Power Management Chip

Freescale Semiconductor is meeting the increasing demands to power new features in today's smart mobile devices with this highly integrated power management and user interface (PMUI) chip. With this single-chip device, designers can optimize system power and drive a variety of powerful audio and multimedia features in products such as 3G phones, mobile gaming units and portable media players.

The MC13783 PMUI IC packs multiple systems into one device for design freedom and part count reduction. Consolidated coordination of numerous system level modules simplifies design and helps to drive new levels of product sophistication.

The Freescale PMUI includes a full audio system, battery charger system, lighting system, five switching regulators, 18 linear regulators, USB transceiver, carkit interface, touchscreen interface and more. Additionally, the MC13783 gives OEMs a high degree of adaptability for feature scaling across tiered product families, accelerating products to market and cutting time to market and design costs.

The highly integrated MC13783 power-management and user-interface IC features:
&#149 High fidelity stereo DAC and headphone driver are suitable for MP3 or personal media playback
&#149 White LED back light drivers for displays, keypad, flashlight and tri-color fun lights provide complete system lighting
&#149 Portable gaming to take the action everywhere via applications processor support, fun lighting, vibration driver, power audio and touchscreen capabilities
&#149 Dual processor support allows for ease and flexibility in adding mobile phone capabilities to design feature rich convergence devices. Enhanced speakerphone performance with power audio and dual CODEC paths for noise cancellation and improved voice clarity
&#149 Voice recording, audio/music playback and fun lights power smart toys such as interactive plush dolls/animals, educational toys and remote controlled devices.
&#149 Integrated real time clock and calendar function with alarm capability with ring tone playback or visual alert
&#149 Flexible processor interfacing coupled with the audio system and integrated power control can be used for voice command recognition to give vending machines and small appliances a human friendly interface.
Other advanced features of the MC13783 include: dynamic voltage scaling, multi-mode switching regulators, user off support with power interruption recovery, Li-Ion

battery charger, coin cell battery back-up and a USB OTG transceiver with CEA-936-A carkit support for transferring files, music and graphics or charging a battery through a shared mini-USB connector.

Although primarily designed for handsets, this product can be used for PDAs, digital cameras, remote-controlled devices, singly or in combination, and many other applications as well.

The MC13783 is part of a series of Freescale PMUI products offered as individual ICs or as part of total platform solutions. Platform applications include Freescale's 3G Innovative Convergence&#153 i.300-30 and Mobile eXtreme Convergence MXC300-30 as well as the MXC275-30 EDGE solution. In addition, the device is suited for Freescale's i.MX31 applications processor and is included in the i.MX31 application development system.

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