage all of those services with voice-controlled applications. As a result, the residential gateway is moving out of the closet and becoming a central hub for wireless voice, data and video service delivery across the home.

NXP can offer a complete portfolio of solutions for modern residential gateways including gigabit-class network processors with hardware packet processing and QoS, leading-edge Wi-Fi, IOT radios and other supporting devices such as power management ICs. Further, NXP also offers a vertically integrated, extensively tested, power and performance optimized, Linux®-based OpenWRT Gateway application solutions kit (ASK) to customers inclined to build multiple market network products, such as embedded routers or programmable L3 switches based on the Layerscape Communication Processors.

Broadband Modem and Residential Gateway Block Diagram

Diagram labels:

- PMIC
- DC-DC Regulator
- USB 3.0
- DDR4
- Broadband Modem
- Ethernet PHY x4
- Broadband Home Gateway Software Platform
- Network Porcessor
- Security (EdgeLock Discreet)
- Wi-Fi + Bluetooth
- IoT Radio
- NFC Reader
- LTE Module
- BLE and 802.15.4
- Contactless Reader

Legend:
- ■ NXP Technology
- ■ Non NXP Technology
- ⬚ Optional Technology

Recommended Products for Broadband Modem and Residential Gateway	
Network Processor	• LS1046A: Layerscape® 1046A and 1026A Processors • LS1043A: Layerscape® 1043A and 1023A Processors • LS1012A: Layerscape® 1012A Low Power Processor
Software	• Layerscape 1046A Processor Broadband Home Router Application Solutions Kit • Layerscape 1043A Processor Broadband Home Router Application Solutions Kit • Layerscape 1012A Broadband Home Router Application Solutions Kit
PMIC	• FS5600: Automotive Dual Buck Regulator and Controller with Voltage Monitors and Watchdog Timer • PF8100-PF8200: 12-Channel Power Management Integrated Circuit (PMIC) for High-Performance Processing Applications • VR5100: Multi-Output DC-DC Regulator for Low Power LS1 Communication Processors

NFC	• PN7160: 統合型ファームウェアおよびNCIインターフェース搭載NFC Plug and Playコントローラ
Power Management	• FS5600: Automotive Dual Buck Regulator and Controller with Voltage Monitors and Watchdog Timer • VR5100: Multi-Output DC-DC Regulator for Low Power LS1 Communication Processors
Security (EdgeLock Discrete)	• SE050: EdgeLock$^®$ SE050：Plug & Trustセキュア・エレメント・ファミリー 柔軟性に優れた、IoT向けの高度なセキュリティ • SE051: EdgeLock$^®$ SE051：更新機能とカスタム・アプレットのサポートを備えた実証済みで使いやすいIoTセキュリティ・ソリューション • EDGELOCK-A5000: EdgeLock$^®$ A5000 Plug and Trust Secure Authenticator: Authentication Made Secure, Scalable and Easy
Wireless	• KW41Z: Kinetis$^®$ KW41Z-2.4 GHz Dual Mode: Bluetooth$^®$ Low Energy and 802.15.4 Wireless Radio Microcontroller (MCU) based on Arm$^®$ Cortex$^®$-M0+ Core
Wi-Fi + Bluetooth	• 88W8987: 2.4/5 GHzデュアルバンド1x1 Wi-Fi$^®$ 5 (802.11ac) + Bluetooth$^®$ 5.2ソリューション • 88W8997: 2.4/5 GHzデュアルバンド2x2 Wi-Fi$^®$ 5 (802.11ac) + Bluetooth$^®$ 5.3ソリューション
IoT Radio	• JN5189_88_T: JN5189/88 (T): High-Performance and Ultra-Low-Power MCUs for Zigbee$^®$ and Thread with Built-In NFC Option
NFC Reader	• PN7160: 統合型ファームウェアおよびNCIインターフェース搭載NFC Plug and Playコントローラ

View our complete solution for Broadband Modem and Residential Gateway.

Note: The information on this document is subject to change without notice.