

## Product Overview

# Seagate Storage Management Module

## Hard drive compatibility software for mobile product chipsets

### Improved performance • Better power management Device drivers for fast hard-drive integration

With demand for mobile content increasing rapidly, many applications are turning to small form factor hard drives to pack more capacity into handheld devices. Many mobile chipsets are incompatible with hard drives, so development time for the appropriate drivers and optimization tools can stall a project in the fast-moving mobile device market.

Enter the Seagate® Storage Management Module (SMM)—a set of device drivers and optimization routines that solve the hard-drive compatibility issue. From the worldwide leader in hard-drive technology, the SMM Express Integration Kit helps chipset designers—and mobile system manufacturers—speed time-to-market, improve system performance and dramatically increase system battery life.

#### Features and Benefits

##### Device drivers compatible with SD and MMC controllers

- Allow express hard-drive integration for chipsets utilizing popular CE-ATA 1.1 and IDE storage controllers

##### Power management module reduces hard-drive and I/O activity.

- Delivers power savings of up to 85 percent in many operating modes
- Increase system battery life

##### Efficient onboard solid-state memory management

- Enables faster response to user commands (instant-on, play/rewind/fast forward)

##### Built-in file system

- Supports the hard drives' high capacities
- Enables richer data- and media-centric applications and search capabilities
- Optimize applications for random access performance

##### Modular development approach

- Pick and choose between modules to fit your mobile application.
- Drivers work with most hard drives; other features work exclusively with Seagate drives.

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## Best-Fit Applications

SMM delivers benefits to any mobile application integrating hard drives for increased entertainment and data storage, including:

- Mobile phone handsets
- Portable media players
- Digital video and still cameras
- Mobile digital TVs
- Portable navigation systems

## The Seagate Advantage

The mobile ecosystem is here to stay. Consumers are now in control of when, where and how they experience their entertainment, do their work, live their lives. It's the on-demand world, where consumers are connected, creative and in control.

Makers of mobile chipsets are rushing in to enable consumers in the on-demand world with application capabilities that demand plenty of capacity in small spaces. SMM, in turn, enables chipset designers to quickly adapt applications for the hard drive.

Software Component	ITRON	AMSS/REX	Linux 2.6	WinCE 5.0
CE-ATA 1.1 device drivers for SN and MMC controllers	✓	✓	✓	✓
File system (FAT32 compliant)	✓	✓		
Self test, firmware download, SMART logs	✓	✓	✓	✓
Partition manager, format manager, disk scan	✓	✓		
Power management	✓	✓	✓	✓
Integrated solid-state management	✓		✓	✓

<sup>1</sup> Mobile Spending: US Non-Voice Services, James Belcher, eMarketing.com; summary available at [www.imediaconnection.com/content/11319.asp](http://www.imediaconnection.com/content/11319.asp)

The SMM modular device driver design is built for flexibility and multiple development environments:

- The Operating Abstraction Layer (OAL) currently supports WinCE 5.0, Linux 2.6, AMSS/REX, and ITRON operating systems.
- The Interface Abstraction Layer (IAL) supports CE-ATA protocol v1.1.

Both layers can be independently scaled to include future enhancements to the CE-ATA interface and additional operating system environments. Also, SMM allows development of drive-based applications that can be ported to multiple platforms quickly.

## Full Feature Set Delivers Optimized Performance

Mere compatibility isn't enough to create a great consumer application. SMM, combined with Seagate drives, offers a comprehensive set of capabilities that save power, speed integration and help deliver a richer consumer experience.

## Enabling New Opportunities

Estimates from eMarketer.com and the Yankee Group indicate that US\$15.9 billion will be spent in the U.S. alone on non-voice services in the mobile phone industry by 2009<sup>1</sup>. This points to storage-hogging services, such as music, data, ring tones, photos and images. Other mobile media services and devices anticipate similar growth.

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