Ultrastar™ 15K600
3.5-Inch Enterprise 15K RPM
Hard Disk Drives

Highlights
• 600GB¹ capacity will store most everything
• Spinning at 15,000 RPM for mission critical performance
• FCAL & SAS interfaces for reliable data throughput
• Advanced Power Management optimizes power consumption
• Largest 64MB cache buffer in the industry
• Self-encrypting models conform to TCG's Enterprise A specification

Applications/Environments
• Business & online transaction processing
• Internet, file sharing and email
• Decision support & RAID
• NAS, SAN and enterprise-class servers
• High performance computing and other applications requiring 24x7 availability

All-in-one Storage Solution
HGST combines ultimate performance with high capacity in the same drive. The Ultrastar™ 15K600 can store up to 600GB of data while spinning at 15,000 RPM. That amounts to a capacity growth of 33% over its predecessor to keep pace with digital data growth and improve space efficiency in today's data centers. At the same time, sequential performance increased by 23% compared to prior generation to keep data moving faster. The 64MB cache buffer is the largest in the industry in its class and the 15K600 is designed for HGST reliability. The 6Gb/s Serial Attached SCSI (SAS) and 4Gb/s Fibre Channel Arbitrated Loop (FCAL) interfaces support the reliability required in the most demanding enterprise computing environments like on-line transaction processing, intensive data analysis, multi-user applications and data warehousing.

Friends of the Earth
Compared to its predecessor, power usage is reduced by up to 31% to help reduce the cooling requirements in data centers. In addition, Advanced Power Management feature enables multiple idle modes in order to optimize power usage and save even more on energy costs. The 15K600 also saves money because the larger capacity enables higher data storage density in the current footprint without further expansion of the data center. These eco-friendly features qualify the 15K600 for the EcoTrac classification.

Compromise Nothing
The Ultrastar 15K600 self-encrypting models conform to the Trusted Computing Group's Enterprise A Security Subsystem Class encryption specification. Now, customers can reduce costs associated with drive retirement and extend drive life by enabling repurposing of drives.

Features and Benefits

<table>
<thead>
<tr>
<th>Feature / Function</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>Return on Investment</td>
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<tr>
<td>Advanced power management</td>
<td>Lowers power consumption and saves cooling cost</td>
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<td>Trusted Computing Group</td>
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<td>Enterprise A encryption</td>
<td>Reduces drive retirement cost</td>
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<tr>
<td>Performance</td>
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<tr>
<td>15,000 RPM</td>
<td>High performance for mission critical applications</td>
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<td>64MB cache buffer</td>
<td>Optimizes read/write response times</td>
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<td>Rotational Vibration Safeguard (RVS)</td>
<td>Maintains drive performance in high rotational vibration environments and multi-drive systems</td>
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<td>Workload detector technology</td>
<td>Maximizes performance in RAID environments</td>
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<tr>
<td>Reliability</td>
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<tr>
<td>FCAL 4Gb/s &amp; SAS 6Gb/s</td>
<td>Fast and reliable interfaces for enterprise-class applications</td>
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<td>Reverse concatenation</td>
<td>Improves signal processing</td>
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<td>Repeatable Run Out (RRO) fields</td>
<td>Reduction in RRO lowers risk of data squeeze and write inhibit rate</td>
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<td>End-to-end data protection (ANSI)</td>
<td>Enhances error detection for optimal data integrity</td>
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<td>Head load/unload ramp</td>
<td>Minimizes handling damage during integration</td>
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<tr>
<td>Fluid Dynamic Bearing (FDB) Motor</td>
<td>Improves acoustics &amp; proven reliability</td>
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¹600GB, 450GB, 300GB | 15,000 RPM
SAS 6Gb/s & FCAL 4Gb/s
HGST Quality and Service

HGST’s Ultrastar 15K600 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
HUS156060VLS600 = 600GB, SAS 6Gb/s
H = HGST
U = Ultrastar
S = Standard (vs S for Compact)
60 = Full capacity — 600GB
60 = Capacity this model, 60 = 600GB
45 = 450GB, 30 = 300GB
V = Generation code
L = 25.8mm z-height
S6 = Interface, SAS 6Gb/s (F4 = FCAL 4Gb/s)
0 = Reserved
0 = No encryption (1 = TCG encryption)

Information and Technical Support
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Program Support
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Specifications

Models
HUS156060VLS600
HUS156060VLS601
HUS156045VLS600
HUS156045VLS601
HUS156030VLS600
HUS156030VLS601
HUS156060VLF400
HUS156060VLF401
HUS156045VLF400
HUS156045VLF401
HUS156030VLF400
HUS156030VLF401

Configuration
Interface
SAS 6Gb/s
FCAL 4Gb/s
Capacity (GB)1
600 / 450 / 300
Data heads (physical)
8 / 6 / 4
Data Disks
4 / 3 / 2

Performance
Data buffer (MB)2
64
Rotational speed (RPM)
15,000
Interface transfer rate (MB/s, max)
600
Sustained transfer rate (MB/s, typical)
198 to 119
Seek time (read/write, ms, typical)3
3.4

Reliability
Error rate (non-recoverable, bits read)
1 in 10¹⁶
MTBF4 (M hours)
1.6
Availability (hrs/day x days/wk)
24x7

Acoustics
Idle (Bels)
3.7

Power
Requirement
+5 VDC (+/-5%)
+12 VDC (+/-5%)
Operating, (W, typical)
16.6 / 14.4 / 13.2
Unload power idle (W)
10.7 / 9.2 / 7.7

Physical size
z-height (mm)
25.8
Dimensions (width x depth, mm)
101.6 x 146.2
Weight (g, max)
750

Environmental (operating)
Ambient temperature
5° to 55° C
Shock (half-sine wave)
30G (2ms)
Vibration (G RMS, 5 to 500 Hz)
1.5, all axes

Environmental (non-operating)
Ambient temperature
-40° to 70° C
Shock (half-sine wave)
200G (2ms)
Vibration (G RMS, 5 to 500 Hz)
2.0, all axes

1 One GB is equal to one billion bytes when referring to hard drive capacity. Accessible capacity will vary depending on the operating environment and formatting.
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.