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TOSHIBA AMERICA INFORMATION SYSTEMS
STORAGE DEVICE DIVISION
IRVINE, CALIFORNIA

MK4008GAH (HDD1744)
1.8-INCH HARD DISK DRIVE
USER MANUAL

Rev 02

11/2006

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INTRODUCTION – MK4008GAH (HDD1744) HARD DISK DRIVE

General Features

- 1.8" sized drive
- 2 Platter
- 40 Gigabytes*
- 8mm High
- 15ms Average Seek Time
- ATA-6 Interface
- Ultra DMA 100
- 2MB Buffer
- Rotational speed of 4,200rpm
- MTTF 300,000 Hours

**Toshiba defines a megabyte (MB) as 1,000,000 bytes and a gigabyte (GB) as 1,000,000,000 bytes.*

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SETUP – MK4008GAH (HDD1744) HARD DISK DRIVE

***Caution**: Your Hard Disk Drive is a precision device and even a small drop onto any surface can cause damage. Electronstatic discharge can also damage the drive. You should ground yourself prior to handling the drive.*

Figure 1. MK4008GAH Side View

Installation Notes

- Do not apply any force to the top cover, except the screw areas on top cover. Maximum force to the specified area is 2N.

important Note: Disconnect power from your computer system before beginning installation

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USING THE HARD DISK DRIVE – MK4008GAH (HDD1744) HARD DISK DRIVE

Backing up Data Files

To avoid data loss, regularly back up the data files on the hard disk drive.

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SPECIFICATIONS –MK4008GAH (HDD1744) HARD DISK DRIVE

General

Model	MK4008GAH (HDD1744)
Interface	ATA-6

Functionality

Formatted Capacity	40.0GB*
Rotational Speed	4,200rpm
Avg. Rotational Latency	7.14/ms
Spin-up Time	3.sec (typical)
Buffer	2MB
Seek Time	
Average	15
Maximum	26
Internal Transfer Rate	132.6 ~ 230.9 Mbits/sec (max)
Host Transfer Rate	
Ultra DMA mode	100Mbytes/sec
PIO Mode	16.6Mbytes/sec
Interleave Factor	1:1

**Toshiba defines a megabyte (MB) as 1,000,000 bytes and a gigabyte (GB) as 1,000,000,000 bytes.*

Internal Drive Characteristics

Number of Disks	2
Number of Data Heads	4
Track Density (TPI)	4,331 (110k)
Logical Cylinders	16,383
Logical Heads	16
Logical Sectors/track	63
Bytes per Sector	512
Logical Blocks (LBA)	78,126,048

Reliability

Preventative maintenance	None
Non-recoverable read errors	1 error per 10^{13} bits read

Electrical

Voltage	3.3V 5%

Power Consumption

Start	1.8W typ
Seek	1.1W typ
Read/Write	1.0W typ
Sleep	0.07W typ
Energy Consumption Efficiency	0.0075W/GB avg
Shock	
Operating	4,900m/s^2 (500G)(2msec)
Non-Operating	14,700m/s^2 (1500G)(1msec)

Physical

Height	0.315 (8.0mm)
Width	2.13" (54.0mm)
Depth	3.09" (78.5mm)
Weight	2.08oz (59g) typ

Regulatory

The drive satisfies the following standards:

Underwriters Laboratories (UL)	1950
Canadian Standard Association (CSA)	C22.2 No. 950
TUV Rheinland	EN 60 950
BSMI	3902C799

DRIVE CONNECTORS –MK4008GAH (HDD1744) HARD DISK DRIVE

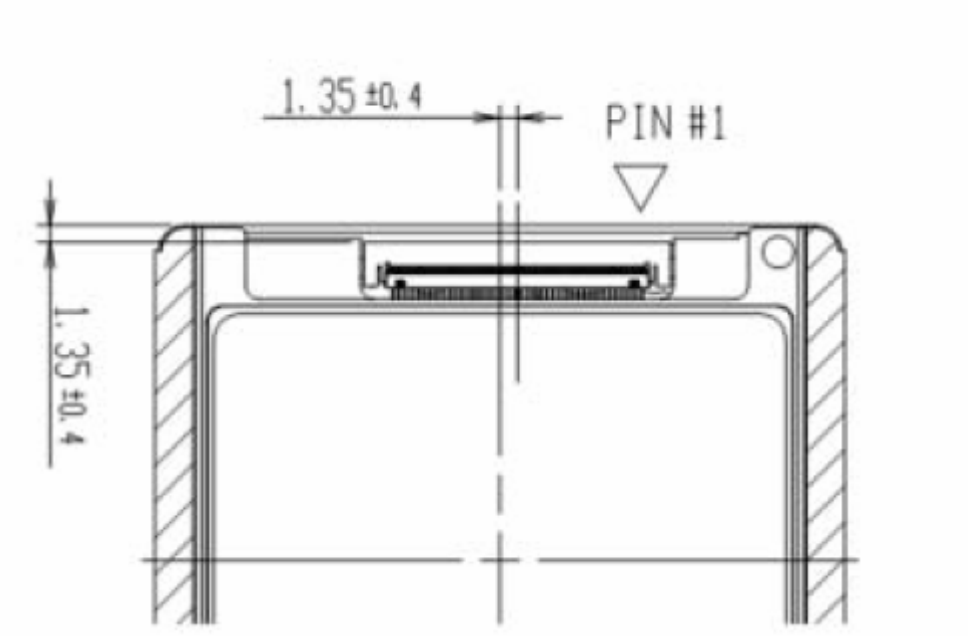

Figure 1. MK4008GAH HDD - INTERFACE CONNECTOR

Interface Connector

Drive Side Connector	DDK Ltd, FF19A-40B-R11b
Recommended host side FPC	1. Width: 20.50 ±0.07mm 2. Thickness:0.20 ±0.03mm 3. Length: 90mm (max) 4. Impedance: Typical 50ohm 5. Plating: Gold over Nickel plating (note 1) 6. Adhesive: Heat-hardened adhesive
Connector Durability (note 2)	20 times
FPC Holding fource (note 3)	Typ: 17[N] Min: 5[N]

* Do not pull out FPC with the connector locked.
* Do not lock without FPC

Notes:

1. To avoid Sn whisker

2. In horizontal direction with FPC of 0.20mm in thickness and with the same connector and FPC

3. In horizontal direction with FPC of 0.20mm in thickness and with the same connector and FPC after pulling out repeatedly

Interface Signals

DRIVE INTERFACE SIGNALS			
PIN	**SIGNAL**	**PIN**	**SIGNAL**
1	RESERVED	2	RESERVED
3	- RESET	4	GROUND
5	DD 7	6	DD 8
7	DD 6	8	DD 9
9	DD 5	10	DD 10
11	DD 4	12	DD 11
13	DD 3	14	DD 12
15	DD 2	16	DD 13
17	DD 1	18	DD 14
19	DD 0	20	DD 15
21	GROUND	22	DMARQ
23	GROUND	24	-DIOW/STOP
25	- DIOR/ - HDMARDY HSTROBE	26	GROUND
27	IORDY/ - DMARDY/- DSTROBE	28	GROUND
29	DMACK	30	INTRQ
31	DA1	32	- PDIAG/-CBLID
33	DA0	34	DA 2
35	- CS0	36	CS1
37	- DASP	38	+3.3V
39	+3.3V	40	RESERVED
Note: Symbol (-) in front of signal indicates negative logic.			