

# Product Brief

## DA9030 Audio and Power subsystem for advanced applications processors

### General Description

Dialog Semiconductor's DA9030 is a highly integrated power management IC (PMIC) designed to minimize power consumption in entry-level, mid-range and premium smartphones as well as personal digital assistants (PDAs) and communicators with highly sophisticated multimedia and internet capabilities. It is targeted at cell phones incorporating radios for W-CDMA, quad-band GSM, Wi-Fi (802.11b wireless LAN) and Bluetooth.

The DA9030 manages the complete power management requirements of both the communication and application processors, such as Marvell's PXA9xx and PXA27x families.

Providing a complete system power management solution the DA9030 integrates Dialog's patented Smart Mirror linear regulators which exhibit very high power supply rejection whilst operating at very low quiescent current. Complementing the linear regulators are two switching buck converters providing high current, low voltage supplies. The converters are optimized for high efficiency (greater than 92%) and feature integrated low impedance FETs.

When not supporting dual processor systems the second buck converter can be configured to support external low voltage memory.

The DA9030 includes a fully programmable multimode battery charger. The charger uses dual loop monitoring and control for rapid and safe operation, providing automatic charger detection and battery pack temperature monitoring. Other functions integrated include programmable white LED, general purpose LED, 500 milliwatt hands free speaker driver and vibrator driver, minimizing the need for external components.

The DA9030 is offered with a number of variants to support different system configurations. Alternative buck output voltage, battery charger threshold and start up voltage are available

#### Features

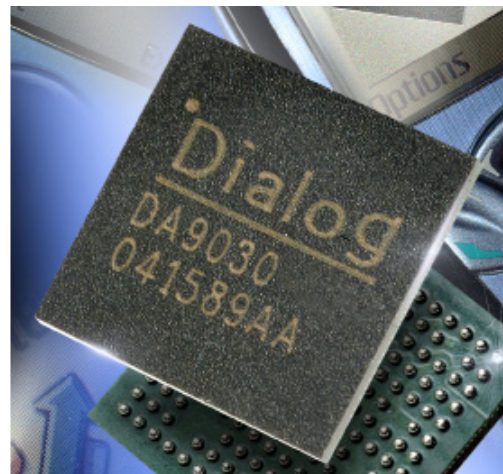
- Highly integrated power management IC with 38 functional blocks
- Supports Dynamic Voltage Management
- Unique Smart Mirror™ LDOs

#### Functions

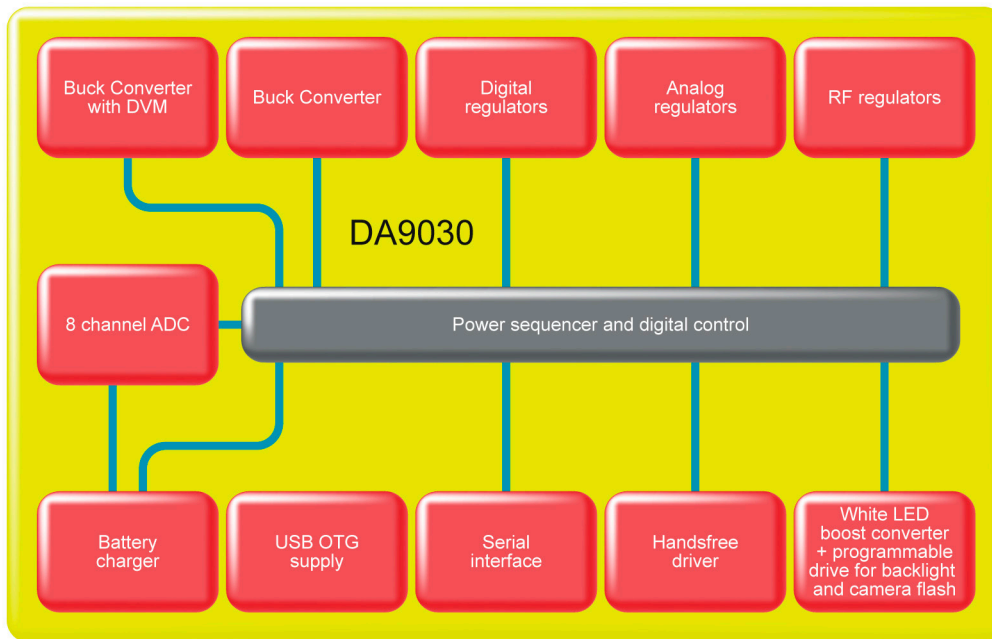
- 19 high performance low dropout programmable regulators
- 2 high efficiency DC-DC buck converters,
- Boost converters for SIM card, white LED and USB interface
- Serial white LED, general purpose LED and vibrator drivers
- 500mW handsfree driver

#### Target Applications

- GSM/GPRS smartphones
- Wireless PDA
- W-CDMA telephones
- Portable computing platforms



## Over View



### Voltage Regulator Section Highlights

- High efficiency buck converters with Dynamic Voltage Management 700mA/700mA
- High power supply rejection, typically 80dB @ 1kHz
- Dynamic biasing for high efficiency and low quiescent consumption
- Over current and thermal protected outputs

### Battery Charger Section Highlights

- Autonomous operation for precharge function
- Fast linear (CV/CC) and pulse charging modes (standalone operation)
- Built-in fixed and programmable safety cutoffs
- Supports charging currents up to 1.4A

### Audio Section Highlights

- 500mW 8Ω loudspeaker driver with volume and anti pop control

### Other Features

- Programmable white LED drivers with boost converter (up to 10 LEDs)
- Programmable standard LED drivers for backlight and signalling
- Programmable vibrator driver
- USB VBUS generator and bus monitoring

### Application Support

- Evaluation kit with Windows GUI based driver

### Package

- 184BGA 8\*8\*1mm, 0.5mm pitch

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