68 Series SATAIII M.2 2280 SSD Datasheet

PN:

TMS68064GS380Tx-00N0

TMS68128GS380Tx-00N0

TMS68256GS380Tx-00N0

TMS68512GS380Tx-00N0

TMS68001TS380Tx-00N0

Key Features

Capacity

- 64GB/128GB/256GB/512GB/1TB

Form Factor

- M.2 2280

Specification Compatibility

- Serial ATA 6.0Gbps interface
- Complies with ATA/ATAPI-7

Features

- 3D TLC Flash
- Power Shield Function
- PCB Gold Finger 30u"
- Global Wear-leveling Function
- Read Retry & Deep Read Retry Function
- Bad Block Remap Function
- LDPC ECC(Error Correction Code) Function
- TRIM Command Function
- Garbage Collection Function
- Dynamic Scan Function
- S.M.A.R.T.Function
- Dynamic Thermal Throttling (Default)
- DEVSLP mode (Optional)
- Secure Erase
- Enhance secure Erase
- External temperature sensor

Temperature

- Operating:
  A68M8: -40°C to +85°C
  K68M8: -25°C to +85°C
  T68M8: -20°C to +75°C
  S68M8: -10°C to +85°C
- Non-operating: -55°C to +95°C

Performance

64GB
- Read: Up to 400MB/s
- Write: Up to 400MB/s

128GB
- Read: Up to 550MB/s
- Write: Up to 500MB/s

256GB
- Read: Up to 550MB/s
- Write: Up to 500MB/s

512GB
- Read: Up to 550MB/s
- Write: Up to 500MB/s

1TB
- Read: Up to 550MB/s
- Write: Up to 500MB/s

TBW

- 64GB: 192TB
- 128GB: 384TB
- 256GB: 768TB
- 512GB: 1536TB
- 1TB: 3000TB

* (1.WAF=1)

Power Consumption

- Active read: 760mW(512GB)
- Active write: 810mW(512GB)

Shock & Vibration

- Shock: 1,500G, duration 0.5ms, Half Sine Wave
- Vibration: 10~2,000Hz, 20G

* Applicable only for cased product

MTBF

- 3,000,000 hours

Weight

- Max. 8g

Contents

Key Features 2
Contents 3
Figures 4
Tables 4
1. Introduction 5
  1.1 General Description 5
  1.2 Product Line-up 5
  1.3 Functional Block Diagram 5
2. Mechanical Specifications 7
3. Electrical Interface Specifications 8
4. Identity Device Data 10
5. Contact Information 21
Revision History 22

Figures

Figure 1 Functional Block Diagram 6
Figure 2 Physical Dimension 7

Tables

Table 1 Product Line-up 5
Table 2 Physical Dimensions and Weight 7
Table 3 M.2 2280 Connector Pin Assignments 8
Table 4 Identity Device Data 10

1. Introduction

1.1 General Description

This document describes the specifications of 68 Series M.2 2280 SSD.

The SSD uses NAND Flash Memory, provides high reliability in a small form factor, and supports the SATA6.0Gbps interface standard.

The SSD delivers excellent performance. It comes in different capacities: 64GB, 128GB, 256GB, 512GB, and 1TB. The sequential performance is up to 550MB/s for read operation and 500MB/s for write operation, and the random performance is up to 95k IOPS for read operation and 65k IOPS for write operation.

1.2 Product Line-up

Table 1-1 Product Line-up A68M8

Type	Capacity	Model	Part Number
SATA3 M.2 2280 SSD	64GB	TIMAR A68M8 64GB SSD	TMS68064GS380TW-00N0
SATA3 M.2 2280 SSD	128GB	TIMAR A68M8 128GB SSD	TMS68128GS380TW-00N0
SATA3 M.2 2280 SSD	256GB	TIMAR A68M8 256GB SSD	TMS68256GS380TW-00N0
SATA3 M.2 2280 SSD	512GB	TIMAR A68M8 512GB SSD	TMS68512GS380TW-00N0
SATA3 M.2 2280 SSD	1TB	TIMAR A68M8 1TB SSD	TMS68001TS380TW-00N0

Table 1-2 Product Line-up K68M8

Type	Capacity	Model	Part Number
SATA3 M.2 2280 SSD	64GB	TIMAR K68M8 64GB SSD	TMS68064GS380TM-00N0
SATA3 M.2 2280 SSD	128GB	TIMAR K68M8 128GB SSD	TMS68128GS380TM-00N0
SATA3 M.2 2280 SSD	256GB	TIMAR K68M8 256GB SSD	TMS68256GS380TM-00N0
SATA3 M.2 2280 SSD	512GB	TIMAR K68M8 512GB SSD	TMS68512GS380TM-00N0
SATA3 M.2 2280 SSD	1TB	TIMAR K68M8 1TB SSD	TMS68001TS380TM-00N0

Table 1-3 Product Line-up T68M8

Type	Capacity	Model	Part Number
SATA3 M.2 2280 SSD	64GB	TIMAR T68M8 64GB SSD	TMS68064GS380TT-00N0
SATA3 M.2 2280 SSD	128GB	TIMAR T68M8 128GB SSD	TMS68128GS380TT-00N0
SATA3 M.2 2280 SSD	256GB	TIMAR T68M8 256GB SSD	TMS68256GS380TT-00N0
SATA3 M.2 2280 SSD	512GB	TIMAR T68M8 512GB SSD	TMS68512GS380TT-00N0
SATA3 M.2 2280 SSD	1TB	TIMAR T68M8 1TB SSD	TMS68001TS380TT-00N0

Table 1-4 Product Line-up S68M8

Type	Capacity	Model	Part Number
SATA3 M.2 2280 SSD	64GB	TIMAR S68M8 64GB SSD	TMS68064GS380TS-00N0
SATA3 M.2 2280 SSD	128GB	TIMAR S68M8 128GB SSD	TMS68128GS380TS-00N0
SATA3 M.2 2280 SSD	256GB	TIMAR S68M8 256GB SSD	TMS68256GS380TS-00N0
SATA3 M.2 2280 SSD	512GB	TIMAR S68M8 512GB SSD	TMS68512GS380TS-00N0
SATA3 M.2 2280 SSD	1TB	TIMAR S68M8 1TB SSD	TMS68001TS380TS-00N0

1.3 Functional Block Diagram

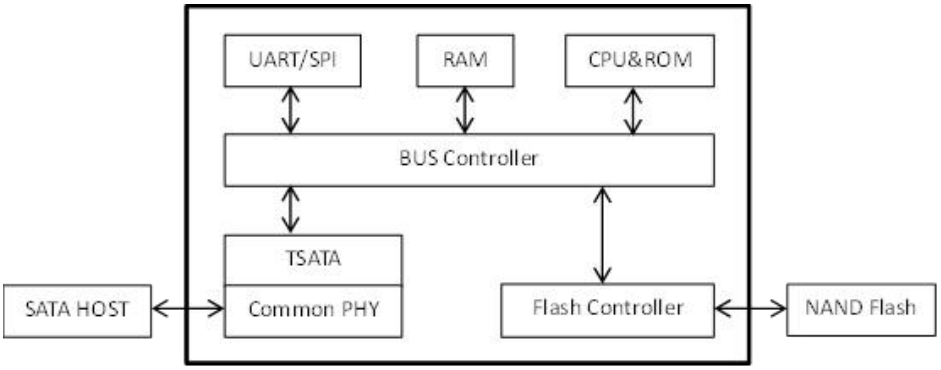
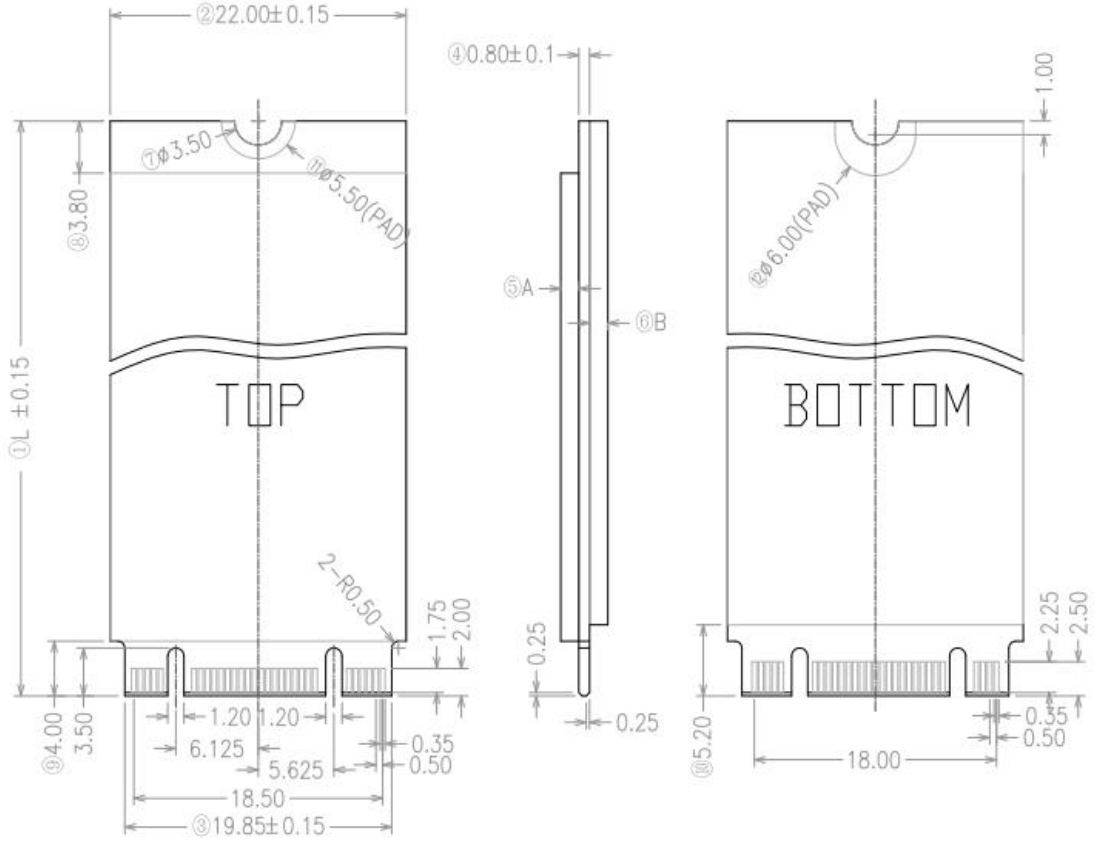


Figure 1 Functional Block Diagram

2. Mechanical Specifications

Table 2 Physical Dimensions and Weight

Capacity	Height (mm)	Width (mm)	Length (mm)	Weight (gram)
64GB/128GB/256GB/512GB/1TB	Max 3.6	22.00±0.15	80.00±0.15	8



L(mm)	A (mm)	B (mm)
80	1.35 MAX	1.35 MAX

Figure 2 Physical Dimension

3. Electrical Interface Specifications

Table 3 M.2 2280 Connector Pin Assignments

Pin #	Type	Description	Pin #	Type	Description
1	GND	Ground	2	3.3V	3.3V source
3	GND	Ground	4	3.3V	3.3V source
5	N/C	N/C	6	N/C	N/C
7	N/C	N/C	8	N/C	N/C
9	N/C	N/C	10	DAS	Device Activity Signal
11	N/C	N/C	12	N/C	Mechanical notch
13	N/C	Mechanical notch	14	N/C	Mechanical notch
15	N/C	Mechanical notch	16	N/C	Mechanical notch
17	N/C	Mechanical notch	18	N/C	Mechanical notch
19	N/C	Mechanical notch	20	N/C	N/C
21	GND	Ground	22	N/C	N/C
23	N/C	N/C	24	N/C	N/C
25	N/C	N/C	26	N/C	N/C
27	GND	Ground	28	N/C	N/C
29	N/C	N/C	30	N/C	N/C
31	N/C	N/C	32	N/C	N/C
33	GND	Ground	34	N/C	N/C
35	N/C	N/C	36	N/C	N/C
37	N/C	N/C	38	DEVSLP	Device Sleep Mode
39	GND	Ground	40	N/C	N/C
41	B+	SATA TX based on SSD	42	N/C	N/C
43	B-		44	N/C	N/C
45	GND	Ground	46	N/C	N/C
47	A-	SATA RX based on SSD	48	N/C	N/C
49	A+		50	N/C	N/C
51	GND	Ground	52	N/C	N/C
53	N/C	N/C	54	N/C	N/C
55	N/C	N/C	56	N/C	N/C
57	GND	Ground	58	N/C	N/C
59	N/C	Mechanical notch	60	N/C	Mechanical notch
61	N/C	Mechanical notch	62	N/C	Mechanical notch
63	N/C	Mechanical notch	64	N/C	Mechanical notch
65	N/C	Mechanical notch	66	N/C	Mechanical notch
67	N/C	N/C	68	N/C	N/C
69	GND	Ground	70	3.3V	3.3V source

Pin #	Type	Description	Pin #	Type	Description
71	GND	Ground	72	3.3V	3.3V source
73	GND	Ground	74	3.3V	3.3V source
75	GND	Ground			

4. Identity Device Data

The Identify Device command enables the host to receive parameter information from the SSD. This command has the same protocol as the Read Sector(s) command. The parameter words in the buffer have the arrangement and meanings defined in the following table.

Table 4 Identity Device Data

Wrd	Default Value	Description
0	0040h	General configuration 15 0=ATA device 14:8 Retired 7:6 Obsolete 5:3 Retired 2 Response incomplete 1 Retired 0 Reserved
1	XXXXh	Obsolete
2	C837h	Specific configuration
3	XXXXh	Obsolete
4 - 5	00000000h	Retired
6	XXXXh	Obsolete
7 - 8	00000000h	Reserved for the CompactFlash Association
9	0000h	Retired
10 - 19	XXXXXXXXXXXXX	Serial number
20 - 21	A55374A2	Retired
22	XXXXh	Obsolete
23 - 26	XXXXXXXXXXXXX	Firmware revision
27 - 46	XXXXXXXXXXXXX	Model number
47	8001h	Capabilities 15:8 80h 7:0 00h = Reserved 01h-FFh =Maximum number of logical sectors that shall be transferred per DRQ data block on READ/WRITE MULTIPLE commands
48	4000h	Trusted Computing feature set options 15 Shall be cleared to zero 14 Shall be set to one 13:1 Reserved for the Trusted Computing Group 0 1=Trusted Computing feature set is supported
49	2F00h	Capabilities 15:14 Reserved for the IDENTIFY PACKET DEVICE command. 13 1 = Standby timer values as specified in this standard are supported 0 = Standby timer values shall be managed by the device 12 Reserved for the IDENTIFY PACKET DEVICE command. 11 1 = IORDY supported

Wrd	Default Value	Description
		0 = IORDY may be supported 10 1 = IORDY may be disabled 9 1= LBA is supported. 8 1 = DMA supported 7:2 Reserved 1:0 Current Long Physical Sector Alignment setting
50	4000h	Capabilities 15 Shall be cleared to zero 14 Shall be set to one 13:2 Reserved 1 Obsolete 0 vendor specific Standby timer value minimum
51 - 52	00000000h	Obsolete
53	0007h	Field Validity 15:8 Free-fall Control Sensitivity 00h = Vendor's recommended setting 01h-FFh = Sensitivity level. 7:3 Reserved 2 1 = word 88 are valid 1 1 = word (70:64) are valid 0 Obsolete
54 - 58	3FFF0010003FFC1000FB	Obsolete
59	9D01h	Capabilities 15 1 = BLOCK ERASE EXT command is supported 14 1= OVERWRITE EXT command is supported 13 1 = CRYPTO SCRAMBLE EXT command is supported 12 1 = Sanitize feature set is supported 11:9 Reserved 8 1 = Multiple logical sector setting is valid 7:0 Current setting for number of logical sectors
60 - 61	XXXXXXXXXXXXX	Total number of user addressable logical sectors
62	0000h	Obsolete
63	0007h	Multiword DMA transfer 15:11 Reserved 10 1 = Multiword DMA mode 2 is selected 9 1 = Multiword DMA mode 1 is selected 8 1 = Multiword DMA mode 0 is selected 7:3 Reserved 2 1 = Multiword DMA mode 2 and below are supported 1 1 = Multiword DMA mode 1 and below are supported 0 1 = Multiword DMA mode 0 is supported
64	0003h	PIO transfer mode

Wrd	Default Value	Description
		15:2 Reserved 1:0 PIO modes supported
65	0078h	Minimum Multiword DMA transfer cycle time per word 15:0 Cycle time in nanoseconds
66	0078h	Manufacturer's recommended Multiword DMA transfer cycle time 15:0 Cycle time in nanoseconds
67	0078h	Minimum PIO transfer cycle time without flow control 15:0 Cycle time in nanoseconds
68	0078h	Minimum PIO transfer cycle time with IORDY flow control 15:0 Cycle time in nanoseconds
69	4D20h	Additional Supported 15 1 = CFast Specification Support 14 1 = Deterministic data in trimmed LBA range(s) is supported 13 1 = Long Physical Sector Alignment Error Reporting Control is supported 12 Obsolete 11 1 = READ BUFFER DMA is supported 10 1 = WRITE BUFFER DMA is supported 9 1 = SET MAX SET PASSWORD DMA and SET MAX UNLOCK DMA are supported 8 1 = DOWNLOAD MICROCODE DMA is supported 7 Reserved for IEEE-1667 6 0 = Optional ATA device 28-bit commands supported 5 1 = Trimmed LBA range(s) returning zeroed data is supported 4 1 = Device Encrypts All User Data 3 1 = Extended Number of User Addressable Sectors is supported 2 1 = All write cache is non-volatile 1:0 Reserved
70	0000h	Reserved
71 - 74	0000000000000000	Reserved for the IDENTIFY PACKET DEVICE command
75	001Fh	Queue depth 15:5 Reserved 4:0 Maximum queue depth - 1
76	810Eh	Serial ATA Capabilities 15 1 = Supports READ LOG DMA EXT as equivalent to READ LOG EXT 14 1 = Supports Device Automatic Partial to Slumber transitions 13 1 = Supports Host Automatic Partial to Slumber transitions 12 1 = Supports NCQ priority information 11 1 = Supports Unload while NCQ commands are outstanding 10 1 = Supports the SATA Phy Event Counters log 9 1 = Supports receipt of host initiated power management requests(HIPM) 8 1 = Supports the NCQ feature set 7:4 Reserved for Serial ATA

Wrd	Default Value	Description
		3 1 = Supports SATA Gen3 Signaling Speed(6.0Gb/s) 2 1 = Supports SATA Gen2 Signaling Speed (3.0Gb/s) 1 1 = Supports SATA Gen1 Signaling Speed (1.5Gb/s) 0 Shall be cleared to zero
77	0006h	Serial ATA Additional Capabilities 15:7 Reserved for Serial ATA 6 1 = Supports RECEIVE FPDMA QUEUED and SEND FPDMA QUEUED commands 5 1 = Supports NCQ Queue Management Command 4 1 = Supports NCQ Steaming 3:1 Serial ATA signal speed(01:Gen1, 02:Gen2, 03:Gen3) 0 Shall be cleared to zero
78	0044h	Serial ATA features supported 15:9 Reserved for Serial ATA 8 1 = Device Sleep supported 7 1 = Device supports NCQ Autosense 6 1 = Device supports Software Settings Preservation 5 Reserved for Serial ATA 4 1 = Device supports in-order data delivery 3 1 = Device supports initiating power management(DIPM) 2 1 = Device supports DMA Setup auto-activation 1 1 = Device supports non-zero buffer offsets 0 Shall be cleared to zero
79	0040h	Serial ATA features enabled 15:9 Reserved for Serial ATA 8 1 = Device Sleep enabled 7 1 = Automatic Partial to Slumber transitions enabled 6 1 = Software Settings Preservation enabled 5 Reserved for Serial ATA 4 1 = In-order data delivery enabled 3 1 = Device initiated power management enabled(DIPM) 2 1 = DMA Setup auto-activation enabled 1 1 = Non-zero buffer offsets enabled 0 Shall be cleared to zero
80	0FF8h	Major version number 15:11 Reserved 10 1 = supports ACS-3 9 1 = supports ACS-2 8 1 = supports ATA8-ACS 7 1 = supports ATA/ATAPI-7 6 1 = supports ATA/ATAPI-6 5 1 = supports ATA/ATAPI-5 4:1 Obsolete

Wrd	Default Value	Description
		0 Reserved
81	0000h	Minor version number
82	706Bh	Commands and feature sets supported 15 Obsolete 14 1 = NOP command is supported 13 1 = READ BUFFER command is supported 12 1 = WRITE BUFFER command is supported 11 :10Obsolete 9 1 = DEVICE RESET command is supported 8:7 Obsolete 6 1 = Read look-ahead is supported 5 1 = volatile write cache is supported 4 1 = PACKET feature set is supported 3 1= Power Management feature set is supported 2 Obsolete 1 1 = Security feature set is supported 0 1 = SMART feature set is supported
83	7401h	Commands and feature sets supported 15 Shall be cleared to zero 14 Shall be set to one 13 1 = FLUSH CACHE EXT command is supported 12 1= Mandatory FLUSH CACHE command is supported 11 Obsolete 10 1 = 48-bit Address feature set is supported 9:8 Obsolete 7 Reserved for the Address Offset Reserved Area Boot Method 6 1 = SET FEATURES subcommand is required to spin-up after power-up 5 1 = PUIS feature set is supported 4 Obsolete 3 1 = APM feature set is supported 2 1 = CFA feature set is supported 1 Obsolete 0 1 = DOWNLOAD MICROCODE command is supported
84	4161h	Commands and feature sets supported 15 Shall be cleared to zero 14 Shall be set to one 13 IDLE IMMEDIATE command with UNLOAD feature is supported 12 Reserved for TLC 11 Reserved for TLC 10:9 Obsolete 8 1 = 64-bit World wide name is supported 7 Obsolete 6 1 = WRITE DMA FUA EXT and WRITE MULTIPLE FUA EXT commandsare

Wrd	Default Value	Description
		supported 5 1 = GPL feature set is supported 4 1 = Streaming feature set is supported 3 Obsolete 2 1 = Media serial number is supported 1 1 = SMART self-test is supported 0 1 = SMART error logging is supported
85	7069h	Commands and feature sets supported or enabled 15 Obsolete 14 1 = NOP command is supported 13 1 = READ BUFFER command is supported 12 1 = WRITE BUFFER command is supported 11:10Obsolete 9 1= DEVICE RESET command is supported 8 1 = SERVICE interrupt is enabled 7 1 = Release interrupt is enabled 6 1 = Read look-ahead is enabled 5 1 = Volatile write cache is enabled 4 1= PACKET feature set is supported 3 1= Mandatory Power Management feature set is supported 2 Obsolete 1 1 = Security feature set is enabled 0 1 = SMART feature set is enabled
86	B401h	Commands and feature sets supported or enabled 15 1 = Words 119-120 are valid 14 Reserved 13 1 = FLUSH CACHE EXT command supported 12 1 = FLUSH CACHE command supported 11 Obsolete 10 1 = 48-bit Address features set is supported 9:8 Obsolete 7 1=Reserved for Address Offset Reserved Area Boot Method 6 1 = SET FEATURES subcommand is required to spin-up after power-up 5 1 = PUIS feature set is enabled 4 Obsolete 3 1 = APM feature set is enabled 2 1 = CFA feature set is supported 1 Obsolete 0 1 = DOWNLOAD MICROCODE command is supported
87	4161h	Commands and feature sets supported or enabled 15 Shall be cleared to zero 14 Shall be set to one 13 1 = IDLE IMMEDIATE command with UNLOAD FEATURE is supported

Wrd	Default Value	Description
		12 Reserved for TLC 11 Reserved for TLC 10:9 Obsolete 8 1 = 64-bit World wide name is supported 7 Obsolete 6 1 = WRITE DMA FUA EXT and WRITE MULTIPLE FUA EXT commandsare supported 5 1 = GPL feature set is supported 4 :3 Obsolete 2 1 = Media serial number is valid 1 1 = SMART self-test supported 0 1 = SMART error logging is supported
88	407Fh	Ultra DMA modes 15 Reserved 14 1 = Ultra DMA mode 6 is selected 13 1 = Ultra DMA mode 5 is selected 12 1 = Ultra DMA mode 4 is selected 11 1 = Ultra DMA mode 3 is selected 10 1 = Ultra DMA mode 2 is selected 9 1 = Ultra DMA mode 1 is selected 8 1 = Ultra DMA mode 0 is selected 7 Reserved 6 1 = Ultra DMA mode 6 and below are supported 5 1 = Ultra DMA mode 5 and below are supported 4 1 = Ultra DMA mode 4 and below are supported 3 1 = Ultra DMA mode 3 and below are supported 2 1 = Ultra DMA mode 2 and below are supported 1 1 = Ultra DMA mode 1 and below are supported 0 1 = Ultra DMA mode 0 is supported
89	0004h	SECURITY ERASE UNIT Time 15 1 = Extended Time is reported in bits 14:0 0 = Extended Time is reported in bits 7:0 14:8 Extended Time required for Normal Erase mode 7:0 Extended Time required for Normal Erase mode
90	0004h	ENHANCED SECURUTY ERASE UNIT Time 15 1 = Extended Time is reported in bits 14:0 0 = Extended Time is reported in bits 7:0 14:8 Extended Time required for Enhanced Erase mode 7:0 Extended Time required for Enhanced Erase mode
91	0000h	Advanced Power Management Level 15:8 Reserved 7:0 Current APM level value
92	FFFEh	Master Password Identifier

Wrd	Default Value	Description
93	0000h	Hardware reset result 15 Shall be cleared to zero. 14 Shall be set to one. 13 1 = device detected CBLID- above 0 = device detected CBLID- below 12:8 Device 1 hardware reset result. 7:0 Device 0 hardware reset result.
94	0000h	Obsolete
95	0000h	Stream Minimum Request Size
96	0000h	Streaming Transfer Time - DMA
97	0000h	Streaming Access Latency - DMA and PIO
98 - 99	00000000h	Streaming Performance Granularity
100 - 103	XXXXXXXX	Number of User Addressable Logical Sectors
104	0000h	Streaming Transfer Time - PIO
105	0008h	Maximum number of 512-byte blocks per DATA SET MANAGEMENT command
106	4000h	Physical sector size / logical sector size 15 Shall be cleared to zero 14 Shall be set to one 13 1 = Device has multiple logical sectors per physical sector. 12 1 = Device Logical Sector longer than 256 Words 11:4 Reserved 3:0 2^logical sectors per physical sector
107	0000h	Inter-seek delay for ISO 7779 standard acoustic testing
108 - 111	XXXXXXXX	World wide name
112 - 115	0000000000000000	Reserved
116	0000h	Reserved for TLC
117 - 118	00000000h	Logical sector size
119	4018h	Commands and feature sets supported 15 Shall be cleared to zero 14 Shall be set to one 13:8 Reserved 7 1 = Extended Power Conditions feature set is supported 6 1 = Sense Data Reporting feature set is supported 5 1 = Free-fall Control feature set is supported 4 1 = DOWNLOAD MICROCODE mode 3 is supported 3 1 = READ LOG DMA EXT and WRITE LOG DMA EXT commands are supported 2 1 = WRITE UNCORRECTABLE EXT command is supported 1 1 = Write-Read-Verify feature set is supported 0 Reserved for DDT

Wrd	Default Value	Description
120	4018h	Commands and feature sets supported or enabled 15 Shall be cleared to zero 14 Shall be set to one 13:8 Reserved 7 1 = Extended Power Conditions feature set is enabled 6 1 = Sense Data Reporting feature set is supported 5 1 = Free-fall Control feature set is enabled 4 1 = DOWNLOAD MICROCODE mode 3 is supported 3 1 = READ LOG DMA EXT and WRITE LOG DMA EXT commands are supported 2 1 = WRITE UNCORRECTABLE EXT command is supported 1 1 = Write-Read-Verify feature set is enabled 0 Reserved for DDT
121 - 126	000000000000000000000000	Reserved for expanded supported and enabled settings
127	0000h	Obsolete
128	0021h	Security status 15:9 Reserved 8 Master Password Capability: 0 = High, 1 = Maximum 7:6 Reserved 5 1 = Enhanced security erase supported 4 1 = Security count expired 3 1 = Security frozen 2 1 = Security locked 1 1 = Security enabled 0 1 = Security supported
129 - 159	XXXXXXXXXXXXX	Vendor specific
160	0000h	CFA power mode 15 Word 160 supported 14 Reserved 13 CFA power mode 1 is required for one or more commands implemented by the device 12 CFA power mode 1 disabled 11:0 Maximum current in ma
161 - 167	0000000000000000000000000000	Reserved for the CompactFlash Association
168	000Xh	Device Nominal From Factor 15:4 Reserved 3:0 Device Nominal Form Factor
169	0001h	DATA SET MANAGEMENT command is supported 15:1 Reserved 0 1 = Trim bit in the DATA SET MANAGEMENT command is supported
170 - 173	0000000000000000	Additional Product Identifier

Wrd	Default Value	Description
174 - 175	00000000	Reserved
176 - 205	00000000000000000000000000 0 00000000000000000000000000 0 00000000000000000000000000 0 00000000000000000000000000 0 000000000000	Current media serial number
206	0000h	SCT Command Transport 15:12 Vendor Specific 11:8 Reserved 7 Reserved for Serial ATA 6 Reserved 5 1=The SCT Data Tables command is supported 4 1=The SCT Feature Control command is supported 3 1=The SCT Error Recovery Control command is supported 2 1=The SCT Write Same command is supported 1 Obsolete 0 1=The SCT Command Transport is supported
207 - 208	00000000h	Reserved
209	4000h	Alignment of logical blocks within a physical block 15 Shall be cleared to zero 14 Shall be set to one 13:0 Logical sector offset within the first physical sector where the first logical sector is placed
210 - 211	00000000h	Write-Read-Verify Sector Count Mode 3
212 - 213	00000000h	Write-Read-Verify Sector Count Mode 2
214 - 216	000000000000h	Obsolete
217	0001h	Nominal media rotation rate
218	0000h	Reserved
219	0000h	Obsolete
220	0000h	Write-Read-Verify feature 15:8 Reserved 7:0 Write-Read-Verify feature set current mode
221	0000h	Reserved
222	10FFh	Transport major version number 15:12 Transport Type 0: Parallel 1: Serial 2h-Fh: Reserved

Wrd	Default Value	Description
		11:6 Parallel = Reserved / Serial = Reserved 5 Parallel = Reserved / Serial = SATA Rev 3.0 4 Parallel = Reserved / Serial = SATA Rev 2.6 3 Parallel = Reserved / Serial = SATA Rev 2.5 2 Parallel = Reserved / Serial = SATA II Extensions 1 Parallel = ATA/ATAPI-7 / Serial = SATA 1.0a 0 Parallel = ATA8-APT / Serial = ATA8-AST
223	0000h	Transport minor version number
224 - 229	000000000000000000000000	Reserved
230-233	0000000000000000	Extended Number of User Addressable Sectors
234	0001h	Minimum number of 512-byte data blocks per DOWNLOAD MICROCODE mode 03h operation
235	0008h	Maximum number of 512-byte data blocks per DOWNLOAD MICROCODE mode 03h operation
236 - 254	XXXXXXXXXXXXX	Reserved
255	XXA5h	Integrity word 15:8 Checksum 7:0 Checksum Validity Indicator

Note:
1. X = content (byte) is vendor specific and may be fixed or variable.

5. Contact Information

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Revision History

Version	Date	Changes
1.0	2025/9	Initial release