

Hi2110 SoC

Hi2110 is a NB-IoT UHF SoC that operates at sub-GHz Cellular frequencies. It supports small footprint IoT applications using an on-chip application processor with integrated memory, or can communicate with an external MCU through a variety of digital interfaces. The modules produced using ultra-low power Hi2110 are certified by GCF and approved by many operators to deploy on their networks. These IoT devices cover a wide range of applications which include - Smart metering, Smart Grid, Traffic management, Security and Asset tracking, Environmental monitoring and control, Tele-health and Patient monitoring and Smart cities.

Highly integrated mixed-signal IC for NB-IoT

- Single-die: radio transceiver + baseband + applications processor + PMU
- Radio transceiver drives external FEM or PA/filter/switch
- 690-960 MHz tuning range
- 3 x ARM M0 processors for Protocol, Security and Application firmware
- DSP processor for Software defined modem
- Embedded on die flash, ROM and OTP for secure operation
- Integrated PMU, allowing direct from battery
- Integrated sensors and peripherals for applications
- Ultra-low deep sleep current for long battery life



81-pin VFBGA, 5.3x5.3mm, 0.5mm pitch

Serial interfaces available to apps core

- UART x2
- SPI x2 | I2C x1 | PWM x2
- LP UART (Rx at low speed during deep sleep) x1

Digital GPIOs

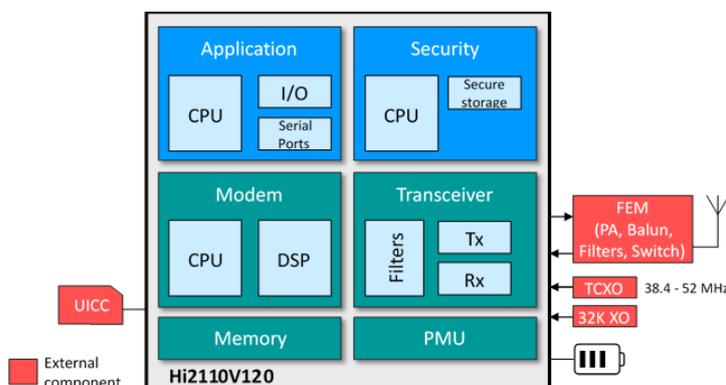
- Up to 20 GPIOs
- Typically 4 GPIOs are needed for controlling the RF front-end, so are not available to the apps core
- Serial interfaces are multiplexed onto these GPIOs
- Edge counters can generate interrupts and cause wake-up from deep sleep

Analogue peripherals

- 10-bit ADC
- 9-bit DAC
- 2 x level comparators that can cause wake up from deep sleep
- Capacitive touch sensor
- 3-bit programmable current source
- PTAT voltage for temperature sensing
- Low frequency clock output
- Buffered voltage reference output

NB-IoT optimised software suite

- 3GPP Release 13 NB-IoT optimised protocol stack
- IPv4 and Non-IP data support
- Apps protocols - UDP/CoAP/LwM2M/DTLS
- Secure Boot and Secure FoTA - software upgrade
- Software Development Kits for apps development
- Range of tools for Calibration, Validation and Debug



Functional Block Diagram

<p>Ordering information Solution: <i>Boudica 120</i> Chip: <i>Hi2110V120</i></p>	
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