

# FlashFX Pro™ 3.0

## High Performance Flash Manager for Rapid Development of Reliable Products

FlashFX Pro is a high performance, multi-threaded flash media manager for devices using resident flash memory for mass storage. In addition to standard flash media manager features such as bad block management, wear-leveling, and preserving data, FlashFX Pro uniquely supports an extensive library of innovative flash technologies, speeding integration and time-to-market for device manufacturers.

### High Performance

Many devices, ranging from consumer electronics to medical devices, support streaming video or audio applications and information must be read from non-volatile storage without delays. Because of its multi-threaded design, FlashFX Pro is able to offer low read latency in multimedia and other applications. FlashFX Pro also supports common NAND Controllers, which can increase overall device performance through hardware error corrections, flash power management, and data caching.

### KEY BENEFITS OF FLASHFX PRO

- Fault-tolerance even during unexpected power failures
- Patented bad block management and wear-leveling reduces warranty costs and user complaints
- Multi-threaded architecture and support for NAND Controllers enhances device performance
- Reduces time-to-market with drivers for over 100 state-of-the-art NOR and NAND flash parts
- Ensures accurate data management with support for multiple block sizes and multiple partitions

### Highly Reliable

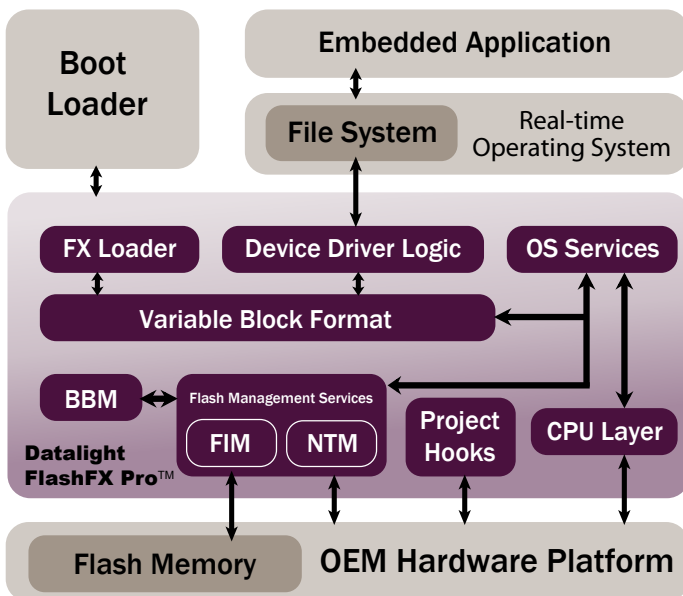
FlashFX Pro ensures data integrity by keeping data intact at the block device driver level even during a system crash or a power interruption. With its patented bad block management for NAND, FlashFX Pro audits flash sectors for memory region failures and provides insurance that data is only written to usable areas of the flash. Unlike other industry wear-leveling solutions, FlashFX Pro keeps explicit track of the erase counts, resulting in longer flash life and lower warranty costs.

### Seamless Hardware Integration

FlashFX Pro includes Flash Interface Modules (FIMs) in the source code, which interface to different flash vendor hardware. These pre-written FIMs allow the integration of a new flash part into the design to be a seamless effort. Over 100 state-of-the-art NAND and NOR parts are supported with the FIMs that are included in FlashFX Pro. Supported flash vendors include AMD, Fujitsu, Intel, NEC, SanDisk, Samsung, Spansion, ST Microelectronics, and Toshiba. FlashFX Pro also includes NAND Technology Modules (NTMs) to integrate performance-enhancing features that are available from common NAND Controllers. NTMs for select Texas Instruments (OMAP) and Freescale boards are included with FlashFX Pro.

### Operating System Support

Datalight provides versions of FlashFX Pro for Wind River VxWorks, Mentor Graphics Nucleus Plus, Microsoft WinCE, and Express Logic ThreadX. An RTOS porting kit is also available which allows developers to port FlashFX Pro to any 32-bit OS.



## FEATURES & BENEFITS

### RELIABILITY

- Guaranteed atomic sector writes; sectors are either fully written or not touched if a power interruption occurs

### HIGH PERFORMANCE

- Hardware ECCs and 2KB page operations can be enabled with support for common NAND Controllers
- Multi-threaded architecture enables real-time applications

### LOWER WARRANTY COSTS

- Wear-leveling, garbage collection, and patented bad block management extends flash life

### DESIGN FLEXIBILITY

- Use varying types of flash (NAND, NOR, and MLC NOR i.e. “Sibley”) in the device
- Custom configure multiple partitions to separate data types

### FASTER TIME-TO-MARKET

- Pre-written Flash Interface Modules (FIM) and NAND Technology Modules (NTM) for over 100 state-of-the-art flash parts
- Drop-in support is available for Wind River VxWorks, Mentor Graphics Nucleus PLUS, Windows CE, and Express Logic ThreadX; an RTOS porting kit is available for the 32-bit OS of your choice

Target System Configuration	32-bit OS, any CPU, NAND or NOR flash memory, 70 KB RAM (typical)
Development System Hardware	Windows 32 host; 4MB of disk space for FlashFX Pro; sufficient RAM for development tools
In-System Memory Space	40KB to 70KB (tunable, based on disk partition configuration)
Media volume size	Each partition (or disk) can be scaled from 64 KB to 2 GB. The number of disks (and devices per disk) are configurable
Block size	READ: 1.05 MB/s; WRITE: 1.47 MB/s; ERASE: 54.82 MB/s

*\*additional restrictions may exist due to target operating system*

## Software Development Kit (SDK)

The FlashFX Pro SDK includes the ANSI C source for FlashFX Pro, a Developer’s Guide, a FlashFX Pro API Reference Manual, and tools. The Development Guide details how to load, initialize, and use FlashFX Pro with any file system, such as FAT or Datalight Reliance. Custom tools include utilities to format flash memory, check for bad blocks, read and write disk images, force remounts and garbage collection, and read flash disk information. Developers can customize FlashFX Pro for any CPU and development environment.

## Support and Licensing

Datalight’s Technical Support is well-known in the embedded industry. Our technical support team has a strong commitment to making your devices work reliably, from evaluation to implementation. With a hard-earned reputation for great customer service, Datalight regularly goes “above and beyond” to make sure no need is overlooked. Two types of support and maintenance contracts are available; an annual maintenance update and support contract, or a premium support contract that includes in-depth consulting.

## FREE 30 Day Evaluation

Evaluation software allows developers to create a flash disk up to 2 MB in size to evaluate FlashFX Pro performance and reliability. A Datalight license agreement is required.

## About Datalight

Datalight is the market leader in software technologies that manage data in embedded devices; increasing reliability, flexibility, and performance in our customers’ devices. For over 23 years, Datalight’s focus on portable, flexible solutions has enabled OEMs including Canon, Intel and Symbol to save money, reduce development time and get to market faster. These accomplishments have earned Datalight a reputation as a provider of reliable and cost effective software solutions that are backed by a commitment to customer service and satisfaction.



*Software for Trustworthy Data on Successful Devices*