



NRC7394

Next generation Wi-Fi HaLow System on Chip
 Enabling Low-Power, Long-Range Connectivity for IoT Applications



Overview

NRC7394 is the advanced Wi-Fi HaLow System-on-Chip (SoC), designed specifically to meet the connectivity needs of the Internet of Things (IoT) era. With its exceptional range, low power consumption, and small size, NRC7394 is the ideal solution for enabling a wide range of IoT applications. Its capability to connect up to 8K devices within a single network makes it perfect for environments with dense deployments of IoT devices. Moreover, Wi-Fi HaLow incorporates advanced power-saving features, significantly reducing power consumption and greatly extending the battery life of connected devices.

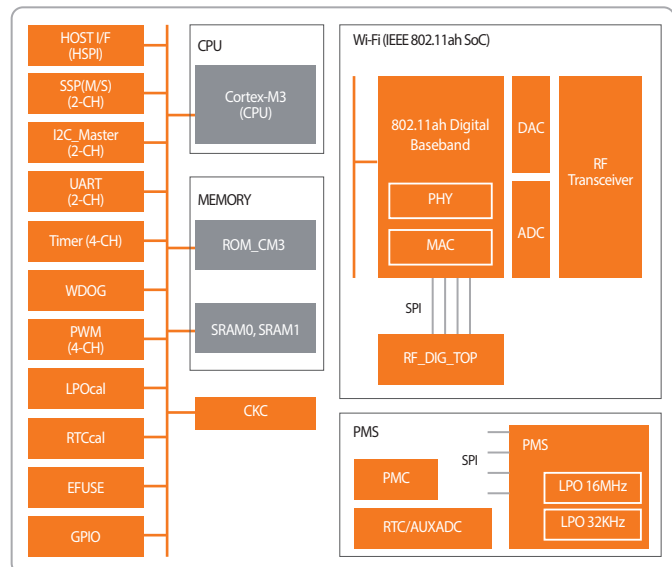
With fully integrated power amplifiers, the NRC7394 offers a robust output of up to 17dBm, providing sufficient power for a wide range of IoT applications. Moreover, its compatibility with various commercial external FEM devices enables further flexibility to achieve even higher output power levels.

The NRC7394's standalone mode support enables the execution of a wide range of IoT applications on embedded ARM Cortex-M3. Additionally, the availability of numerous sample applications simplifies the development of new IoT application programs.



Target Applications

- Agriculture
- Building automation
- Industrial automation
- Drones and robotics
- Smart cities
- Smart home
- Smart grid
- Security and access control
- Healthcare
- Wearable





Specification

CPU

- ARM Cortex-M3 for Wi-Fi and customer application

Memory

- 32KB boot ROM
- 1,088KB system SRAM
- XIP with cache (2 ways, 16KB)
- 48KB retention

Communication Peripherals

- GPIO X 26
- SPI X 2
- UART X 2
- I2C X 2
- 10-bit ADC: 2ch input

RF Transceiver

- Single-ended RF ports
- Frequency band: 750 to 950MHz
- Linear TX output power: 17dBm
- TX gain range: 30dB
- -109 dBm Rx sensitivity

Package & Temperature

- 6mm x 6mm 48-QFN
- -40 ~ +85°C operating temperature



Key Features

- IEEE 802.11ah Wi-Fi HaLow compliant SoC
- Fully Integrated on-chip 11ah modem, RF transceiver, single Cortex processor and memory
- Support for Hosted, Hostless and Standalone operation
- Supports 1/2/4 MHz bandwidth
- Up to 15 Mbps data rate
- Low power operation modes
 - Legacy
 - WMM-PS
 - TWT
- WPA3 security
- Dedicated SPI and UART interface for host
- Various peripheral interfaces for sensor device
- Manufacturing tools for configuration and test
- Diagnostic test tools for indoor and outdoor test
- Software development kit and sample applications