Ultrastar™ C10K600

2.5-Inch SFF Enterprise 10K RPM Hard Disk Drives

Highlights

- Industry-best performance in a 10K RPM 2.5-inch form factor
- 18% faster sequential and up to 15% better random performance than competition
- Uses 22% less power during operation than competition
- 600GB[1] capacity enables 3.5- to 2.5-inch form factor transition
- High-performance 6Gb/s SAS for reliable data throughput
- Halogen-reduced design and industry-best power utilization for most eco-friendly 10K SFF hard drive

Applications/Environments

- Enterprise-class servers
- Networked storage arrays
- Space and/or power constrained environments
- Databases and Online Transaction Processing (OLTP)
- Blade and 1U/2U rack-mounted servers
- Cloud computing

Leadership Performance

Ultrastar™ C10K600 is a 2.5-inch 10,000 RPM hard drive that leads the pack with 18% faster sequential and up to 15% random performance than other drives in its class. The high-performance SAS 6Gb/s interface delivers data reliability, availability and scalability and is the first small form factor SAS drive in the industry to pack a 64MB cache buffer to optimize the read/write response time.

Best-in-Class Power Performance

Power management innovations designed into the Ultrastar C10K600 enable industry-leading power efficiency and translate into reduced power requirements and lower cooling costs. HGST Advanced Power Management technology, with multi-state idle modes, maintains compatibility with T10 direction and can be pre-programmed or manually initiated in the system. Compared to 3.5-inch enterprise drives, the C10K600 consumes 70% less space and its small eco-friendly design enables reduced power consumption of up to 65%. Ultrastar C10K600 continues the HGST tradition of environmental leadership with its halogen-reduced components and focus on low power consumption, and carries the HGST EcoTrac classification.

Driving the Small Form Factor Transition

Ultrastar C10K600 delivers capacity parity with 3.5-inch 10K drives, providing a massive 600GB of storage space and enabling lower total cost of ownership for many Enterprise environments, especially networked storage arrays. When faced with space and power limitations, the Ultrastar C10K600 is an efficient solution for online transaction processing, intensive data analysis and multi-user applications. Some models of the C10K600 also offer Bulk Data Encryption for hard-drive-level data security. These self-encrypting models are designed to the Trusted Computing Group's Enterprise A Security Subsystem Class encryption specification and allow customers to reduce costs associated with drive retirement and extend drive life by enabling swift and secure repurposing of drives.

Features and Benefits

	Feature / Function	Benefits
Return on Investment	Advanced power management	Cool enterprise SAS with lower power requirements
	600GB, 450GB and 300GB	More capacity for less space and configuration flexibility
Performance	SAS 6Gb/s dual port	Fastest interface for enhanced reliability
	10,000 RPM	Low latency for faster access to data
	64MB cache buffer	Manages data efficiently
	Rotational Vibration Safeguard (RVS)	Maintains drive performance in high rotational vibration environments and multi-drive systems
	Workload detector technology	Maximizes performance in RAID environments
Reliability	Iterative decode	Improves signal processing
	End-to-end data protection (ANSI) without capacity loss	Enhances error detection for optimal data integrity
	Head load/unload ramp	Minimizes handling damage during integration

600GB, 450GB & 300GB
10,000 RPM ▎ 2.5-inch SFF
SAS 6Gb/s

EcoTrac

HGST
a Western Digital company

HGST Quality and Service

HGST's Ultrastar C10K600 extends the company's long-standing tradition of performance and reliability leadership. A balanced combination of new and proven technologies enables high reliability and availability to customer data.

HGST drives are backed by an array of technical support and services, which may include customer and integration assistance. HGST is dedicated to providing a breadth of hard disk drive solutions to satisfy all of today's demanding computing needs.

How to read the Ultrastar model number

HUC106060CSS600 = 600GB, SAS 6Gb/s

H	=	HGST
U	=	Ultrastar
C	=	Compact (vs S for Standard)
10	=	10,000 RPM
60	=	Full capacity — 600GB
60	=	Capacity this model, 60 = 600GB (14 = 147GB)
C	=	Generation code
S	=	14.8mm z-height
S6	=	Interface, SAS 6Gb/s
0	=	Reserved
0	=	Reserved (1 = TCG encryption)

Information and Technical Support

www.hgst.com (Main Web site)
www.hgst.com/partners (Partner Web site)

North America

support__usa@hgst.com
Toll free: 1 888 426-5214, Direct: 1 408 717-8087

Asia Pacific

support__ap@hgst.com / 65 6840 9595

EMEA and UK

support__uk@hgst.com / 44 20 7133 0032

Germany

support__uk@hgst.com / 49 6929 993601

Program Support

Partners First Program. channelpartners@hgst.com

Specifications

Models	HUC106060CSS600
	HUC106060CSS601
	HUC106045CSS600
	HUC106045CSS601
	HUC106030CSS600
	HUC106030CSS601

Configuration

Interface	SAS 6Gb/s
Capacity (GB)[1]	600 / 450 / 300
Recording zones	39
Data heads (physical)	6 / 6 / 3
Data disks	3 / 3 / 2
Max. areal density (Gbits/sq. in.)	341

Performance

Data buffer (MB)[2]	64
Rotational speed (RPM)	10,000
Latency average (ms)	3.0
Media transfer rate (Mbits/s, max)	1893
Interface transfer rate (MB/s, max)	600
Sustained transfer rate (MB/s, typical)	176-109
Seek time (read, ms, typical)[3]	3.7

Reliability

Error rate (non-recoverable, bits read)	1 in 10^{16}
MTBF[4] (M hours)	2.0
Availability (hrs/day x days/wk)	24x7

Acoustics

Idle (Bels)	2.9

Power

Requirement	+5 VDC (+/-5%), +12 VDC (+/-5%)
Operating, (W, typical)	5.6 / 5.4 / 5.0
Low RPM idle (W)	3.1 / 3.1 / 2.8
Power consump. efficiency index (W/GB)	0.0052 / 0.0069 / 0.0094

Physical size

z-height (mm)	14.8
Dimensions (width x depth, mm)	70.1 x 100.6
Weight (g, max)	204

Environmental (operating)

Ambient temperature	5° to 55° C
Shock (half-sine wave 2ms, G)	60

Environmental (non-operating)

Ambient temperature	-40° to 70° C
Shock (half-sine wave, 2ms, G)	>300
Vibration, random (G, 5 to 500 Hz)	3, all axes

[1] One MB is equal to on million bytes, one GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to hard disk capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of the hard drive, the computer's operating system, and other factors.

[2] Portion of buffer capacity used for drive firmware
[3] Excludes command overhead
[4] MTBF target is based on a sample population and is estimated by statistical measurements and acceleration algorithms under median operating conditions. MTBF ratings are not intended to predict an individual drive's reliability. MTBF does not constitute a warranty.

![HGST a Western Digital company]