

# 96HD3T-ST-SG7KE

## Test Report

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**Revision History:**

<b>Revision Date</b>	<b>Revision</b>	<b>Description</b>	<b>Creator</b>
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**Test Result Definition:**

<b>Item</b>	<b>Description</b>
<b>Pass</b>	Compatibility test properly without any problem.
<b>Fail</b>	Compatibility test can't work properly and can't meet the product spec, please describe issue to the "Remark" item detailedly.
<b>No test</b>	No test (no test tool or device or driver not ready), please write reason to the "Remark" item.
<b>N/A</b>	Spec not support.
<b>Limitation</b>	Compatibility issue Limitation, it needs formal approval mail or other formal reply from PM or Applicant or Manufacturer.

## Test Item List Summary

### Motherboard or CPU card compatibility test result

MB/SBC	Core Chipset	Result	Remark
PCE-5124	Intel Q35 GMCH+ICH9DO	<b>*Pass</b>	
PCE-5126W	Intel Cougar Point C206	<b>Pass</b>	
PCA-6010	Intel 945GC+ICH7	<b>*Pass</b>	
AIMB-258	Intel GM45 + ICH9M	<b>*Pass</b>	
AIMB-272	Sandy brige QM67	<b>Pass</b>	
ASMB-781	Intel Cougar Point C206	<b>Pass</b>	

Ps: \*Pass, Can only recognize 800GB capacity, if no UEFI BIOS. But Seagate provides tools can identify to full capacity.

### RAID Card compatibility test result

P-TD Part Number	Band	MN/PN	BIOS	Driver Rev	Result	Remark
96RC-ST-4C-P-HP	Highpoint	RR1740	2.0	2.0.7.1023	<b>Pass</b>	Win2k8/64bit
96RC-SAS-4C-PE-HP	Highpoint	RR2640X4	1.3	1.5.10.1012	<b>*Pass</b>	
96RC-SS-4C-PE4-PR	Promise	FASTTRAK TX4660	2.9.0.0039	1.3.0.99	<b>*Pass</b>	
96RC-SS-8C-PE4-PR	Promise	FASTTRAK TX8660	2.9.0.0039	1.3.0.99	<b>*Pass</b>	
96RC-SATA-2P-PE-LS	LSI	9650SE-2LP-SGL	BE9X4.08.00.004	3.0.5.56	<b>*Pass</b>	
96RC-SAS-4P-PE-LS	LSI	SAS 9240-4i	4.30.00	5.1.112.64	<b>Pass</b>	Win7/64bit
96RC-SAS-8P-PE-LS1	LSI	SAS 9260-8i	3.24.00	5.1.112.64	<b>Pass</b>	Win7/64bit

Ps: \*Pass, can't install the OS, but can be used as data storage disk. Please refer to the following detailed report

## Product Information:

<b>Advantech Part Number</b>	96HDE3T-ST-SG7K
<b>Manufacturer</b>	Seagate
<b>Model Number</b>	ST3000VX000
<b>Model Generation</b>	SV35 Series
<b>Form Factor</b>	3.5''
<b>Interface</b>	SATA
<b>Capacity</b>	3TB
<b>Cache Capacity</b>	64MB
<b>Rotation Speed (RPM )</b>	7200RPM
<b>Host Transfer Rate</b>	600MB/s
<b>Internal Transfer Rate</b>	156MB/s
<b>Number of Disks</b>	3
<b>Power On Hour (POH)</b>	24x7(8760H)
<b>Annualized Failure Rate (AFR)</b>	<1%
<b>MTBF</b>	NA
<b>Voltage Tolerance</b>	5V,12V
<b>Operating Temperature</b>	0° to 70°C
<b>Firmware</b>	CV12
<b>Country of origin</b>	Thailand
<b>Dimension (W x H x D)</b>	146.99x101.6x26.1(mm)
<b>RoHS Status (Yes/No)</b>	YES

Photo:



## 1. Test Platform

<b>MB/SBC</b>	PCE-5124		
<b>PCB version</b>	A102-1	<b>CPU</b>	Core™2 Duo 6400 (2.13GHz)
<b>BIOS version</b>	V1.23	<b>DRAM</b>	Transcend DDR2 667 2GB
<b>Core Chipset</b>	Intel Q35 GMCH+ICH9DO	<b>Backplane</b>	PCE-5B12-07
<b>VGA Chipset</b>	Chipset integrated	<b>Other</b>	

<b>MB/SBC</b>	PCE-5126W		
<b>PCB version</b>	A101-3	<b>CPU</b>	Intel Xeon E3-1275 3.40 GHZ
<b>BIOS version</b>	V1.10	<b>DRAM</b>	Apacer DDR3 1333 4GB
<b>Core Chipset</b>	Intel Cougar Point C206	<b>Backplane</b>	PCE-7B08-04
<b>VGA Chipset</b>	Cpu integrated	<b>Other</b>	

<b>MB/SBC</b>	PCA-6010		
<b>PCB version</b>	A101-2	<b>CPU</b>	Pentium Dual-Core E2160(1.80GHZ)
<b>BIOS version</b>	V1.16	<b>DRAM</b>	Transcend DDR2 667 2GB
<b>Core Chipset</b>	Intel 945GC+ICH7	<b>Backplane</b>	PCA-6114P4
<b>VGA Chipset</b>	Intel 945GC integrated	<b>Other</b>	


<b>MB/SBC</b>	AIMB-258		
<b>PCB version</b>	A101-4	<b>CPU</b>	P-M 2.00/4M/800/LF80537/T7300
<b>BIOS version</b>	258X1163	<b>DRAM</b>	Apacer DDR3 1333 2GB
<b>Core Chipset</b>	Intel GM45 + ICH9M	<b>Backplane</b>	
<b>VGA Chipset</b>	Chipset integrated	<b>Other</b>	

<b>MB/SBC</b>	AIMB-272		
<b>PCB version</b>	A101-2	<b>CPU</b>	Celeron B810/2MB/1.60GHZ
<b>BIOS version</b>	B1.11	<b>DRAM</b>	Apacer DDR3 1333 1GB
<b>Core Chipset</b>	Sandy brige QM67	<b>Backplane</b>	
<b>VGA Chipset</b>	Chipset integrated	<b>Other</b>	

<b>MB/SBC</b>	ASMB-781		
<b>PCB version</b>	A101-3	<b>CPU</b>	Intel Core i5-2400/SR00Q/3.10GHZ
<b>BIOS version</b>	S781X014	<b>DRAM</b>	Transcend DDR3 1333 8GB
<b>Core Chipset</b>	Intel Cougar Point C206	<b>Backplane</b>	
<b>VGA Chipset</b>	ASPEED AST2300	<b>Other</b>	



## 2. Test Software

Utilities	Version / Description
Power On/Off (For Reliability test)	
Passmark BurnIn Test Pro (For Reliability test)	V7.0 build 1005
HD Tach (For Performance test)	V3.0.4.0
HD Tune (For Performance test)	V2.52

## 3. Test Item

### 3.1 Function test

#### 3.1.1 Device Information

ITEM	Pass Criteria	
POST	POST should show the correct model name	
BIOS	BIOS should show the correct model name and capacity	
Device manager	Device manager should show the correct model name and capacity	
HD TUNE	HD TUNE should show the correct model name and capacity,FW,transfer mode.	
MB/SBC	Result	Note
PCE-5124	<b>*Pass</b>	*Pass, Can only recognize 800GB capacity , if no UEFI BIOS.
PCE-5126W	<b>Pass</b>	
PCA-6010	<b>*Pass</b>	
AIMB-258	<b>*Pass</b>	
AIMB-272	<b>Pass</b>	
ASMB-781	<b>Pass</b>	

#### 3.1.2 OS installation

Pass Criteria: Windows OS can be installed and boot into OS properly.

MB/SBC:ASMB-781

OS	Version	Result	Note
<b>Windows XP</b>	Windows XP professional edition 32bit with SP3	<b>Pass</b>	Use tools" Seagate DiscWizard"
<b>Windows XP</b>	Windows XP professional edition 64bit with SP2	<b>Pass</b>	Use tools" Seagate DiscWizard"

Windows 7	Windows 7 Ultimate 32bit	Pass	Use tools" Seagate DiscWizard"
Windows 7	Windows 7 Ultimate 64bit	Pass	Need UEFI BIOS
Windows 2008	Windows server 2008 Standard 32bit with SP2	Fail	Can only recognize 2TB capacity
Windows 2008	Windows server 2008 Standard 64bit with SP2	Pass	Need UEFI BIOS

### 3.1.3 Read/Write

Pass Criteria: Run NFCtest 3 rounds from one partition to another under windows.

MB/SBC	Result	Note
PCE-5124	Pass	
PCE-5126W	Pass	
PCA-6010	Pass	
AIMB-258	Pass	
AIMB-272	Pass	
ASMB-781	Pass	

### 3.2 Raid card compatibility test

Pass Criteria: Can build RAID and installed OS, and run power on/off 10 times successfully.

MB/SBC:ASMB-781

Raid Card	Raid Level	HDD information	In Slot	Result	
				System disk (win7/64bit)	Data disk (win7/32bit; winxp/64bit)
Highpoint RR1740	RAID 1	Seagate ST3000VX000 *2	PCI2	Pass (win 2k8 64bit)	Pass
Highpoint RR2640X4	RAID 1	Seagate ST3000VX000 *2	PCIE3(PCIEX4)	Fail	Pass
Promise TX4660	RAID 1	Seagate ST3000VX000 *2	PCIE3(PCIEX4)	Fail	Pass
Promise TX8660	RAID 1	Seagate ST3000VX000 *2	PCIE3(PCIEX4)	Fail	Pass
LSI 9650SE-2LP	RAID 1	Seagate ST3000VX000 *2	PCIE7(PCIEX1)	Fail	Pass
LSI SAS 9240-4i	RAID 10	Seagate ST3000VX000 *2+ ST2000VX000*2	PCIE6(PCIEX16)	Pass	Pass
LSI SAS 9260-8i	RAID 1	Seagate ST3000VX000 *2	PCIE4(PCIEX16)	Pass	Pass

## 3.3 Performance test

### 3.3.1 HD Tach

Pass Criteria: Run software HD Tach version 3.0.4.0, Recording the benchmark score and compare the score with other product. The HDD performance can reach the average value;

MB/SBC	HD Tach version 3.0.4.0				Result
	Burst Speed (MB/s)	Average Read (MB/s)	CPU Utilization	Random Access Time (ms)	
PCE-5124	202.2	181.3	9%	13.7	Pass
PCE-5126W	365.4	192.4	2%	10.7	Pass
PCA-6010	219.5	190.4	4%	10.8	Pass
AIMB-258	225.9	192.2	5%	10.9	Pass
AIMB-272	347.5	190.2	8%	10.9	Pass
ASMB-781	351.7	192.3	3%	10.9	Pass

### 3.3.2 HD Tune

Pass Criteria: Run software HD Tune version 2.52, Recording the benchmark score and compare the score with other product. The HDD performance can reach the average value;

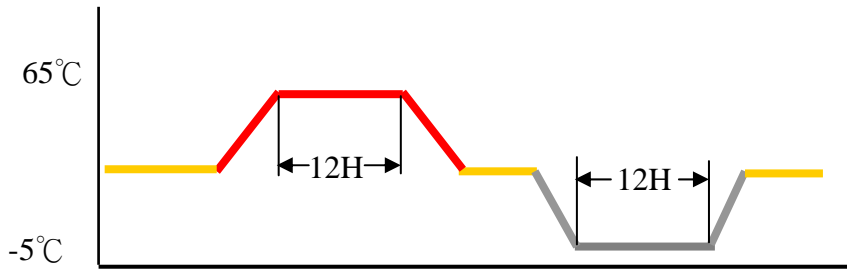
MB/SBC	HD Tune version 2.52						Result
	Minimum Transfer Rate (MB/s)	Maximum Transfer Rate (MB/s)	Average Transfer Rate (MB/s)	Access Time (ms)	CPU Usage	Burst Speed (MB/s)	
PCE-5124	137.5	172.7	163	11.7	13.9%	173.7	Pass
PCE-5126W	140.2	214.6	183.1	10.9	2.9%	282	Pass
PCA-6010	117.2	189.9	179.7	10.7	10.5%	191.2	Pass
AIMB-258	115.6	185.9	177.5	11	10.8%	186.2	Pass
AIMB-272	112	214.6	182.4	11	16.1%	246.1	Pass
ASMB-781	140.2	214.6	183.1	11	6.2%	280.2	Pass

### 3.4 Reliability test

MB/SBC:PCA-6010

OS: WINXP/WIN7

Test Environment:-5°C~65°C



Item	Pass Criteria	Result
Power on/off	Power on/off 100 times, successful boot rate 100%;	Pass
Burn_in V7.0	Set DISK loading 100%, all disks file size 15%; The result of all disks should be Passed when running Burn_in V7.0 for 12 hours.	Pass

## 4. Appendix

### 4.1 OS partition format

OS	System disk	Data disk	Remark
WIN XP 32bit	MBR	MBR	
WIN XP 64bit	MBR	GPT	
WIN 7 32bit	MBR	GPT	
WIN 7 64bit	GPT(need UEFI bios)	GPT	
WIN 2008 32bit	MBR	GPT	
WIN 2008 64bit	GPT(need UEFI bios)	GPT	

Ps: 1.MBR can access the disk capacity of the largest 2.19TB;

2.GPT can access the disk capacity of the largest 9.4ZB(=94 亿 TB);

## 4.2 3TB Disk & OS

OS	3TB		Remark
	Boot	Data	
WIN XP 32bit	MBR(to recognize Two disk≈3T	MBR(to recognize Two disk≈3T	
WIN XP 64bit	MBR/GPT(to recognize two disk≈3T	GPT(to recognize≈3T	
WIN 7 32bit	MBR(to recognize Two disk≈3T	GPT(to recognize≈3T)	
WIN 7 64bit	GPT(to recognize≈3T) need UEFI BIOS	GPT(to recognize≈3T)	
WIN 2008 32bit	MBR(to recognize≈ 2T)	GPT(to recognize≈3T)	
WIN 2008 64bit	GPT(to recognize≈3T) need UEFI BIOS	GPT(to recognize≈3T)	

- Ps: 1.当用于系统盘使用时，除了 Win7/Win2k8 64 bit 在 UEFI BIOS 条件下，其他都需要使用希捷提供的工具，才能显示完整的容量，除了 Win 2K8 32bit（工具不支持）。
- 2.作为数据盘，除了 Win XP 32bit/64 bit 需要借助希捷工具显示完整的容量，其他 OS 都能正常转换成 GPT.
- 3.目前仅了解希捷有提供 Support 3TB 的工具。