



Intel® Wireless Flash Memory (W18/W30)

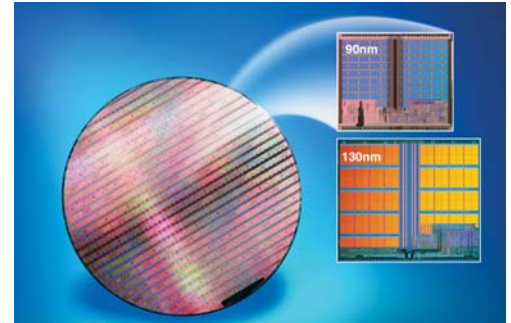
The highest performance solution for wireless applications.

Intel® Wireless Flash memory (W18/W30) is the highest performance solution for wireless applications. It combines four major innovations into one product:

- Flexible partition Read-While-Write/Erase (RWW/E) operation
- Synchronous burst and asynchronous page mode read operations
- 1.8 V operations (3.0 V I/O option available)
- Enhanced Factory Programming (EFP)

Intel Wireless Flash memory is now available on industry-leading 90 nanometer process lithography, as well as existing 180nm and 130nm. Intel Wireless Flash memory integrates flexible partition RWW/E architecture with synchronous burst and asynchronous page mode read operations, the security-enabling features of Intel® Advanced+ Boot Block (C3), and low 1.8 V operation. In addition, the W18/W30 is fully supported by the Intel® Flash Data Integrator (Intel® FDI) software, which enables management of code, data, and files in flash memory.

These features, in combination with EFP, make this the ideal RWW/E flash memory solution for next-generation “voice plus data” cellular and wireless applications.



Intel® Wireless Flash Memory 64Mb Die Comparison: 90nm vs. 130nm

Product Highlights

- Multi-partition architecture allows system processor to read from one partition while completing a write/erase in the other partition.
- High performance at 1.8 V
 - Burst mode: supports up to 66 MHz, with 11 ns subsequent accesses
 - Page mode: 60 ns first access, 20 ns subsequent accesses
- Full 1.8 V operation. Allows RWW/E from 1.65 V to 1.95 V (EIA/JEDEC 1.8 V standard).
- Intel 1.8 V Wireless Flash memory enables code execution and data storage in a single flash memory device.
- Also available with 3 V I/O, for 3-Volt applications (W30).
- Packaging
 - 0.75-mm pitch CSP (7x8 ball matrix)
 - 0.8-mm pitch Stacked-CSP (8x10 ball matrix)
- Burst and page mode interface.
- Now on 90nm ETOX™ IX process technology.
- Synchronous burst reads and asynchronous page reads. Fast code execution up to 66 MHz with zero wait-states.

Read-While-Write/Erase Operation

Next-generation cellular and wireless applications are incorporating more data features such as Internet browsing, data streaming, and text messaging. These types of system requirements are much more data intensive and require the higher throughput rates that are achieved with a RWW/E flash memory device.

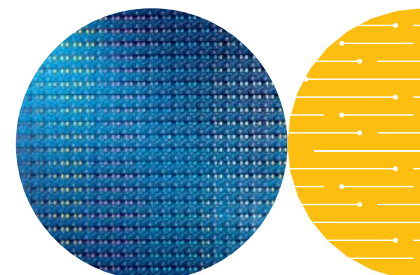
Flexible-partition operation allows the processor to execute out of one partition and simultaneously write or erase in another partition. This feature improves the speed that information can be stored and accessed in the flash memory by up to 40 percent.

Full 1.8 V Operation

Full 1.8 V operation allows the Intel® Wireless Flash memory device to read, write, and erase over the entire 1.8 V EIA/JEDEC voltage range. The 1.8 V low-voltage operation supports 1.8 V logic, which



64Mb Die Comparison Across Lithographies



produces energy savings of up to 60 percent. These energy savings result in reduced power consumption, extending the battery life.

Intel 1.8 Volt Wireless Flash is also available with a 3-Volt I/O, making it the complete solution for both 1.8- and 3-Volt applications.

Burst and Page Modes

The synchronous burst mode and asynchronous page mode read operations accelerate cell phone memory subsystems to the next level of performance. Memory bottlenecks are removed by accessing the flash memory contents with asynchronous page and synchronous burst reads. These fast reads allow for direct execution with zero wait-states up to 66 MHz in 1.8 V systems.

Multiple Densities and Packages

Intel 1.8 Volt Wireless Flash is available in 32-, 64-, and 128-Mb densities to accommodate a variety of needs and support growth for the future. It is also available in both discrete and Intel® Stacked-CSP packages, making it a complete solution for wireless applications.

Enhanced Factory Programming

EFP provides the fastest Flash memory manufacturing programming in the industry. Easy to implement, it uses a new programming algorithm that doubles programming throughput, reducing costs substantially.

Features

Benefits

Flexible multi-partition architecture	<ul style="list-style-type: none"> 4-Mb partitions allow for changing code and data requirements Higher data throughput for more data-intensive cellular/wireless handset applications Execute code and write or erase data simultaneously
Low voltage 1.8 V —1.65 V to 1.95 V JEDEC standard	<ul style="list-style-type: none"> Ideal for next-generation cellular/wireless handsets running on a battery <ul style="list-style-type: none"> Low power allows for smaller batteries Smaller batteries allow smaller handsets Longer talk times and longer standby times Longer time between battery recharges
Burst and page mode interface	<ul style="list-style-type: none"> Fast code execution <ul style="list-style-type: none"> Removes memory bottlenecks Supports higher performance burst processors Up to 66 MHz with zero wait-states
Intel® FDI software support —Packetized data support —Burst and page mode support	<ul style="list-style-type: none"> Manage code execution and data maintenance in one device

Support Collateral and Tools

Item	Description	Order Number
Application Note	AP-738 Reduce Manufacturing Costs with Intel® Flash Memory Enhanced Factory Programming	292286
Data Sheets	Intel® Wireless Flash Memory (W18) Intel® Wireless Flash Memory (W30)	290701 290702
Product Briefs	Intel® Flash Data Integrator Chip Scale Packaging (CSP) for Intel® Flash Memory Devices	297826 298113
User's Guide	Intel® Flash Data Integrator Intel® Flash Memory Chip Scale Packaging	297833 298161

Intel Access

Developer Web Site	http://developer.intel.com
Intel® Flash Memory Home Page	http://developer.intel.com/design/flash
Intel® Flash Software	http://www.intel.com/go/FlashSW
Intel Literature Center	http://developer.intel.com/design/litcentr (800) 548-4725 7am - 7pm CST (USA and Canada)
General Information Hotline	International locations please contact your local sales office (800) 628-8686 or (916) 356-3104 5am - 5pm PST

For more information, visit the Intel Web site at: developer.intel.com

UNITED STATES AND CANADA

Intel Corporation
Robert Noyce Bldg.
2200 Mission College Blvd.
P.O. Box 58119
Santa Clara, CA 95052-8119
USA

EUROPE

Intel Corporation (UK) Ltd.
Pipers Way
Swindon
Wiltshire SN3 1RJ
UK

ASIA-PACIFIC

Intel Semiconductor Ltd.
32/F Two Pacific Place
88 Queensway, Central
Hong Kong, SAR

JAPAN

Intel Japan (Tsukuba HQ)
5-6
Tokodai Tsukuba-shi
300-2635 Ibaraki-ken
Japan

SOUTH AMERICA

Intel Semicondutores do Brasil LTDA
Av. Dr. Churri Zaidan, 940-10° andar
04583-904 São Paulo, SP
Brazil

Intel may make changes to specifications and product descriptions at any time, without notice.

*Other names and brands may be claimed as the property of others.

Intel and the Intel logo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Information in this document is provided in connection with Intel® products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life-saving, or life-sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice.

Copyright © 2004 Intel Corporation. All rights reserved. 0104/MS/LK/2K

Please Recycle

298256-006

