A PMIC for Modern Application Processors

The LTC®3589/-1/-2 is a complete power management solution for portable processors such as NXP i.MX, PXA, ARM, OMAP and other advanced portable microprocessor systems. The device features eight independent rails, with dynamic control and sequencing, in a compact QFN package. These rails supply power to the processor core, SDRAM, system memory, PC cards, always-on real-time clock (RTC) and a variety of other functions.

Features

- Triple I'C Adjustable High Efficiency Step-Down DC/DC Converters: 1.6A, 1A, 1A (1.6A, 1.2A, 1.2A on LTC3589/-1/-2)
- High Efficiency 1.2A Buck-Boost DC/DC Converter
- Triple 250mA LDO Regulators
- Pushbutton On/Off Control with System Reset
- Flexible Pin-Strap Sequencing Operation
- I'C and Independent Enable Control Pins
- Power Good and Power-On Reset Outputs
- Dynamic Voltage Scaling and Slew Rate Control
- Selectable 2.25MHz or 1.12MHz Switching Frequency
- Always Alive 25mA LDO Regulator
- 8μA Standby Current
- 40-Pin 6mm x 6mm x 0.75mm QFN Package

Applications

- Supports NXP i.MX, Marvell PXA and Other Application Processors
- Handheld Instruments and Scanners
- Portable Industrial and Medical Devices
- Automotive Infotainment
- High End Consumer Devices
- Multirail Systems

3 Bucks + Buck-Boost + 4 LDOs + I2C Control + Sequencing + Dynamic Voltage Scaling = A Complete Power Management Solution for Advanced Application Processor-Based Systems

LTC3589 Demo Board
Always-On LDO
For Keep Alive or RTC Rails.

Pushbutton Control
Activates the WAKE Output, Indicates
Pushbutton Status via the PBSTAT Pin, and Initiates a Hard
Reset Shutdown of the Regulators.

Direct µP Support
Power-Up Sequencing, Dynamic Voltage
Scaling and Slew Rate Control, Selectable
Switching Frequency, Marvell Register
Mapping for I2C Commands and Dynamic Voltage
Scaling, Freescale Voltage Standby Pin.

I²C Control
For Regulator Enables, Output
Voltage Levels, Dynamic Voltage
Scaling and Slew Rate Control, Operating Modes
and Status Reporting.

Configurable Start-Up Sequence

Dynamic Output
Voltage Scaling
For Entering Low Voltage Processor
Standby Modes. Four Regulators
Transition Between Two Programmed
DAC Reference Voltages Controlled
by the VSTB Pin or I²C Commands at 1
of 4 Programmable Slew Rates.

Sync Buck Regulators
For High Efficiency
Rails Such as Core, SRAM and System On a Chip.

Low Noise LDOs
For Various Noise-Sensitive Rails

Dynamic Voltage Scaling with Adjustable
Slew Rates for Bucks and LDO2