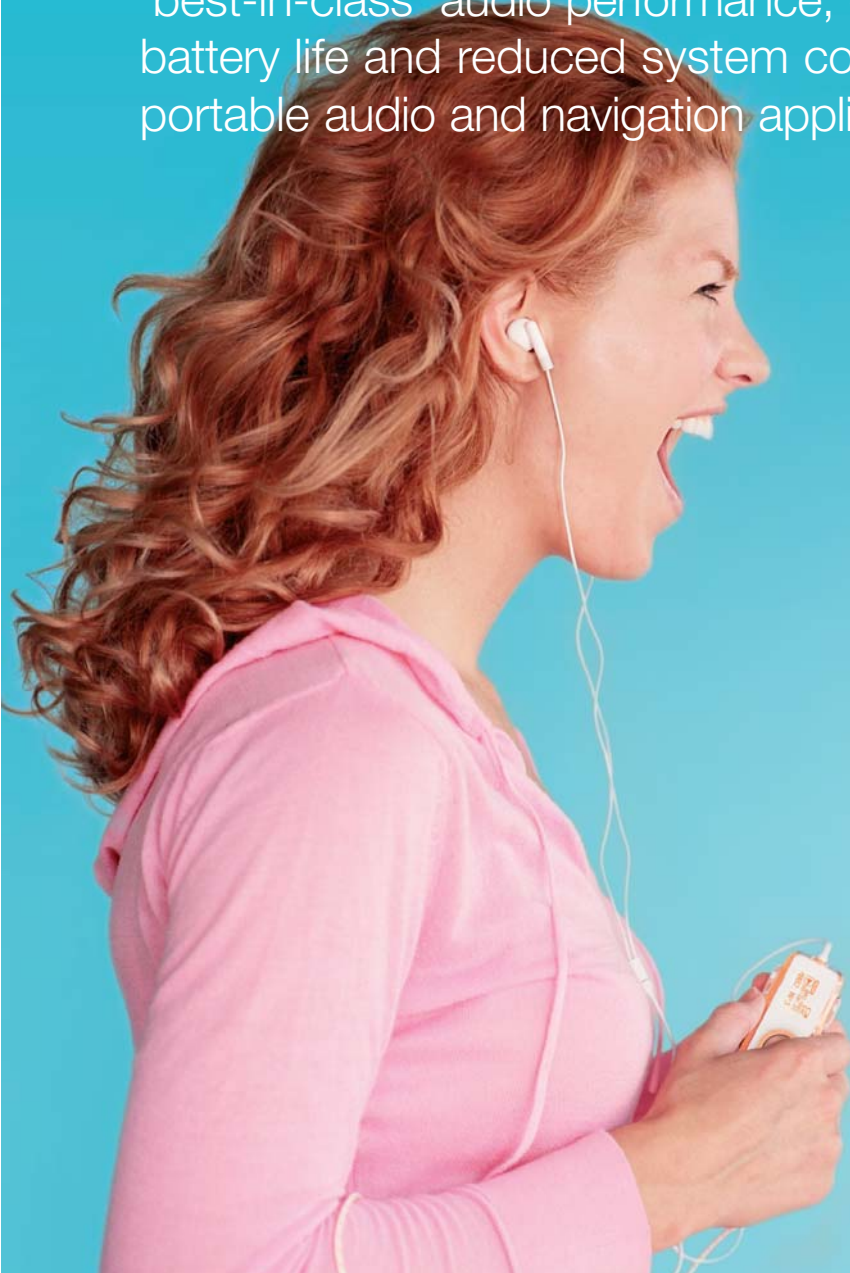


WM8350

AudioPlus™ Power Management solution for portable audio applications.

The WM8350, featuring an integrated Hi-Fi audio CODEC and power management subsystem, delivers 'best-in-class' audio performance, extended battery life and reduced system cost for portable audio and navigation applications.



BENEFITS SUMMARY

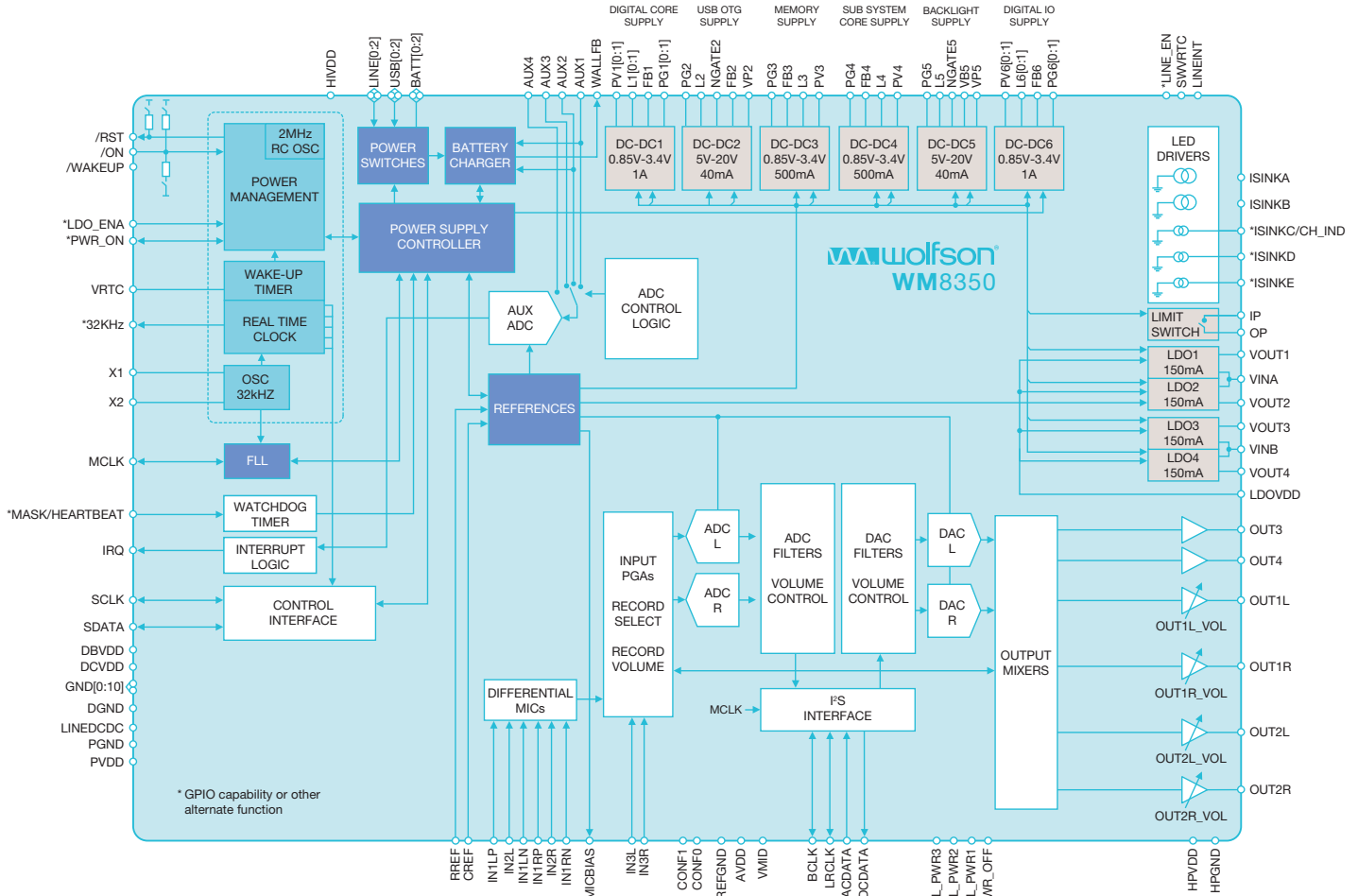
- 'Best-in-class' audio performance
- Extended battery life
- Reduced system cost
- Smaller PCB board area

TARGET APPLICATIONS

- Portable audio and media players
- Portable navigation devices
- VoIP handsets
- Other portable systems powered by single-cell lithium batteries

AudioPlus™ Power Management solution for portable audio applications

WM8350



PRODUCT BENEFITS

- 'Best-in-class' audio performance as used in the world's leading portable audio systems
- Low power CODEC technology extends battery life
- Pop and click suppression reduces need for external circuitry
- >90% power efficiency on DC-DC converters extends battery life

- Reduced external component count saves up to 25% on bill of materials (BOM) cost
- Compact 7x7mm BGA package saves up to 50% on physical board area
- Compatible with leading multimedia application processors
- Faster time-to-market with WM8350 enabled reference designs

The WM8350 is the first in a series of integrated sound and power solutions being developed by Wolfson as part of its AudioPlus™ strategy. It builds on Wolfson's high performance audio signal processing excellence by integrating power management and system features.

HIGH PERFORMANCE AUDIO

The WM8350 offers a high performance audio CODEC, which provides advanced capability for high-quality stereo playback and recording. Low power audio technology enables extended battery life in a wide range of portable media devices. Programmable on-chip amplifiers enable direct connection of headphones and microphones, minimising the requirements for external components.

INTEGRATED POWER MANAGEMENT FEATURES

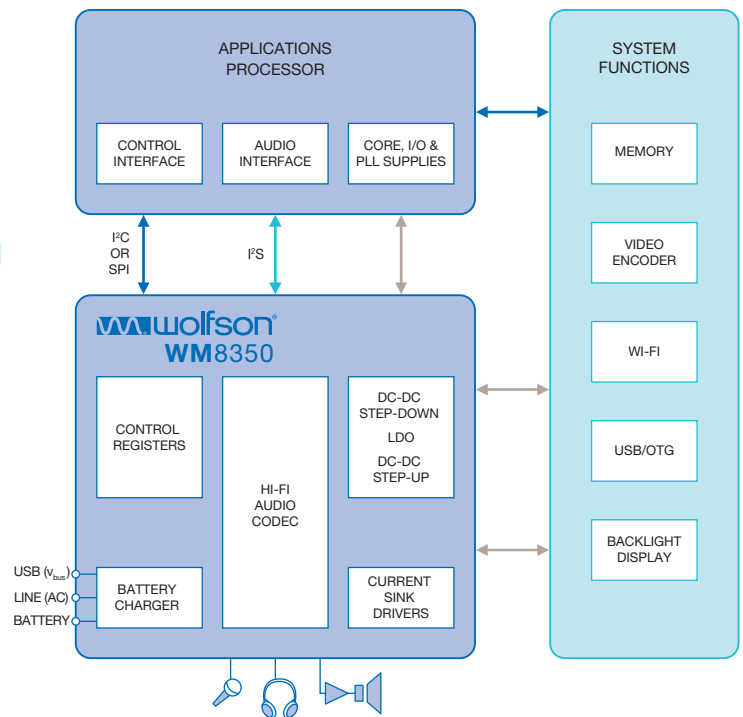
The WM8350 incorporates six DC-DC converters and four low-dropout (LDO) regulators to generate programmable supply voltages for different components of a system such as a digital core, I/O and backlight display, in addition to the integrated audio CODEC. This level of integration eliminates the need for separate power management ICs and reduces the overall component count.

INTEGRATED BATTERY CHARGER

An on-chip battery charger supports programmable charging modes for single-cell lithium batteries. The charge current, termination voltage, and charger time-out are programmable to suit different Li-Ion or Li-Pol batteries. Automatic power supply selection between Battery, USB or a Wall-Adaptor enables 'instant on' operation even if the battery is fully discharged. Autonomous battery charging is possible whenever the USB or Wall-Adaptor supply is connected.

ADVANCED SYSTEM CONTROL

Internal power management functions control the start-up and shut-down sequencing of clocks and supply voltages. The WM8350 provides protective functions in the event of under-voltage or extreme temperature conditions. It can also detect deeply discharged or defective batteries and adjust the charger parameters accordingly with a minimum of software involvement.



PRODUCT FEATURES

Stereo Hi-Fi CODEC

- DAC SNR 98dB ('A' weighted @ 48kHz), THD -84dB
- ADC SNR 95dB ('A' weighted @ 48kHz), THD -80dB
- Two on-chip headphone drivers
 - 40mW output power into 16Ω / 3.3V
- 2 differential microphone inputs with low-noise bias voltage and programmable preamps
- Programmable high-pass filter for ADC
- Microphone and headphone detection
- Auxiliary inputs for analogue signals
- Sample rates: 8, 11.025, 16, 22.05, 24, 32, 44.1 or 48kHz

System control

- Support for I²C control interface (option SPI mode)
- Handles power sequencing, reset signals and fault conditions
- Autonomous power source selection from battery, wall adaptor or USB

Supply generation

- 2 x DC-DC buck converters (0.85V to 3.4V, up to 1A)
- 2 x DC-DC buck converters (0.85V to 3.4V, up to 500mA)
- 2 x DC-DC boost converters (5V to 20V, 40mA to 175mA)
- 4 x LDO voltage regulators (0.9V to 3.3V, 150mA)

LED drivers

- 2 programmable constant-current sinks, suitable for backlight displays
- 3 open-drain outputs for RGB LEDs

Battery charger

- Single-cell Li-Pol / Li-Ion battery charger
- Programmable target voltage and charging time-out to suit different battery types
- Support fast charging in addition to autonomous trickle charging
- Thermal protection for charge control; temperature monitoring available for thermal regulation
- LED outputs to indicate charge status and fault conditions

Additional features

- 'Always on' RTC with wake-up alarm
- Watchdog timer
- Up to 13 configurable GPIO pins
- On-chip crystal oscillator and internal RC oscillator
- Low power FLL supporting wide range of input clocks
- 7x7mm, 129 BGA package, 0.5mm ball pitch

CONTACT DETAILS

www.wolfsonmicro.com

WORLD HEADQUARTERS**Wolfson Microelectronics plc**

Westfield House
26 Westfield Road
Edinburgh
EH11 2QB
United Kingdom

t: +44 (0)131 272 7000
f: +44 (0)131 272 7001
e: europe@wolfsonmicro.com

USA SALES OFFICE**Wolfson Microelectronics, Inc.**

16875 West Bernardo Drive
Suite 280
San Diego
CA 92127
USA

t: +1 (0)858 676 5090
f: +1 (0)858 676 0484
e: usa@wolfsonmicro.com

JAPAN SALES OFFICE**Wolfson Microelectronics plc**

23F Sky Building
2-19-12 Takashima
Nishi-ku
Yokohama 220-0011
Japan

t: +81 (0)45 440 1230
f: +81 (0)45 440 1231
e: japan@wolfsonmicro.com

ASIA PACIFIC SALES OFFICE**Wolfson Microelectronics plc**

2F, No.39, Alley 20
Lane 407, Sec. 2
Tiding Boulevard, NeiHu District
Taipei 114
Taiwan

t: +886 (0)2 875 11600
f: +886 (0)2 875 10201
e: asia@wolfsonmicro.com

© COPYRIGHT 2007, WOLFSON MICROELECTRONICS PLC.

wolfson and the wave logo are a registered trademark of Wolfson Microelectronics plc. All other trademarked names, whether indicated as such or not, are the property of their respective owners. The information in this document is believed to be accurate in all respects at the time of publication but is subject to change without notice. Wolfson Microelectronics plc assumes no responsibility for errors and omissions, and disclaims responsibility for any consequences resulting from the use of information contained in the document.