



# Toshiba 512E Manual

Toshiba computer drive user manual



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# A Guide to the Optimal Performance of Advanced Format 512e Hard Drives from Toshiba

Properly configured Advanced Format (AF) 512e hard drives 512 byte-per-sector drive models. However, some computer operating systems (OSs) and application programs expect to operate with 512 byte sector disk drives. To provide compatibility in such cases AF 512e drives automatically convert 512-byte data blocks from the host and store them in a 4K block on the AF 512e drive. However, for optimal performance it is important to have proper partition boundary alignment between logical 512 byte data and the

physical 4K sectors of the AF drive. Otherwise, the misalignment increases the time required to complete the 512 byte emulation writes to the disk which may result in a noticeable impact on system performance. The Table below outlines which OSs are designed to establish proper 4K partition alignment for AF 512e drives and which can benefit from the assistance of an alignment utility for AF 512e drives. To provide the best possible user experience, Toshiba offers the Paragon Alignment Tool for Toshiba AF 512e Drives as a free download at [www.toshibastorage.com/alignment](http://www.toshibastorage.com/alignment). The Paragon Alignment Tool for Toshiba AF 512e Drives (PAT) has been specially optimized for Toshiba AF 512e hard drives. The PAT utility generally needs to be run once during the lifetime of the PC. However, should the OS or hard drive be changed, or if additional partitions are created on the hard drive, or if applications are used that bypass the OS when writing to the disk then it may be beneficial to rerun the PAT utility to help maximize system, application and drive performance.

**Table - Operating Systems and Paragon Alignment Tool Usage Recommendations**  
**Operating System**

Microsoft® Windows 7 Family (32- or 64-bit) - factory installed  
 Microsoft Windows 7 Family (32- or 64-bit) - non-factory installed  
 Microsoft Windows Vista® Family (32- or 64-bit) - factory installed  
 Microsoft Windows Vista® Family (32- or 64-bit) - non-factory installed  
 Microsoft Windows XP Family (32- or 64-bit)  
 Microsoft Windows 2003 Family  
 Microsoft Windows Home Server  
 Microsoft Windows Server 2008  
 Microsoft Windows Server 2008 R2

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Microsoft Windows Server 2008	
Microsoft Windows Server 2008 R2	
Other Microsoft Windows OSs not listed above	
NOTE: PAT may not be suitable for Toshiba AF 512e drive alignment activities involving multiple client systems or disk image cloning (see PAT FAQ for more detail).	
NOTE: When encrypting the contents of an entire hard drive or individual partitions, the creation and alignment of partitions should be performed prior to deploying an encryption solution. There is a risk of data loss if PAT is used to align encrypted partitions	
<sup>1</sup> Generation One AF 512e drives are denoted in Toshiba literature as "4096/512e"	
*Periodic usage of the Paragon Alignment Tool for Toshiba AF 512e Drives (PAT) on systems where software and/or computer programs may issue misaligned, non-buffered writes to the hard drive may improve the speed at which data is written by these applications. Once encryption of a hard drive or individual partitions has been performed, periodic use of PAT is not recommended due to the risk of data loss.	
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may deliver superior performance as compared to legacy  
PAT Usage Guidelines for Toshiba AF 512e Drives

Not necessary\*

Recommended in case of upgrade to Microsoft Windows 7 from Windows  
XP family.\*

Recommended when installing Windows to partitions pre-created with 4K-  
unaware third-party application (i.e. if not creating partitions using Windows  
7 distributive DVD).\*

Not necessary\*

Recommended in case of upgrade to Microsoft Windows Vista® from  
Windows XP family.\*

Recommended when installing Windows to partitions pre-created with 4K-  
unaware third-party application (i.e. if not creating partitions using Windows  
Vista distributive DVD).\*

Recommended\*

Recommended\*

Recommended\*

Not necessary\*

Not necessary\*

Upgrading to an OS listed in this table is recommended if using AF drives

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## Related Manuals for Toshiba 512E

### [Software Toshiba AF 512E Manuallines](#)

For af 512e drives (2 pages)

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Toshiba computer drive user manual (17 pages)

### [Storage Toshiba 593209-D0 Limited Warranty](#)

Usb 2.0 portable hard drive (20 pages)

### [Storage Toshiba Canvio 1TB Specifications](#)

Portable hard drive (2 pages)

### [Storage Toshiba Canvio 640GB Specifications](#)

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### [Storage Toshiba CANVIO ADVANCE User Manual](#)

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### [Storage Toshiba MK5002MPL User Manual](#)

1.8-inch hard disk drive (9 pages)

### [Storage Toshiba HDTB420EK3AA User Manual](#)

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### [Storage Toshiba CANVIO BASICS User Manual](#)

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[Storage Toshiba GR200 Series Instruction Manual](#)

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7200 rpm dt01aca series hard disk drive (2 pages)

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(5 pages)

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