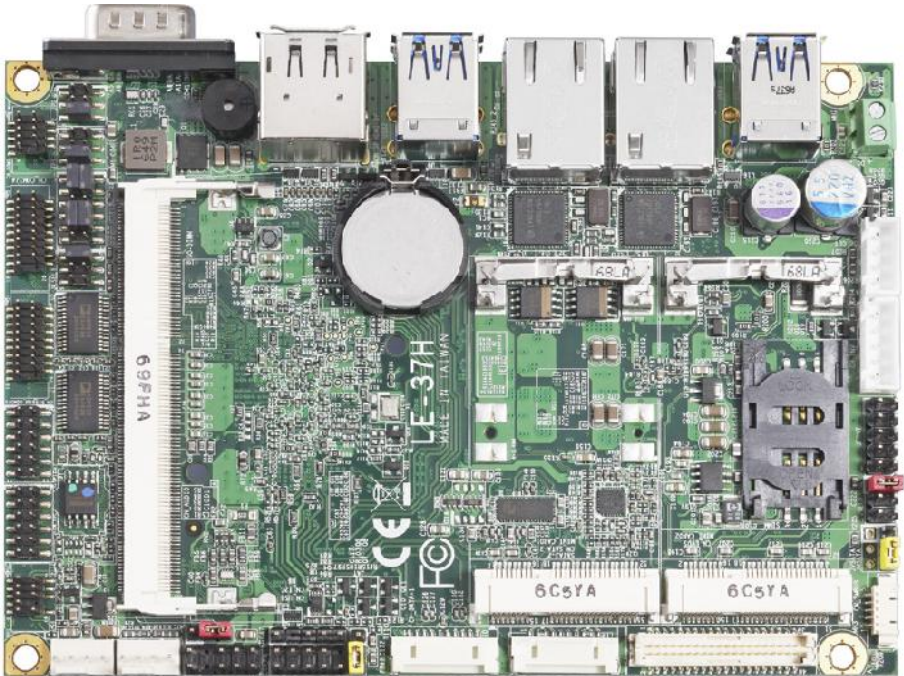


Product Test Report



Product Name	LE-37H
Product Version	A
Issued Date	2017.07.07
Report Edition	1.0
BIOS Version	1.0
Testing Engineer	Rick
Check Engineer	Daniel

REVISION HISTORY

DATE	REVISION NO.	PAGE	DESCRIPTONS
2017.07.07	Ver. 1.0	44	Initial Release

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1. Function test

1.1 Hardware functions

Base Function Test

Item	Description	Result
1	Power Button	PASS
2	Reset	PASS
3	Power LED	PASS
4	HDD LED	PASS
5	SYS FAN	PASS
6	CPU FAN	PASS
7	PS2	PASS
8	CN_AUDIO	PASS
9	LAN1	PASS
10	LAN2	PASS
11	DDR3L	PASS
12	SATA1/2	PASS
13	USB2.0 1/2	PASS
14	USB3.0 1/2/3/4	PASS
15	COM 1/2/3/4/5/6	PASS
16	HDMI	PASS
17	Display Port	PASS
18	LVDS	PASS
19	MINI_CRAD1	PASS
20	MINI_CRAD2	PASS
21	SD slot	PASS

Jumper

Item	Description	Result
1	JRTC	PASS
2	JAT	PASS
3	JMSATA	PASS
4	JVLCD	PASS
5	JP1	PASS
6	JP2	PASS
7	JCSEL1	PASS
8	JCSEL2	PASS

1.2 BIOS function

Item	Description	Result	Remark
1	Press 'Del' to run Setup Utility	PASS	
2	Ctrl-Alt-Del – Soft-Reboot	PASS	
3	Selection Language	PASS	
4	Save & Exit Setup	PASS	
5	Date & Time Setting	PASS	
6	Numlock	PASS	
7	HD Audio Support	PASS	
8	Chipset SATA	PASS	
9	USB BIOS Support	PASS	DOS
10	Serial Port	PASS	
11	SCC SD Card Support	PASS	
12	Set Supervisor Password	PASS	
13	Power On Password	PASS	

Item	Description	Result	Remark
14	Boot Type Order	PASS	
15	Hard Disk Drive	PASS	

1.3 Driver

CD edition : IPCLi1-1.7

1. Windows 10 64 bit Driver Test

Item	Description	Result	Version
1	Chipset Driver	PASS	10.1.1
2	Graphic Driver	PASS	21.20.16.4550
3	Audio Driver	PASS	6.0.1.8036
4	LAN Driver	PASS	12.15.184.0

2. Compatibility test

2.1 CPU Test

Test environment:

OS: Windows 10 64-bit

Test program : PC MARK 2005

Spec	CPU Speed	Family	Processor	MAX TDP	Smart Cache	Result
SR2YB	1.10 GHz	Celeron	N3350	6 W	2 MB	PASS
SR2Y9	1.10 GHz	Pentium	N4200	6 W	2 MB	PASS

2.2 Memory Test

Test environment:

OS: Windows 10 64-bit

Test program : PC MARK 2005

Manufacturer	Chip	Frequency	Capacity Mbytes	Memory test Source
Kingston KVR16LS11/8	Micro HSN77 D9RVX	DDR3L 1600	8 GB	PASS
Kingston KVR16LS11/4	NANYA NT5CC512M8BN-DI	DDR3L 1600	4 GB	PASS
acpi CMA5-GA01BA L01A00	SK hynix H5TC4GB3AFR	DDR3L 1600	8 GB	PASS
TLA AD3SHT4GG5 WB-CKGBL/DL	SK hynix H5TC4GB3BFR /DFR	DDR3L 1600	4 GB	PASS
TLA AD3SHT8GSA WB-CKGBL/DL	SK hynix H5TC4GB3BFR /DFR	DDR3L 1600	8 GB	PASS

2.3 HDMI Graphic Quality Test

Test environment:

OS Windows 10 64-bit

Driver version : 21.20.16.4550

Resolution	Color	Result	Remark
800 x 600	16 /32bit	PASS	
1024 x 768	16 /32bit	PASS	
1152 x 864	16 /32bit	PASS	
1280 x 600	16 /32bit	PASS	
1280 x 720	16 /32bit	PASS	
1280 x 768	16 /32bit	PASS	
1280 x 800	16 /32bit	PASS	
1280 x 960	16 /32bit	PASS	
1280 x 1024	16 /32bit	PASS	
1360 x 768	16 /32bit	PASS	
1366 x 768	16 /32bit	PASS	
1400 x 1050	16 /32bit	PASS	
1440 x 900	16 /32bit	PASS	
1600 x 900	16 /32bit	PASS	
1600 x 1200	16 /32bit	PASS	
1680 x 1050	16 /32bit	PASS	
1792 x 1344	16 /32bit	PASS	
1856 x 1392	16 /32bit	PASS	
1920 x 1080	16 /32bit	PASS	
1920 x 1200	16 /32bit	PASS	
1920 x 1440	16 /32bit	PASS	

2048 x 1152	16 /32bit	PASS	
2048 x 1152	16 /32bit	PASS	
2048 x 1536	16 /32bit	PASS	
2560 x 1440	16 /32bit	PASS	
2560 x 1600	16 /32bit	PASS	
2560 x 1920	16 /32bit	PASS	
2560 x 2048	16 /32bit	PASS	
3840 x 2160	16 /32bit	PASS	

2.4 Display Port Graphic Quality Test

Test environment:

OS Windows 10 64-bit

Driver version : 21.20.16.4550

Resolution	Color	Result	Remark
800 x 600	16 /32bit	PASS	
1024 x 768	16 /32bit	PASS	
1152 x 864	16 /32bit	PASS	
1280 x 600	16 /32bit	PASS	
1280 x 720	16 /32bit	PASS	
1280 x 768	16 /32bit	PASS	
1280 x 800	16 /32bit	PASS	
1280 x 960	16 /32bit	PASS	
1280 x 1024	16 /32bit	PASS	
1360 x 768	16 /32bit	PASS	

1366 x 768	16 /32bit	PASS	
1400 x 1050	16 /32bit	PASS	
1440 x 900	16 /32bit	PASS	
1600 x 900	16 /32bit	PASS	
1600 x 1200	16 /32bit	PASS	
1680 x 1050	16 /32bit	PASS	
1792 x 1344	16 /32bit	PASS	
1856 x 1392	16 /32bit	PASS	
1920 x 1080	16 /32bit	PASS	
1920 x 1200	16 /32bit	PASS	
1920 x 1440	16 /32bit	PASS	
2048 x 1152	16 /32bit	PASS	
2048 x 1536	16 /32bit	PASS	
2560 x 1600	16 /32bit	PASS	
2560 x 1920	16 /32bit	PASS	
2560 x 2048	16 /32bit	PASS	
3840 x 2160	16 /32bit	PASS	

2.5 Audio

Test environment:

OS Windows 10 64-bit

Driver version : 6.0.1.8036

Item	Description	Result	Remark
1	2.1CH	PASS	
2	Microphone	PASS	

OS Ubuntu 16.04

Item	Description	Result	Remark
1	2.1CH	PASS	

2.6 HDD Test

Test environment:

OS Windows 10 64-bit

HDD Model	Interface	Capacity	HDD Size Detect	HDD Data Transfer	HDD LED Check
Western Digital WD800BEVS-00RST0	SATA	80 GB	PASS	PASS	PASS
Western Digital WD3200BEKT-00F3T0	SATA	320 GB	PASS	PASS	PASS
TOSHIBA DT01ACA200	SATA	2.0 TB	PASS	PASS	PASS
Western Digital WD10EALX-009BA0	SATA	1.0 TB	PASS	PASS	PASS
INTEL SSDSC2CT060A3	SSD	64 GB	PASS	PASS	PASS
Transcend TS128GSSD320	SSD	128 GB	PASS	PASS	PASS
INTEL SSDSC2CT060A3	SSD	64 GB	PASS	PASS	PASS
MemoRight MRSAJ6C064GC125C00	SSD	64 GB	PASS	PASS	PASS
acpi CSC064GR5-G710A00D	mSATA	64 GB	PASS	PASS	PASS

2.7 DVD-ROM Test

Test environment:

OS Windows 10 64-bit

DVD-ROM Model	Interface	DVD-ROM Detect	DVD-ROM Data Transfer	Play DVD
ASUS DRW-1814BLT	SATA	PASS	PASS	PASS
ASUS DRW-24D1ST	SATA	PASS	PASS	PASS
PIONEER DVR-S19LBK	SATA	PASS	PASS	PASS
LITE-ON iHES312	SATA	PASS	PASS	PASS
LITEON DVD eTAU108	USB	PASS	PASS	PASS

2.8 USB Test

1. Windows 10 64-bit

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
DVD-ROM	PASS	
USB Mass storage	PASS	

2. Ubuntu 16.04

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
DVD-ROM	PASS	
USB Mass storage	PASS	

2.9 Serial Port Test

1. Windows 10 64-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	RS-232 Mouse Test	PASS	

2.10 PS2 Keyboard 、 Mouse Test

1. Windows 10 64-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

2. Ubuntu 16.04

Item	Description	Result	Remark
1	Device Manager Check	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

2.11 LAN Test

Data Transfer Test environment:

-CAT 6 UTP 100M

-8 HR. continuous

1. Windows 10 64-bit

Item	Description	Result	Remark
1	Device Manager Check	PASS	(IPERF)
2	Data Transfer Test	PASS	(IPERF)

2. Ubuntu 16.04

Item	Description	Result	Remark
1	Device Manager Check	PASS	

2.12 Power Supply & Adapter Test

Item	Type	Description	Result	Remark
1	ATX Power	COOLER MASTER RS-390-PMSR-A3 390W	PASS	
2	Adapter	LI SHIN 0219B1280 80W	PASS	
3	Adapter	LI SHIN 0227B19120 120W	PASS	
4	Adapter	FSP GROUP INC. FSP120-AAA 120W	PASS	

2.13 OS Install

Item	Description	Result	Remark
1	Windows 10 64 bit	PASS	
2	Ubuntu 16.04 (4.4.0-31-generic)	PASS	

2.14 PCI Express Mini Card

Motherboard	PCI Express mini card	Mini Card 1	Mini Card 2	Remark
LE-37H	MPX-210D	PASS	PASS	WIN 10
	MPX-210D2	NO SUPPLY	NO SUPPLY	WIN 10
	MPX-350	PASS	PASS	WIN 10
	MPX-574D	PASS	PASS	WIN 10
	MPX-574D2	NO SUPPLY	NO SUPPLY	WIN 10
	MPX-643	PASS	PASS	WIN 10
	MPX-750	NO SUPPLY	NO SUPPLY	WIN 10

	MPX-885	NO SUPPLY	NO SUPPLY	WIN 10
	MPX-954	PASS	PASS	WIN 10
	MPX-954E	PASS	PASS	WIN 10
	MPX-4232	PASS	PASS	WIN 10
	MPX-6864	NO SUPPLY	NO SUPPLY	WIN 10
	MPX-7202	PASS	PASS	WIN 10
	MPX-24794G2	NO SUPPLY	NO SUPPLY	WIN 10
	MPX-25858	NO SUPPLY	NO SUPPLY	WIN 10
	mSATA	PASS	NO SUPPLY	WIN 10

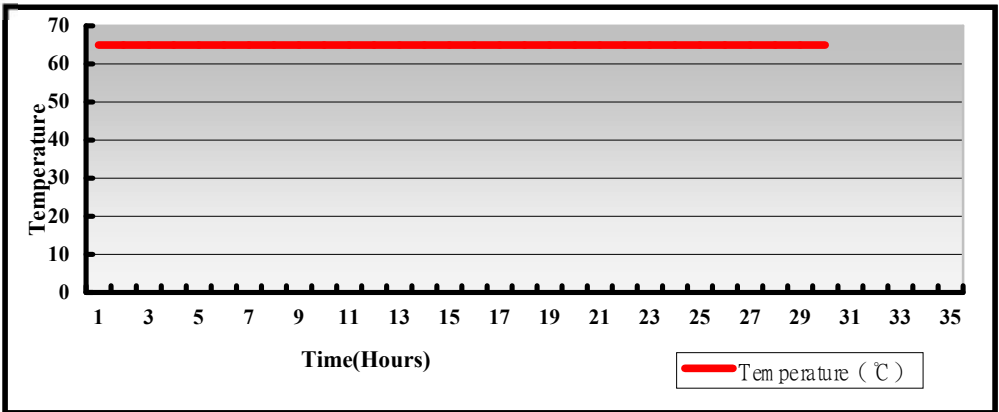
3. Environmental test

3.1 Temperature Test

Hardware Device list:

System Board	LE-37H include Heat Spreader
CPU	Intel(R) Pentium(TM) N4200 1.10GHz
Memory	acpi DDR3L 1600 8GB (SK hynix H5TC4GB3AFR)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Operating OS	Windows 10 64-bit
Test Equipment	THERMOTRON 2800 Programmer/Controller
Test Program	3DMark 2006 + Prime95

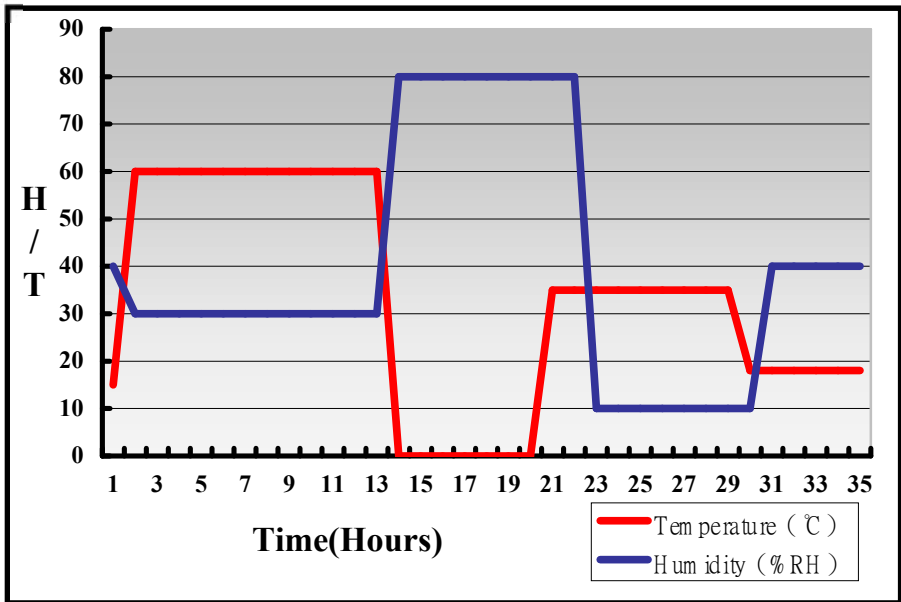
Test Result:



Hardware Device list:

System Board	LE-37H include Heat Spreader
CPU	Intel(R) Pentium(TM) N4200 1.10GHz
Memory	Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Operating OS	Windows 10 64-bit
Test Equipment	THERMOTRON 2800 Programmer/Controller
Test Program	3DMark 2006 + Prime95

Test Result:



Boot up Test:

Hardware Device list:

System Board	LE-37H include Heat Spreader
CPU	Intel(R) Pentium(TM) N4200 1.10GHz
Memory	acpi DDR3L 1600 8GB (SK hynix H5TC4GB3AFR)
HDD	Western Digital WD3200BEKT-00F3T0 320GB

Temperature	Result	Remark
-40°C	PASS	50 Times.
85°C	PASS	50 Times

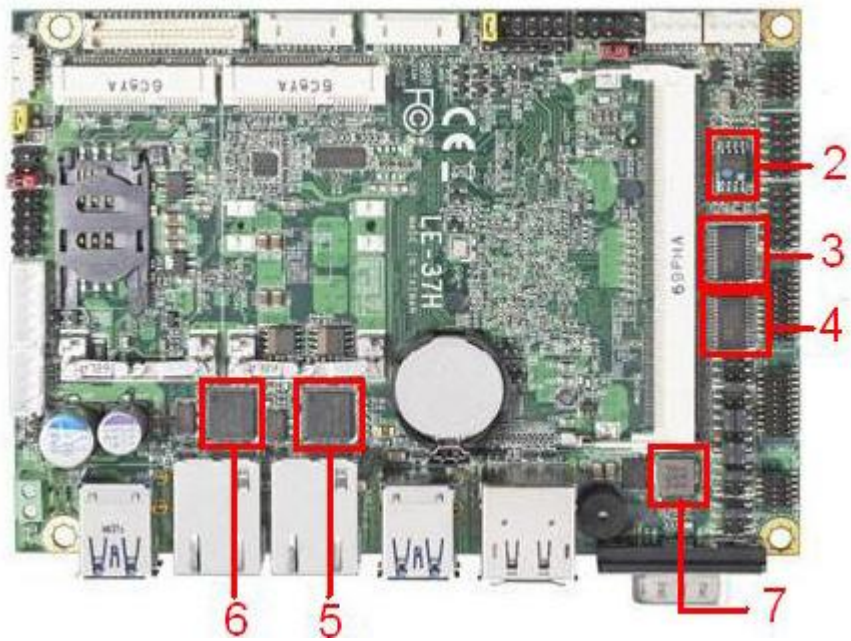
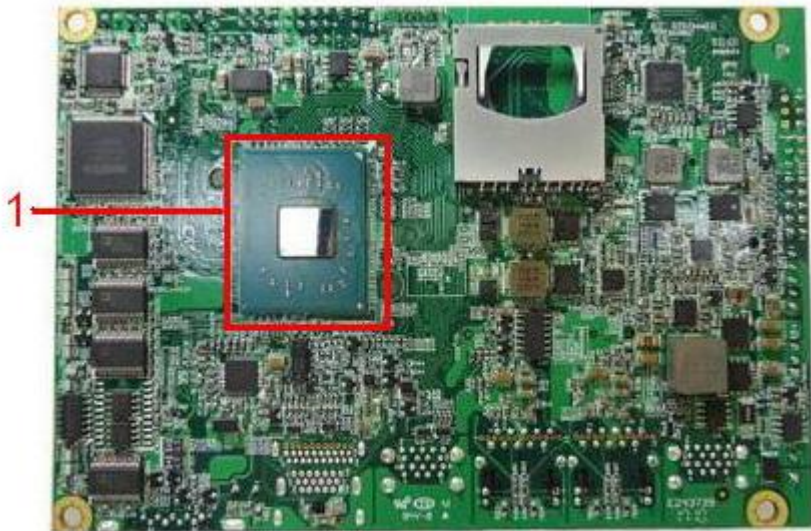
3.2 Thermal measurements at various points on the board

Test Environment:

CPU	Intel(R) Pentium(TM) N3350 1.10GHz
Memory	acpi DDR3L 1600 8GB (SK hynix H5TC4GB3AFR)
HDD	Western Digital WD3200BEKT-00F3T0 320GB
Adapter	FSP FSP120-AAA
Operating System	Windows 10 64-bit
Test Program	BurnIn 7.1 Pro

Test Result:

Item	Environmental temperature	23°C
1	CPU	46.6°C
2	SPI	47.2°C
3	U1	45.1°C
4	U2	45°C
5	U12	43.3°C
6	U15	44°C
7	L1	43.6°C



4. Reliability Test

4.1 Power Consumption Test

1. Test Environment:

Motherboard	LE-37H include Heat Spreader
CPU	Intel(R) Pentium(TM) N4200 1.10GHz
Memory	acpi DDR3L 1600 8GB (SK hynix H5TC4GB3AFR)
HDD	Western Digital WD3200BEKT-00F3T0 320GB

12V Adapter: LI SHIN 0219B1280

19V Adapter: FSP FSP120-AAA

Voltage	MS-DOS Boot up		Windows 10 64-bit 3D MARK VANTAGE + PRIME95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	0.74	8.88	1.8	21.6
19V	0.5	9.5	1.2	22.8

1. a. Test Environment:

The same as above but with LCD

Display Panel	AUO M170EG01 17”LCD
----------------------	---------------------

12V Adapter: LI SHIN 0219B1280

19V Adapter: FSP FSP120-AAA

Voltage	MS-DOS Boot up		Windows 10 64-bit 3D MARK VANTAGE + PRIME95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.73	32.76	3.76	45.12
19V	1.8	34.2	2.37	45.03

2. Test Environment:

Motherboard	LE-37H include Heat Spreader
CPU	Intel(R) Celeron (TM) N3350 1.10GHz
Memory	acpi DDR3L 1600 8GB (SK hynix H5TC4GB3AFR)
HDD	Western Digital WD3200BEKT-00F3T0 320GB

12V Adapter: LI SHIN 0219B1280

19V Adapter: FSP FSP120-AAA

Voltage	MS-DOS Boot up		Windows 10 64-bit 3D MARK VANTAGE + PRIME95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	0.76	9.12	1.52	18.24
19V	0.51	9.69	0.98	18.62

2. a. Test Environment:

The same as above but with LCD

Display Panel	AUO M170EG01 17”LCD
----------------------	---------------------

12V Adapter: LI SHIN 0219B1280

19V Adapter: FSP FSP120-AAA

Voltage	MS-DOS Boot up		Windows 10 64-bit 3D MARK VANTAGE + PRIME95	
	Current (A)	Power (W)	Current (A)	Power (W)
12V	2.71	32.52	3.34	40.08
19V	1.85	35.15	2.11	40.09

5. Performance Test

5.1 3D MARK2003

Windows 10 64-bit

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB	PASS	8368

Windows 10 64-bit

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 4GB (NANYA NT5CC512M8BN-DI) TOSHIBA DT01ACA200 2TB	PASS	7959

Windows 10 64-bit

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Celeron(TM) N3350 1.10GHz acpi DDR3L 1600 8GB (SK hynix H5TC4GB3AFR) TOSHIBA DT01ACA200 2TB	PASS	8502

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Celeron(TM) N3350 1.10GHz TLA DDR3L 1600 4GB (SK hynix H5TC4GB3BFR/DFR) TOSHIBA DT01ACA200 2TB	PASS	7865

Weighted Suite	Test Environment	Result	Remark
3DMARK2003 Scores	Intel(R) Celeron(TM) N3350 1.10GHz TLA DDR3L 1600 8GB (SK hynix H5TC4GB3BFR/DFR) TOSHIBA DT01ACA200 2TB	PASS	8390

5.2 3D MARK2006

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB	PASS	3456
2	SM2.0 Source		PASS	1172
3	HDR/SM3.0 Source		PASS	1488
4	CPU Source		PASS	1780

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 4GB (NANYA NT5CC512M8BN-DI) TOSHIBA DT01ACA200 2TB	PASS	3383
2	SM2.0 Source		PASS	1248
3	HDR/SM3.0 Source		PASS	1417
4	CPU Source		PASS	1783

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	Intel(R) Celeron(TM) N3350 1.10GHz acpi DDR3L 1600 8GB (SK hynix H5TC4GB3AFR) TOSHIBA DT01ACA200 2TB	PASS	3531
2	SM2.0 Source		PASS	1204
3	HDR/SM3.0 Source		PASS	1500
4	CPU Source		PASS	1801

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	Intel(R) Celeron(TM) N3350 1.10GHz TLA DDR3L 1600 4GB (SK hynix H5TC4GB3BFR/DFR) TOSHIBA DT01ACA200 2TB	PASS	3365
2	SM2.0 Source		PASS	1128
3	HDR/SM3.0 Source		PASS	1450
4	CPU Source		PASS	1795

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	Intel(R) Celeron(TM) N3350 1.10GHz TLA DDR3L 1600 8GB (SK hynix H5TC4GB3BFR/DFR) TOSHIBA DT01ACA200 2TB	PASS	3504
2	SM2.0 Source		PASS	1210
3	HDR/SM3.0 Source		PASS	1488
4	CPU Source		PASS	1799

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK Source	Intel(R) Pentium(TM) N4200 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB	PASS	2339
2	SM2.0 Source		PASS	7571
3	HDR/SM3.0 Source		PASS	910
4	CPU Source		PASS	3048

5.3 3D MARK VANTAGE

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Celeron(TM) N3350 1.10GHz	PASS	P1927
2	GPU SCORE	Kingston DDR3L 1600 8GB	PASS	1708
3	CPU SCORE	(Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB	PASS	3131

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Pentium(TM) N4200 1.10GHz	PASS	P2644
2	GPU SCORE	Kingston DDR3L 1600 8GB	PASS	2204
3	CPU SCORE	(Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB	PASS	6587

5.4 3D MARK (TIME SPY)

Windows 10 64-bit

Item	Weighted Suite	Test Environment	Result	Remark
1	3DMARK SCORE	Intel(R) Pentium(TM) N4200 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB	PASS	150
2	Graphics SCORE		PASS	131
3	CPU SCORE		PASS	963

5.5 PC MARK2002

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	15013
3	HDD test Source	PASS	3752

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 4GB (NANYA NT5CC512M8BN-DI) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	14821
3	HDD test Source	PASS	4772

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz acpi DDR3L 1600 8GB (SK hynix H5TC4GB3AFR) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	15556
3	HDD test Source	PASS	4621

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz TLA DDR3L 1600 4GB (SK hynix H5TC4GB3BFR/DFR) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	14244
3	HDD test Source	PASS	5133

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz TLA DDR3L 1600 8GB (SK hynix H5TC4GB3BFR/DFR) TOSHIBADT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	15494
3	HDD test Source	PASS	4497

Test Environment
Intel(R) Celeron(TM) N4200 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	CPU test Source	PASS	N/A
2	Memory test Source	PASS	16091
3	HDD test Source	PASS	4678

5.6 PC MARK2004

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	4988
4	Graphic test Source	PASS	6617
5	HDD test Source	PASS	N/A

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 4GB (NANYA NT5CC512M8BN-DI) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	5101
4	Graphic test Source	PASS	6421
5	HDD test Source	PASS	N/A

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz acpi DDR3L 1600 8GB (SK hynix H5TC4GB3AFR) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	5348
4	Graphic test Source	PASS	6638
5	HDD test Source	PASS	N/A

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz TLA DDR3L 1600 4GB (SK hynix H5TC4GB3BFR/DFR) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	5109
4	Graphic test Source	PASS	6447
5	HDD test Source	PASS	N/A

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz TLA DDR3L 1600 8GB (SK hynix H5TC4GB3BFR/DFR) TOSHIBADT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	5320
4	Graphic test Source	PASS	6610
5	HDD test Source	PASS	N/A

Test Environment
Intel(R) Pentium(TM) N4200 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	PC Mark Source	PASS	N/A
2	CPU test Source	PASS	N/A
3	Memory test Source	PASS	5499
4	Graphic test Source	PASS	7086
5	HDD test Source	PASS	N/A

5.7 PC MARK2005

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	System test Source	PASS	N/A
2	CPU test Source	PASS	4735
3	Memory test Source	PASS	4339
4	Graphic test Source	PASS	N/A
5	HDD test Source	PASS	N/A

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 4GB (NANYA NT5CC512M8BN-DI) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	System test Source	PASS	N/A
2	CPU test Source	PASS	4830
3	Memory test Source	PASS	4393
4	Graphic test Source	PASS	N/A
5	HDD test Source	PASS	N/A

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz acpi DDR3L 1600 8GB (SK hynix H5TC4GB3AFR) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	System test Source	PASS	N/A
2	CPU test Source	PASS	4849
3	Memory test Source	PASS	4417
4	Graphic test Source	PASS	N/A
5	HDD test Source	PASS	N/A

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz TLA DDR3L 1600 4GB (SK hynix H5TC4GB3BFR/DFR) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	System test Source	PASS	N/A
2	CPU test Source	PASS	4845
3	Memory test Source	PASS	4382
4	Graphic test Source	PASS	N/A
5	HDD test Source	PASS	N/A

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz TLA DDR3L 1600 8GB (SK hynix H5TC4GB3BFR/DFR) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	System test Source	PASS	N/A
2	CPU test Source	PASS	4828
3	Memory test Source	PASS	4395
4	Graphic test Source	PASS	N/A
5	HDD test Source	PASS	N/A

Test Environment
Intel(R) Pentium (TM) N4200 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	System test Source	PASS	N/A
2	CPU test Source	PASS	6452
3	Memory test Source	PASS	4630
4	Graphic test Source	PASS	N/A
5	HDD test Source	PASS	N/A

5.8 x264 FHD Benchmark

Test Environment
Intel(R) Pentium (TM) N4200 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Result	Remark
1	PASS	8.1

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Result	Remark
1	PASS	3.9

5.9 Fritz Chess Benchmark

Test Environment
Intel(R) Pentium (TM) N4200 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	Relative speed	PASS	10.22
2	Kilo nodes per second	PASS	4903

Test Environment
Intel(R) Celeron(TM) N3350 1.10GHz Kingston DDR3L 1600 8GB (Micro HSN77 DR9VX) TOSHIBA DT01ACA200 2TB

Windows 10 64-bit

Item	Weighted Suite	Result	Remark
1	Relative speed	PASS	4.91
2	Kilo nodes per second	PASS	2355

5.10 Storage Performance

5.10.1 HDD

Test environment:

OS Windows 7

Program (HD Tune)

HDD Model	Interface	Capacity	Average	Burst Rate	Access Time
Western Digital WD800BEVS-00RST0	SATA	80 GB	34.7 MB/sec	50.4 MB/sec	17.7 ms
Western Digital WD3200BEKT-00F3T0	SATA	320 GB	64.1 MB/sec	70.8 MB/sec	15.1 ms
Western Digital WD10EALX-009BA0	SATA	1 TB	105.5 MB/sec	81.4 MB/sec	13.7 ms
TOSHIBA DT01ACA200	SATA	2 TB	122.7 MB/sec	94.7 MB/sec	13.5 ms
MemoRight MRSAJ6C064GC125C00	SSD	64 GB	119.5 MB/sec	40 MB/sec	0.4 ms
INTEL SSDSC2CT060A3	SSD	64 GB	143.9 MB/sec	57.6 MB/sec	0.5 ms

HDD Model	Interface	Capacity	Average	Burst Rate	Access Time
Transcend TS128GSSD320	SSD	128 GB	171.5 MB/sec	73.2 MB/sec	0.3 ms
acpi CSC064GR5-G710A00D	mSATA	64 GB	162.8 MB/sec	57.4 MB/sec	0.3 ms
BUFFALO BUF-HD-HXU3(B)	USB 3.0	1 TB	103.8 MB/sec	50.6 MB/sec	14.9 ms
KINGSTON DT HyperX 3.0	USB 3.0	64 GB	213.6 MB/sec	79.2 MB/sec	0.5 ms
TOSHIBA TransMemory-Ex2	USB 3.0	64 GB	160.9 MB/sec	29.7 MB/sec	0.9 ms
Silicon-Power	USB 2.0	4 GB	1.1 MB/sec	1.1 MB/sec	0.9 ms
INNODISK 87SD	SD Card	8 GB	17.5 MB/sec	12.9 MB/sec	1.4 ms
Transcend 03SD8G	SD Card	8 GB	8.6 MB/sec	6.5 MB/sec	3.6 ms

5.10.2 DVD-ROM

Test environment:

OS Windows 7

Program (NERO)

DVD-ROM Model	Interface	Average Speed	Full Read	Burst Rate	DVD
ASUS DRW-1814BLT	SATA	7.57 x	165 ms	33 MB/s	16 x
ASUS DRW-24D1ST	SATA	10.14 x	152 ms	35 MB/s	16 x
PIONEER DVR-S19LBK	SATA	10.26 x	184 ms	31 MB/s	16 x

LITE-ON iHES312	SATA	10.05 x	146 ms	33 MB/s	16 x
LITEON DVD eTAU108	USB	5.14 x	201 ms	18 MB/s	16 x