

RAA215300

High Performance 9-Channel PMIC Supporting DDR Memory, with Built-In Charger and RTC

The [RAA215300](#) is a high-performance, low-cost 9-channel PMIC designed for 32-bit and 64-bit MCU and MPU applications. It supports DDR3, DDR3L, DDR4, and LPDDR4 memory power requirements. The internally compensated regulators, built-in Real-Time Clock (RTC), 32kHz crystal oscillator, and coin cell battery charger provide a highly integrated, small footprint power solution ideal for System-On-Module (SOM) applications. A spread spectrum feature provides an ease-of-use solution for noise-sensitive audio or RF applications.

The RAA215300 has six high-efficiency buck regulators and three LDOs to provide a complete power system. The internal device registers and EEPROM can configure and optimize the RAA215300 for different application requirements, for example, power sequences, output voltages, and switching frequencies. Dynamic Voltage Scaling (DVS) and Sleep modes are supported.

The RAA215300 is available in an 8x8mm, 0.5mm pitch thermally enhanced 56-lead QFN package and is specified for operation across a -40°C to 105°C ambient and -40°C to 125°C junction temperature range.

Features

- Input operating voltage range: 2.7V~5.5V
- 6 synchronous buck regulators (supporting 5A, 3.5A, 2x1.5A, 1A, 0.6A), with settable V_{OUT}
- 3 LDOs (supporting 2x300mA, 50mA), with bypass mode, and settable V_{OUT}
- Dedicated VTTREF for DDR memory
- Auto PFM/PWM, FPWM and ultrasonic modes, with selectable PWM f_{SW}
- Built-in 32kHz crystal oscillator (with bypass), RTC, and coin cell/supercapacitor battery charger
- DVS and sleep modes
- Internally compensated
- Spread spectrum
- I²C serial interface (up to 1MHz)
- Pb-free (RoHS compliant)

Applications

- MCU/MPU/SoC consumer and industrial power
- FPGA system power
- Building/factory automation system power

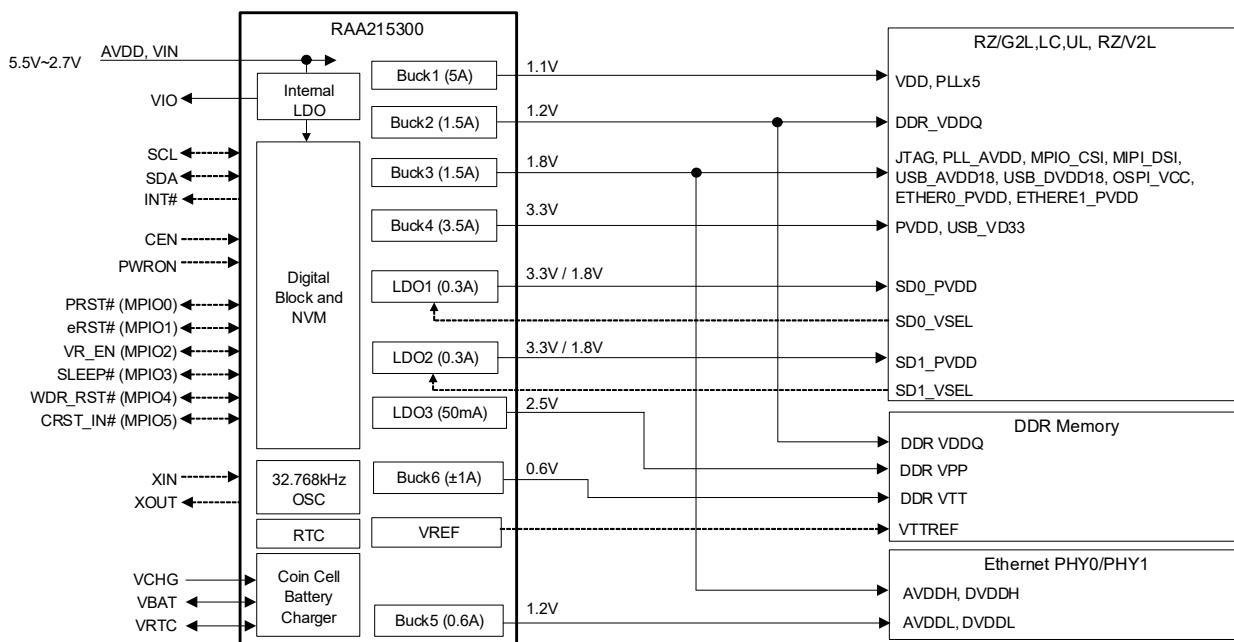


Figure 1. Typical Application Diagram - MPU Power

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