Ultrastar® C10K900

Highlights

- Ultra fast 6Gb/sec SAS for reliable data throughput
- Built on field-proven, reliable design
- Industry-best performance in a 10K RPM 2.5-inch form factor
- 18% faster sequential and up to 17% better random performance than competition
- Uses 28% less power during operation than competition
- 900GB[1] capacity continues to support the 3.5- to 2.5-inch form factor transition
- High-performance 6Gb/s SAS for reliable data throughput
- Large 64MB cache buffer manages data efficiently
- Halogen-reduced design and industry-best power utilization for most eco-friendly 10K SFF hard drive

Applications/Environments

- Space and/or power constrained environments
- Enterprise-class servers and networked storage arrays
- Blade and 1U/2U rack-mounted servers
- Databases and Online Transaction Processing (OLTP)
- High performance computing and other 24x7 applications
- Cloud computing

Leadership Performance

Ultrastar® C10K900 is a 2.5-inch 10,000 RPM hard drive that leads the industry with 18% faster sequential and up to 17% random performance than the nearest competitor. The high-performance SAS 6Gb/s interface delivers data reliability, availability and scalability and is the only small form factor SAS drive in the industry to pack a 64MB cache buffer for optimized read/write response time.

Best-in-Class Power Performance

Power management innovations designed into the Ultrastar C10K900 enable industry-leading power efficiency, up to 28% better than competing drives, and translate into reduced power requirements and lower cooling costs. HGST Advanced Power Management technology, with multi-state idle modes, maintains compatibility with the INCITS T10 Technical Committee standards direction and can be pre-programmed or manually initiated in the system. Ultrastar C10K900 continues the HGST tradition of environmental leadership with its halogen-reduced components and focus on low power consumption.

Driving the Small Form Factor Transition

Ultrastar C10K900 delivers a massive 900GB 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 C10K900 is an efficient solution for online transaction processing, intensive data analysis and multi-user applications. Some models of the C10K900 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.

HGST Quality and Service

HGST's Ultrastar C10K900 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.

Features & Benefits

	Feature / Function	Benefits
Return on Investment	• Advanced power management • 900GB, 600GB, 450GB and 300GB	• Cool enterprise SAS with lower power requirements • More capacity for less space and configuration flexibility
Performance	• Dual Stage Actuator • 10,000 RPM • 64MB cache buffer • Rotational Vibration Safeguard (RVS) • Workload detector technology	• Enhances seek performance • Low latency for faster access to data • Manages data efficiently • Maintains drive performance in high rotational vibration environments and multi-drive systems • Maximizes performance in RAID environments
Reliability	• IDRC technology • RRO fields • End-to-end data protection (ANSI) without capacity loss • Patented head load/unload ramp	• mproves signal processing for more robust data integrity • Improves handling of repeatable run out to lower risk of data squeeze and write inhibit rate • Enhances error detection for optimal data integrity • Minimizes handling damage during integration

900GB, 600GB, 450GB & 300GB
10,000 RPM | 2.5-inch SFF SAS 6Gb/s

Ultrastar® C10K900

Specifications

	Standard Models	TCG Models
Models	HUC109090CSS600 HUC109060CSS600 HUC109045CSS600 HUC109030CSS600	HUC109090CSS601 HUC109060CSS601 HUC109045CSS601 HUC109030CSS601

Configuration	
Interface	SAS 6Gb/s
Capacity (GB)[1]	900 / 600 / 450 / 300
Recording zones	40
Data heads (physical)	6 / 4 / 3 / 2
Data disks	3 / 2 / 2 / 1
Max. areal density (Gbits/sq. in.)	494
Performance	
Data buffer (MB)[2]	64
Rotational speed (RPM)	10,000
Latency average (ms)	<3.0
Media transfer rate (Mbits/s, max)[3]	2105
Interface transfer rate (MB/s, max)[3]	600
Sustained transfer rate (MB/s, typical)	198 - 117
Seek time (read, ms, typical)[4]	3.8 / 4.2
Reliability	
Error rate (non-recoverable, bits read)	1 in 10^{16}
MTBF[5] (M hours)	2.0
Annualized Failure Rate[5] (AFR)	0.44%
Availability (hrs/day x days/wk)	24x7

Acoustics	
Idle (Bels)	2.9
Power	
Requirement	+5 VDC (+/-5%), +12 VDC (+/-5%)
Operating, (W, typical)	5.8
Low power idle (W)	3.0
Power consump. efficiency index (W/GB)	0.0043 / 0.0058 / 0.0078 / 0.0107
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 RMS, 5 to 500 Hz)	1.5, 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 drive 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] MB is equal to MillionBytes
[4] Excludes command overhead
[5] MTBF and AFR targets are based on a sample population and are estimated by statistical measurements and acceleration algorithms under median operating conditions. MTBF and AFR ratings do not predict an individual drive's reliability and do not constitute a warranty.

How to read the Ultrastar model number

HUC109090CSS600 = 900GB, SAS 6Gb/s
H = HGST
U = Ultrastar
C = Compact (vs S for Standard)
10 = 10,000 RPM
90 = Full capacity — 900GB
90 = Capacity this model, 90 = 900GB
(60 = 600GB, 45 = 450GB, 30 = 300GB)
C = Generation code
S = 14.8mm z-height
S6 = Interface, SAS 6Gb/s
0 = Reserved
0 = Reserved (1 = TCG encryption)

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