

Hi2115 SoC

Hi2115 is a small footprint communications SoC that complies with 3GPP NB-IoT Release 13 (NB1) and Release 14 (NB2) for IoT applications providing an on-chip application processor with integrated memory (and external host MCU interfaces). It operates in the globally approved frequency ranges 698-960 MHz and 1695-2180 MHz with a 200 kHz system bandwidth. The ultra-low power Hi2115 is approved by many cellular operators for deployment on their networks. These IoT devices cover a wide range of applications, including Smart Metering, Smart Grid, Smart City, Security and Asset tracking, Environmental monitoring and control, Wearables, Tele-health and Patient monitoring.

Highly integrated mixed-signal IC for NB-IoT

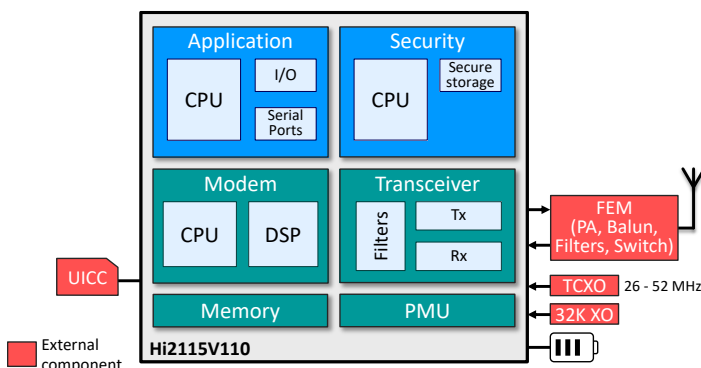
- Single-die: Radio transceiver + Baseband + Applications processor + PMU
- Radio transceiver drives external FEM or PA/filter/switch
- Two wide-band SAW-less receiver inputs
- MIPI/GPIO RF front end control
- 698-960 MHz and 1695-2180 MHz tuning range
- 3 x ARM M0 processors for Protocol, Security and Application firmware
- Single tone and multi tone
- 14dBm power class in addition to 20dBm and 23dBm
- Embedded on-die flash, SRAM, ROM and OTP secure operation
- Integrated PMU, allowing direct from battery
- Integrated sensors and peripherals for applications
- Ultra-low deep sleep current for long battery life

Serial interfaces available to apps core

- UART with programmable baud rates x3
- SPI x2 | I2C x2 | PWM x2
- LP UART (Rx at low speed during deep sleep) x1

Digital GPIOs

- 40 GPIOs
- Serial interfaces are multiplexed onto GPIOs



Functional Block Diagram



121 VFBGA, 5.8x5.8mm, 0.5mm pitch

Analogue peripherals

- 10-bit ADC
- 10-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
- Programmable current source
- Battery voltage sensor

NB-IoT optimised software suite

- 3GPP Release 14 NB-IoT optimised protocol stack
- IPv4, IPv6 and Non-IP data
- UDP/TCP/PPP/DTLS/CoAP/LwM2M
- Secure Boot and Secure FoTA - software upgrade
- Software Development Kits for apps development
- Range of tools for Calibration, Validation and Debug

Ordering information
Solution: *Boudica 150*
Chip: *Hi2115V110*

