x.xx Flush Cache Document# D96106R0

COMMAND CODE - E7h

TYPE - The command and each subcommand is optional

PROTOCOL - Non-Data

INPUTS - The Feature register contains a subcommand code as described in Table x.x.

Register	7	8	5	4	3	2	1	0
Features	Subcommand code							
Sector Count								
Sector Number								
Cylinder Low								
Cylinder High								
Device/Head	1		1	D				
Command	E7h							

NORMAL OUTPUTS - None required.

ERROR OUTPUTS - If the command or a subcommand is not supported, the device posts an Aborted Command error. An unrecoverable error encountered during execution of writing results in the termination of the command and the Command Block registers contain the sector address of the sector where the first unrecoverable error occurred.

Status Register				Error Register					
DRDY	DF	CORR	ERR	BBK	UNC	IDNF	ABRT	Tk0NF	AMNF
V	V		V				V		

PREREQUISITES - DRDY set (1)

DESCRIPTION - This command is used by the host to request the device to empty and/or disable its write or read caches. If the write caches are to be flushed, all data cached will be written to the media. If the read caches are to be flushed, the data in the cache is invalidated. The Features register contains a subcommand which defines the operation to be performed. Refer to the subcommand definitions in Table x.x for specific details of each subcommand.

Upon receipt of the command, the device will set BSY and begin execution. If the write caches are to be flushed, all data in all write caches will be written to the media. The BSY bit shall remain set until all data has been successfully written or

an error occurs. The device should use all error recovery methods available to ensure the data is written successfully. This includes the automatic relocation of bad sectors, provided it is enabled. It should be noted the flushing of write caches may take several seconds to complete depending upon the amount of data to be flushed and the success of the operation. The host should allow for the maximum execution time.

If the read caches are to be flushed, the device invalidates the data in all read caches and clears BSY.

Table x.x - Subcommand definitions of Flush Cache command

Value	Function
00h	Flush all caches and prepare for shutdown.
01h	Flush all write caches.
02h	Flush all write caches and disable further write caching.
03h	Invalidate all read caches.
04h	Invalidate all read caches and disable further read caching.
Note: All values not shown are reserved for future definition.	

x.xx.1 Prepare for shutdown

Subcommand code 00h instructs the device to prepare for power removal. The device should write to the media all data which has been cached for writing and any additional parameters or data which must be saved prior to power being removed from the device.

Once the caches have been flushed they will be disabled to prevent further caching of data until power is removed. The caches will remain disabled until either re-enabled again by the host, or the device receives a hard or soft reset, or power is removed and reapplied.

x.xx.2 Flush write caches

Subcommand code 01h instructs the device to write to the media all data which has been cached for writing. After all data has been written, write caching will continue if enabled.

x.xx.3 Flush write caches and disable

Subcommand code 02h instructs the device to write to the media all data which has been cached for writing. After all data has been written, no further write data will be cached until either write caching is re-enabled by the host, or the device receives a hard or soft reset, or power is removed and reapplied.

x.xx.4 Flush read caches

Subcommand code 03h instructs the device to invalidate all read data which has been cached If read caching is enabled, the cache will be remain invalid until the host issues another read command.

x.xx.5 Flush read caches and disable

Subcommand code 04h instructs the device to invalidate all read data which has been cached and disable further caching of read data. Read caching will remain disabled until either it is re-enabled by the host, or the device receives a hard or soft reset, or power is removed and reapplied.