

## Advanced FAT File System for Multimedia Applications

### Product Overview

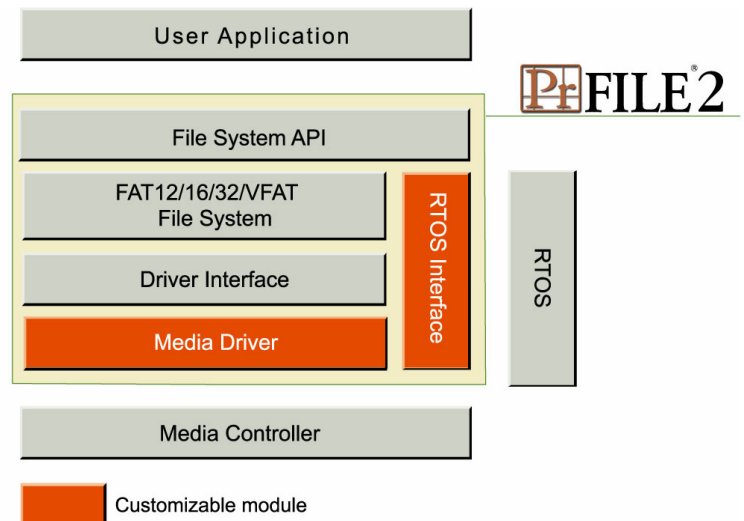
PrFILE<sup>®</sup>2 is a Windows-compatible FAT file system that is ideal for use in multimedia devices. PrFILE2 supports using multiple file storage media, and is designed to be flexible and easy to use on multiple platforms.

### Descriptions

- PrFILE2 can operate stand-alone, with a multitasking RTOS such as PrKERNEL<sup>®</sup>v4 and eT-Kernel, or with any proprietary or commercial RTOS. Thus it can be used directly with an application or in conjunction with a multitasking system.
- PrFILE2 is designed to make integration with your target application easy. PrFILE2 has a modular and scalable layered architecture that minimizes the time required for porting and creating new device drivers.
- PrFILE2 has added new APIs to enhance performance, to make writing multimedia files easier, and to make driver development easier.

### Key Features

- ❑ Small footprint
- ❑ Supports FAT12/16/32
- ❑ Supports long filenames (VFAT) and international character sets (Kanji, Simplified Chinese, Traditional Chinese, and European languages) and also Thai, Korean, Cyrillic alphabet, and Arabic
- ❑ Supports ANSI C file I/O interface
- ❑ APIs for high performance: fast file find, fast device information, and cache control
- ❑ APIs for manipulating multimedia files (i.e. MPEG)
- ❑ Includes sample drivers for RAM disk, psuedo disk and CompactFlash (on selected platforms)
- ❑ Completely ROMable
- ❑ Ready-to-use with PrKERNELv4 and eT-Kernel multitasking kernels
- ❑ User configurable
- ❑ Processor and RTOS independent
- ❑ Complete source code provided
- ❑ Power failure and media removal safety
- ❑ Multiple drives support
- ❑ FAT and data caching support
- ❑ Support to access multiple files in multitasking environments
- ❑ POSIX-like file access APIs
- ❑ UNICODE support version (available as an add-on option)



### Compatibility

PrFILE2 supports the same ANSI C user interface and functionality across all processors. Application developers can take standard C code developed for one processor, recompile it, and move to another processor with minimal effort.

### Applications

The PrFILE2 embedded file system interfaces with cellular phones, PDAs, MP3 players, digital cameras, digital camcorders, game consoles, printers, multimedia projectors, scanners, set top boxes, and more.

## Optional Products

Due to its modular architecture, PrFILE2 is simple enough to adapt to new media types and file formats. To shorten time-to-market as well as development time, eSOL has designed file system add-ons from scratch for specific embedded environments.

These Include:

- ❑ **Unicode Support:** Standard PrFILE2 APIs use UNICODE character sets instead of local character sets (code pages) such as SJIS etc., in order to support international characters.
- ❑ **SD Card Driver:** Ready-to-use device driver for Secure Digital (SD) and Secure Digital High Capacity (SDHC) memory cards. Covers all SDHC Speed Class ratings.
- ❑ **MemoryStick Driver:** Includes MemoryStick device driver and Memory Stick Access Library. Support for MemoryStick Pro and Duo is included.
- ❑ **NAND Flash Translation Layer:** Provides sector translation, bad block management, and wear-leveling for Samsung NAND devices.
- ❑ **File Utility:** A scandisk utility provides the capability for ensuring the file system integrity in case of power interruption.

## Fast Performance

PrFILE2 introduces minimum overhead when reading/writing data.

### Performance Information

*Secure Digital Card Throughput*

1 MB Buffer	Read (KB/s)	Write (KB/s)
TMS320DM6446	11440	5594

## Compatible Products

- **eBinder<sup>®</sup>:** Integrated development environment
- **PrKERNEL<sup>®</sup> v4:** Compact realtime multitasking kernel
- **eT-Kernel:** T-Kernel-based realtime multitasking kernel
- **PrUSB<sup>®</sup>/Device:** USB device driver
- **PrUSB<sup>®</sup>/Host:** USB host driver

## Licensing

Royalty-free, source code license.  
OEM license is also available.

## PrFILE2 Application Programming Interface

_create	Create a file
fopen	Open a file
fclose	Close a file
fread	Read file data
fwrite	Write file data
fseek	Move file position indicator
fsfirst	Search for first matching file
fsnext	Search for next matching file
remove	Delete a file
rename	Change a file name
_move	Move a file or directory
_mkdir	Create a directory
_rmdir	Delete a directory
_chdir	Change current directory
_fstat	Acquire file information
_chmod	Change file attribute
_chmod	Change directory attribute
_fappend	Append clusters to end of file
_fadjust	Delete unused clusters at end of file
_finfo	Get file information (for _fappend and _fadjust)
_fsexec	Fast remove of file or directory, or change of file or directory attributes
_combine	Combine two files at cluster boundary
_divide	Divide a file into two files at cluster boundary
_cinsert	Insert unused cluster into a file
_cdelete	Delete cluster from file
_attach	Allocate a drive
_detach	Release a drive
_mount	Mount a drive
_unmount	Unmount a drive
_format	Format a drive
_buffering	Configure data buffer write mode
_sync	Write all cached data to media
_fsync	Write all cached data for specified file to media
_setclstlink	Set cluster link to a volume
_fsetclstlink	Set cluster link to a file
ferror	Get file access error
feof	Test for end of file
_errno	Get error code
_derrnum	Get last driver error for volume
_getdev	Get device capacity
_setupfsi	Set use of/update FSINFO (for fast _getdev)
_setvol	Set volume label
_getvol	Get volume label
_rmvvol	Delete volume label
_settailbuf	Set buffer size used to create short file name with tail number (~number)

eSOL Co., Ltd.

Japan Headquarters

Embedded Products Division

Harmony Tower, 1-32-2 Honcho

Nakano-ku, Tokyo 164-9721, Japan

Tel: +81 3-5302-1360 Fax: +81 3-5302-1361

ep-info@esol.co.jp