

IVY8908A Datasheet Brief

NB-IOT SOC Processor

Preliminary

Product Specification

Revision 1.0.1

1. Product Description

1.1 Overview

IVY8908A is a high performance, highly integrated system-on-chip processor. It could be used as a low power and low BOM cost, NB-IoT application.

IVY8908A integrates all essential electronic components, including baseband, multi-band RF transceiver and a power management unit.

1.2 Features

- **NB-IoT Communication**
 - 3GPP Release 13 NB-IoT specification fully compliant
 - Software upgradeable to support 3GPP Release 14 features
 - Supported RF band:
1/2/3/4/5/8/12/13/17/18/19/20/25/26/28/66/70/71, wide frequency range
 - Supports all three deployment scenarios (standalone, in-band, and guard-band)
 - Supports both single-tone and multi-tone transmission modes in uplink
 - Supports 200KHz bandwidth in downlink and uplink
 - Supports PSM and eDRX mode
 - Support CP-CIoT and UP-CIoT
 - High mobility supported

- **Microcontroller subsystem**
 - Up to 192MHz MIPS processor with 16KB I\$ and 16KB D\$
 - Flexible system frequency at 12/52/72/96/144/192MHz
 - Eight (8) general DMA channels for peripherals and one (1) dedicated channel for debug host
 - One (1) RTC timer with calibration capability
 - Multiple SoC low power modes with rich wakeup sources

- **Memory**
 - Integrated 32Mb SPI NOR Flash
 - Integrated 32Mb pSRAM
 - 64-bit effuse

- **User Interface**
 - Pulse Width Modulator

- Up to 26 GPIOs with interrupt function
- Three (3) UART interface
- One (1) SDIO interface
- Two (2) I2C interface
- Two (2) GPADC, 10bits

- **Power Management**
 - Complete integrated DC-DC and LDOs solution deriving from VBAT
 - Flexible I/O voltage
 - 1 open-drain output switches to supply/control the LED
 - Robust power-on reset (POR) and brown-out reset (BOR)
 - External pin reset

- **Clock Source**
 - 26MHz crystal oscillator
 - 32KHz crystal oscillator or internal 32KHz supplier

- **Debug**
 - Host debug interface allowing non-intrusive in depth investigation
 - GDB debugger
 - Execution logger and profiling through debug port
 - High level text based debugging using Host debug

- **Package**
 - 6.5mm x 7mm, TFBGA package
 - 0.5mm pitch
 - 133 balls