We provide the most reliable storage solution
Imagine the center of innovative lifestyle with Samsung’s HDD products.

Samsung is committed to pursuing the requirements and satisfaction for our customers. Samsung implements proprietary technology, ideal for today’s diverse applications. With Samsung HDD, it’s not hard to imagine enjoying new, comfortable lifestyle.

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Line-up

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Experience the outstanding performance

Desktop HDD
Spinpoint F3
Spinpoint F1DT
EcoGreen F3 (F3EG)
EcoGreen F2 (F2EG)
EcoGreen F1DT (F1EG)

Best combination of high capacity, data reliability and solid performance meets all your computing needs.
Spinpoint F3

1 TB / 750 GB / 500 GB / 320 GB / 250 GB / 160 GB

Key Features
- Max. 500 GB Formatted Capacity Per Disk
- Serial ATA 3.0 Gbps Interface Support
- Improved recording stability over temperature with PMR
- Advanced dynamic FID control for best data integrity
- Intelligent compensation of external disturbance
- SATA Native Command Queuing Feature
- Device Initiated SATA Power Management
- Rotational vibration sensor
- Environment friendly product with RoHS compliance
- Rotational vibration sensor
- Device Initiated SATA Power Management
- Rotational vibration sensor
- Environment friendly product with RoHS compliance
- Rotational vibration sensor
- Environment friendly product with RoHS compliance

Specifications

<table>
<thead>
<tr>
<th>Capacity</th>
<th>160 GB</th>
<th>250 GB</th>
<th>320 GB</th>
<th>500 GB</th>
<th>750 GB</th>
<th>1 TB</th>
</tr>
</thead>
<tbody>
<tr>
<td>reading 1</td>
<td>6 MB</td>
<td>10 MB</td>
<td>16 MB</td>
<td>32 MB</td>
<td>64 MB</td>
<td>128 MB</td>
</tr>
<tr>
<td>writing  1</td>
<td>4 MB</td>
<td>6 MB</td>
<td>10 MB</td>
<td>16 MB</td>
<td>32 MB</td>
<td>64 MB</td>
</tr>
</tbody>
</table>

Spinpoint F1DT

1 TB / 750 GB / 640 GB / 500 GB / 320 GB / 250 GB / 160 GB / 80 GB

Key Features
- Max. 504 GB Formatted Capacity per Disk
- Serial ATA 3.0 Gbps Interface Support
- Improved recording stability over temperature with PMR
- Advanced dynamic FID control for best data integrity
- Intelligent compensation of external disturbance
- SATA Native Command Queuing Feature
- Device Initiated SATA Power Management
- Rotational vibration sensor
- Environment friendly product with RoHS compliance

Specifications

<table>
<thead>
<tr>
<th>Capacity</th>
<th>66 GB</th>
<th>160 GB</th>
<th>250 GB</th>
<th>320 GB</th>
<th>500 GB</th>
<th>640 GB</th>
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<th>1 TB</th>
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</thead>
<tbody>
<tr>
<td>reading 1</td>
<td>8 MB</td>
<td>10 MB</td>
<td>16 MB</td>
<td>32 MB</td>
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<td>128 MB</td>
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<td>500 MB</td>
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<tr>
<td>writing  1</td>
<td>4 MB</td>
<td>6 MB</td>
<td>10 MB</td>
<td>16 MB</td>
<td>32 MB</td>
<td>64 MB</td>
<td>128 MB</td>
<td>256 MB</td>
</tr>
</tbody>
</table>

*Notes: Design and specifications are subject to change without prior notice.
EcoGreen F3
1 TB / 750 GB / 500 GB / 320 GB / 250 GB

Key Features
• Max.500 GB Formatted Capacity Per Disk
• Serial ATA 3.0Gbps Interface Support
• Improved recording stability over temperature with PMR
• Advanced dynamic FOD control for best data integrity
• Intelligent compensation of external disturbance
• SATA Native Command Queuing Feature
• ATA 48-bit Address Feature
• ATA S.M.A.R.T. Compliant
• Rotational vibration sensor (Optional)
• Device Initiated SATA Power Management
• ATA Device Configuration Overlay Feature
• ATA Seek™

Application
Desktop PC / Digital TV / Home Media Servers

Specifications
Capacity
<table>
<thead>
<tr>
<th>250 GB</th>
<th>320 GB</th>
<th>500 GB</th>
<th>750 GB</th>
<th>1 TB</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 MB</td>
<td>HD3253GI</td>
<td>HD3264H</td>
<td>HD5033H</td>
<td>HD7094AI</td>
</tr>
</tbody>
</table>

DrivE Configuration
Form factor: 3.5"  8.9 cm x 14.0 cm  3.5"  8.9 cm x 14.0 cm
Sector size: 512 bytes
Average seek time: 8.9 ms
Access time: 9.5 ms
Idle: 0.68 W
Standby: 0.11 W
Power management: Yes

Environmental Specifications
Temperature: Operating 0~60°C
Non-operating -40~70°C
Humidity: Operating: 85% non-condensing
Non-operating: 85% non-condensing

Reliability Specifications
Drive ready time (typical): 8 sec
Media to buffer (max): 250 MB/sec
Data transfer rate:
Average latency: 5.52 ms
Average seek time (typical): 8.9 ms

Performance Specifications
Sector size: 512 bytes
Buffer DRAM size: 16 MB
Interface: Serial ATA 3.0 Gbps

Physical Dimension
Height: 39.1 mm
Width: 101.5 mm
Depth: 26.1 mm
Weight: 750 g / 1.7 lb  825 g

ACoustics
Idle: 2.2 Bel
Standby: 1.6 Bel
Read/Write: 4.0 Bel

Power Requirements
Voltage: +5V±5%, +12V±10%
Non-operating -300 to 12,000 m
Operating -300 to 3,000 m
Altitude (relative to sea level):
Non-operating: 250 G
Operating: 70 G
Linear shock (1/2 sine pulse):
Non-operating: 5~95%
Operating: 5~90%
Humidity (non-condensing):
Non-operating: -40~70°C
Operating: 0~60°C

SAMSUNG Hard Disk Drive Product Guide 2009
Desktop HDD

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EcoGreen F3EG
2 TB / 1.5 TB

Key Features
• Max.500 GB Formatted Capacity Per Disk
• Environment friendly product with RoHS compliance
• Serial ATA 3.0 Gbps Interface Support
• Improved performance with dual-ARM based firmware
• Improved recording stability over temperature with PMR
• SATA SMART.C T.Compliant
• Advanced dynamic FOD control for best data integrity
• Automatic Acoustic Management Feature
• Intelligent compensation of external disturbance
• SATA 48-bit Address Feature
• SATA Native Command Queuing Feature
• Device Configuration Overlay Feature
• EcoSeek™

Application
Desktop PC / Digital TV / Home Media Servers

Specifications
Capacity
<table>
<thead>
<tr>
<th>32 MB</th>
<th>64 MB</th>
<th>128 MB</th>
<th>256 MB</th>
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</thead>
<tbody>
<tr>
<td>1 TB</td>
<td>HD153WI</td>
<td>HD203WI</td>
<td>HD253GI</td>
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</table>

DrivE Configuration
Form factor: 3.5"  8.9 cm x 14.0 cm  3.5"  8.9 cm x 14.0 cm
Sector size: 512 bytes
Average seek time: 8.9 ms
Access time: 9.5 ms
Idle: 0.68 W
Standby: 0.11 W
Power management: Yes

Environmental Specifications
Temperature: Operating 0~60°C
Non-operating -40~70°C
Humidity: Operating: 85% non-condensing
Non-operating: 85% non-condensing

Reliability Specifications
Drive ready time (typical): 15 sec
Buffer to host (max): 300 MB/sec
Media to buffer (max): 153 MB/sec
Data transfer rate:
Average latency: 5.56 ms
Average seek time (typical): 8.9 ms

Performance Specifications
Sector size: 512 bytes
Buffer DRAM size: 32 MB
Interface: Serial ATA 3.0 Gbps

Physical Dimension
Height: 39.1 mm
Width: 101.5 mm
Depth: 26.1 mm
Weight: 690 g

ACoustics
Idle: 2.6/2.7 Bel
Load/Unload cycles (ambient): 300,000
Non-recoverable read error: 1 sector in 10^15 bits

Power Requirements
Voltage: +5V±5%, +12V±10%
Non-operating -300 to 12,000 m
Operating -300 to 3,000 m
Altitude (relative to sea level):
Non-operating: 250 G
Operating: 70 G
Linear shock (1/2 sine pulse):
Non-operating: 5~95%
Operating: 5~90%
Humidity (non-condensing):
Non-operating: -40~70°C
Operating: 0~60°C

---
## EcoGreen F2
1.5 TB / 1 TB / 500 GB

### Specifications
- **Capacity**
  - 500 GB
  - 1 TB
  - 1.5 TB
- **Application**
  - Desktop PC / Digital TV / Home Media Servers

### Key Features
- Max. 500 GB Formatted Capacity Per Disk
- Environment friendly product with RoHS compliance
- Serial ATA 3.0 Gbps Interface Support
- Improved performance with dual-ARM based firmware
- Improved recording stability over temperature with PMR
- ATA 5 M.A.R.T. Compliant
- Advanced dynamic F/D control for best data integrity
- ATA Automatic Acoustic Management Feature
- Intelligent compensation of external disturbance
- ATA 48-bit Address Feature
- SATA Native Command Queuing Feature
- Environment friendly product with RoHS compliance
- Device Initiated SATA Power Management
- ATA S.M.A.R.T. Compliant
- Improved performance with dual-ARM based firmware
- ATA I.M.A.R.T. Compliant
- ATA Automatic Acoustic Management Feature
- ATA 48-bit Address Feature
- ATA Device Configuration Overlay Feature
- NoiseGuard™
- SilentSeek™
- EcoSeek™

### Drive Configurations
- **EcoGreen F2**
- Desktop PC / Digital TV / Home Media Servers

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Drive Configurations</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 GB</td>
<td>HD502HI</td>
</tr>
<tr>
<td>1 TB</td>
<td>HD102SI</td>
</tr>
<tr>
<td>1.5 TB</td>
<td>HD152SI</td>
</tr>
</tbody>
</table>

### Environmental Specifications
- Temperature:
  - Operating: 0~60°C
  - Non-operating: -300 to 12,000 m
- Humidity (non-condensing):
  - Operating: 5~90%RH
  - Non-operating: 5~95%RH
- Shock:
  - Non-operating: 150 G
  - Operating: 15 G
- Vibration:
  - Operating: 0.2G (1/2 sine pulse)

### Physics Specifications
- Weight:
  - 500 GB: 470 g
  - 1 TB: 610 g
  - 1.5 TB: 640 g
- Dimensions:
  - 500 GB: 147.0 x 101.5 x 26.1 mm
  - 1 TB: 150 x 110 x 30.5 mm
  - 1.5 TB: 150 x 110 x 30.5 mm

---

## EcoGreen F1DT
1 TB / 750 GB / 640 GB / 500 GB / 320 GB / 250 GB

### Specifications
- **Capacity**
  - 250 GB
  - 320 GB
  - 500 GB
  - 640 GB
  - 750 GB
  - 1 TB
- **Application**
  - Desktop PC / Digital TV / Home Media Servers

### Key Features
- Max. 334 GB Formatted Capacity per Disk
- Serial ATA 3.0 Gbps Interface Support
- Improved recording stability over temperature with PMR
- Advanced dynamic F/D control for best data integrity
- Intelligent compensation of external disturbance
- SATA Native Command Queuing Feature
- Device Initiated SATA Power Management
- Environment friendly product with RoHS compliance
- Improved performance with dual-ARM based firmware
- ATA I.M.A.R.T. Compliant
- ATA Automatic Acoustic Management Feature
- ATA 48-bit Address Feature
- ATA Device Configuration Overlay Feature
- NoiseGuard™
- SilentSeek™
- EcoSeek™

### Drive Configurations
- **EcoGreen F1DT**
- Desktop PC / Digital TV / Home Media Servers

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Drive Configurations</th>
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<tbody>
<tr>
<td>250 GB</td>
<td>HD252HI</td>
</tr>
<tr>
<td>320 GB</td>
<td>HD322HI</td>
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<tr>
<td>500 GB</td>
<td>HD502JI</td>
</tr>
<tr>
<td>640 GB</td>
<td>HD642JI</td>
</tr>
<tr>
<td>750 GB</td>
<td>HD753LI</td>
</tr>
<tr>
<td>1 TB</td>
<td>HD103UI</td>
</tr>
</tbody>
</table>

### Environmental Specifications
- Temperature:
  - Operating: 0~60°C
  - Non-operating: -300 to 12,000 m
- Humidity (non-condensing):
  - Operating: 5~90%RH
  - Non-operating: 5~95%RH
- Shock:
  - Operating: 15 G
  - Non-operating: 15 G
- Vibration:
  - Operating: 0.2G (1/2 sine pulse)

### Physics Specifications
- Weight:
  - 250 GB: 470 g
  - 320 GB: 500 g
  - 500 GB: 650 g
  - 640 GB: 750 g
  - 750 GB: 850 g
  - 1 TB: 950 g
- Dimensions:
  - 250 GB: 147.0 x 101.5 x 26.1 mm
  - 320 GB: 150 x 110 x 30.5 mm
  - 500 GB: 150 x 110 x 30.5 mm
  - 640 GB: 150 x 110 x 30.5 mm
  - 750 GB: 150 x 110 x 30.5 mm
  - 1 TB: 150 x 110 x 30.5 mm

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*Notes:*
1. 1 GB = 1 billion bytes, 1 TB = 1 trillion bytes.
2. Accessible capacity may vary as some OS uses binary numbering system for reported capacity.
3. Random seek with 30% duty cycle (Average value)
4. Random seek with 50% duty cycle (Average value)
True mobility in your imagination can be realized with desktop-compatible capacity, quietest operation, and longer battery life.
Spinpoint M7 (Enhanced)

640GB / 500GB / 320GB / 250GB / 160GB

Key Features
• Max. 320 GB formatted capacity per disk
• Serial ATA 3.0 Gbps Interface Support
• SATAlite Command Queuing Feature
• TuMP/PMR head with FOD technology
• Load/Unload Head Technology
• ATA Security Mode Feature Set

PERFORMANCE SPECIFICATIONS
• Performance Seek (typical) 2.6 Bel
• Idle (typical) 2.4 Bel

ACOUSTICS (AVERAGE SOUND POWER)
• Controlled Ramp Load/Unload 600,000
• Non-recoverable Read Error 1 sector in 10^14 bits

RELIABILITY SPECIFICATIONS
• Drive Ready Time (typical) 4 sec
• Buffer to/from Host (max.) 300 MB/sec
• Data Transfer Rate
  • Average Seek Time (typical) 12 ms
  • 5.4 sec

PERFORMANCE SPECIFICATIONS
• Sector Size 512 bytes
• Buffer DRAM Size 8 MB
• Rotational Speed 5,400 RPM
• Interface SATA 3.0 Gbps

DRIVE CONFIGURATION
• Drive Configuration 1

SPECIFICATIONS
• Specifications
  • Drive DRAM Size 8 MB
  • Interface SATA 3.0 Gbps

Specs

Spinpoint M7U

500GB / 320GB / 250GB / 160GB

Key Features
• Max. 250 GB formatted capacity per disk
• TuMP/PMR head with FOD technology
• USB 2.0 Interface Support
• Load/Unload Head Technology

PERFORMANCE SPECIFICATIONS
• Performance Seek (typical) 3.8 Bel
• Idle (typical) 4.2 Bel

ACOUSTICS (AVERAGE SOUND POWER)
• Controlled Ramp Load/Unload 600,000
• Non-recoverable Read Error 1 sector in 10^14 bits

RELIABILITY SPECIFICATIONS
• Drive Ready Time (typical) 4 sec
• Buffer to/from Host (max.) 60 MB/sec
• Media to/from Buffer (max.) 138 MB/sec

PERFORMANCE SPECIFICATIONS
• Sector Size 512 bytes
• Buffer DRAM Size 8 MB
• Rotational Speed 5,400 RPM
• Interface USB 2.0

DRIVE CONFIGURATION
• Drive Configuration 1

SPECIFICATIONS
• Specifications
  • Drive DRAM Size 8 MB
  • Interface USB 2.0

Specs
Spinpoint M7
500 GB / 400 GB / 320 GB / 250 GB

Specifications

<table>
<thead>
<tr>
<th>Capacity</th>
<th>250 GB</th>
<th>320 GB</th>
<th>400 GB</th>
<th>500 GB</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 MB</td>
<td>HK250H</td>
<td>HK320H</td>
<td>HK400H</td>
<td>HK500H</td>
</tr>
</tbody>
</table>

**DRIVE CONFIGURATION**

- **Product Code:** M7
- **Interface:** SATA
- **Rotational Speed:** 5,400 RPM
- **Buffer DRAM Size:** 8 MB
- **Sector Size:** 512 bytes
- **Average Seek Time (typical):** 12 ms
- **Maximum Media to/from Buffer Transfer Rate:** 138 MB/sec
- **Maximum Buffer to/from Host Transfer Rate:** 300 MB/sec
- **Drive Ready Time (typical):** 4 sec
- **Reliability Specifications:**
  - Non-recoverable Read Error: 1 sector in 10^14 bits
- **Acoustics (Average Sound Power):**
  - Idle (typical): 2.4 Bel
  - Performance Seek (typical): 2.6 Bel

**ACOUSTICS (AVERAGE SOUND POWER):**

- Idle: 2.4 Bel
- Performance Seek: 2.6 Bel

**ENVIRONMENTAL SPECIFICATIONS**

- **Temperature:**
  - Operating: 5–55°C
  - Non-operating: -40–70°C
- **Humidity (non-condensing):**
  - Operating: 8–90%
  - Non-operating: 5–95%
- **Linear Shock (1/2 sine pulse):**
  - Operating: 400 G
  - Non-operating: 900 G
- **Vibration (Random, 10–500Hz):** 1.5 Grms
- **Altitude (relative to sea level):**
  - Operating: -300 to 3,000 m
  - Non-operating: -400 to 15,000 m

**POWER REQUIREMENTS**

- **Voltage +5V:** ±5%
- **Spin Up Current (Max.):** 1000 mA
- **Seek (avg):** 2.5 W
- **Read/Write (avg):** 2.5 W
- **Low Power Idle (avg):** 0.85 W
- **Standby (avg):** 0.25 W
- **Sleep (avg):** 0.2 W

**PHYSICAL DIMENSION**

- **Height:** 9.5 mm
- **Width:** 69.85 mm
- **Length:** 100.0 mm
- **Weight (max.):** 105 g

**Key Features**

- Max. 250 GB formatted capacity per disk
- SATA Native Command Queuing Feature
- TurboPower Technology
- Serial ATA 3.0 6 Gbps Interface Support
- Load/Unload Head Technology
- ATA Security Mode Feature Set
- ATA SHARBT Technology
- NoiseGuard™
- EcoSeek™

**Application**

- Slim PC
- Note PC
- Car Entertainment System
- Blade Server

*Notes: Design and specifications are subject to change without prior notice.

1. 1 MB = 1,000,000 Bytes, 1 GB = 1,000,000,000 Bytes, Accessible capacity may vary as some OS uses binary numbering system for reported capacity
2. A small portion of the 8MB buffer memory is reserved for firmware use
3. Power-On to Drive Ready
4. 30% duty cycle, random seek
5. On Track Read Operation

We provide the most reliable storage solution.
### Desktop HDD

<table>
<thead>
<tr>
<th>Family</th>
<th>Model</th>
<th>Capacity (GB)</th>
<th>RPM</th>
<th>Interface</th>
<th>Buffer</th>
<th>Sector size</th>
</tr>
</thead>
<tbody>
<tr>
<td>F3</td>
<td>HD164J</td>
<td>160</td>
<td>7200</td>
<td>SATA 3.0 Gbps</td>
<td>8</td>
<td>512</td>
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<tr>
<td></td>
<td>HD254J</td>
<td>250</td>
<td>7200</td>
<td>SATA 3.0 Gbps</td>
<td>8</td>
<td>512</td>
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<td></td>
<td>HD324J</td>
<td>320</td>
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<td>8</td>
<td>512</td>
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<td>HD163J</td>
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<td>7200</td>
<td>SATA 3.0 Gbps</td>
<td>8</td>
<td>512</td>
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<td></td>
<td>HD253J</td>
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<td>HD323J</td>
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<tr>
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<td>HD502J</td>
<td>500</td>
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<td>512</td>
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<td>HD754J</td>
<td>750</td>
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<td></td>
<td>HD103J</td>
<td>1 TB</td>
<td>7200</td>
<td>SATA 3.0 Gbps</td>
<td>32</td>
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### Mobile HDD

<table>
<thead>
<tr>
<th>Family</th>
<th>Model</th>
<th>Capacity (GB)</th>
<th>RPM</th>
<th>Interface</th>
<th>Buffer</th>
<th>Sector size</th>
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</thead>
<tbody>
<tr>
<td>M7</td>
<td>HM325H</td>
<td>320</td>
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<td>8</td>
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<tr>
<td></td>
<td>HM322H</td>
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<td>8</td>
<td>512</td>
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<td>HM522H</td>
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### F1DT

<table>
<thead>
<tr>
<th>Family</th>
<th>Model</th>
<th>Capacity (GB)</th>
<th>RPM</th>
<th>Interface</th>
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<td>HD251J</td>
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<td>SATA 3.0 Gbps</td>
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<td>HD501J</td>
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### F3EG

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### F2EG

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Why Samsung Hard Disk Drive?

Our quality is based on our ACCESS TO FUNDAMENTAL TECHNOLOGY, not only for Samsung’s own R&D resources within the HDD division, but also from various R&D resources within the Samsung group. SAIT (Samsung Advanced Institute of Technology) developed Acoustic Noise Suppression Technology, which is utilized in all Samsung HDDs. SAIT also provides Head Stack, Read Channel, Spindle Motor, Servo Control System and Optical Technologies. Similarly, Samsung Electronic’s corporate R&D center developed vibration suppression technology.