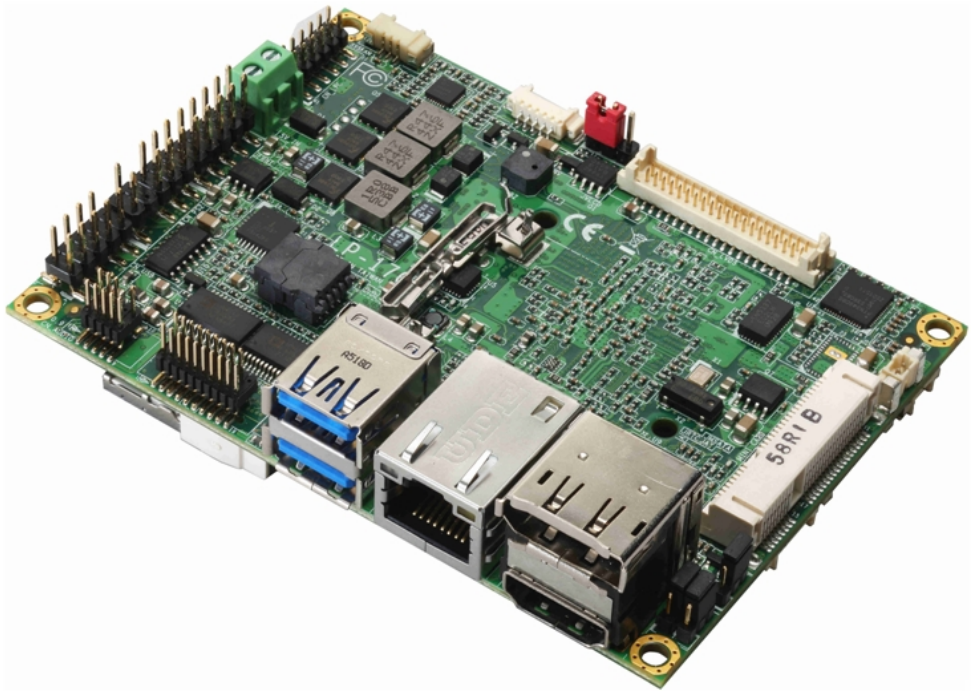


Product Test Report



Product Name	LP-176
Product Version	A
Issued Date	2016.8.15
Report Edition	1.0
BIOS Version	1.0
Testing Engineer	PERRY
Check Engineer	DANIEL

REVISION HISTORY

DATE	REVISION NO.	PAGE	DESCRIPTONS
2016.08.15	Ver. 1.0	39	Initial Release

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1. Function test

1.1 Hardware function

Base Function Test(OS:Win7/64)

Item	Description	Result	Remark
1	Power Button	PASS	
2	Reset	PASS	
3	Power LED	PASS	
4	HDD LED	PASS	
5	SATA	PASS	SATAIII
6	CN_USB	PASS	USB v
7	USB3.0 1/2	PASS	
8	SO-DIMM(DDR3L)	PASS	
9	COM 1/2	PASS	Mouse FTDI
10	CN_PS2	PASS	
11	CN_AUDIO	PASS	Line out v Mic in v
12	CN_LPC	PASS	
13	CPUFAN	PASS	
14	SYSFAN	PASS	
15	MINI_CARD	PASS	MPX-210D2 v / mSATA v / WIFI Card v
16	Display port	PASS	
17	HDMI	PASS	
18	CN_LVDS	PASS	
19	CN_INV	PASS	
20	LAN	PASS	I210
21	DC_IN	PASS	

Jumper

Item	Description	Result
1	JRTC	PASS
2	JVLCD	PASS
3	JAT	PASS
4	JMSATA	PASS

1.2 BIOS function : (2016/05/24)

Item	Description	Result	Remark
1	Press 'Del' to run Setup Utility	PASS	
2	Ctrl-Alt-Del – Soft-Reboot	PASS	
3	Save & Exit Setup	PASS	
4	Date & Time Setting	PASS	
5	NumLock	PASS	
6	Quick Boot	PASS	
7	Diagnostic Splash Screen	PASS	
8	Diagnostic Summary Screen	PASS	
9	UEFI Boot	PASS	
10	Select Language	PASS	
11	IGD Boot Ttype	PASS	HDMI √ Display port √ LVDS √
12	Azalia Controller	PASS	
13	SATA Configuration	PASS	SATA Controller √ SATA Mode Selection √
14	USB Configuration	PASS	
15	Wake on LAN Enable	PASS	
16	Power On By RTC Alarm	PASS	
17	Watch Dog Timer Select	PASS	

18	Power Control	PASS	
19	CPU Fan (RPM)	PASS	
20	System Fan (RPM)	PASS	
21	Sleep	PASS	

1.3 Driver

CD Edition : DIPCi1-1.4

1. Windows 7 64-bit Driver Test

Item	Description	Result	version
1	Chipset Driver	PASS	10.1.1.13
2	Graphic Driver	PASS	20.19.15.4380
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	12.13.27.0
5	USB 3.0 Driver	PASS	4.0.4.51

2. Windows 8.1 32-bit driver test

Item	Description	Result	version
1	Chipset Driver	PASS	10.1.1.13
2	Graphic Driver	PASS	20.19.15.4380
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	12.14.7.0

3. Windows 8.1 64-bit driver test

Item	Description	Result	version
1	Chipset Driver	PASS	10.1.1.13
2	Graphic Driver	PASS	20.19.15.4380
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	12.14.7.0

4. Windows 10 64-bit driver test

Item	Description	Result	version
1	Chipset Driver	PASS	10.1.1.13
2	Graphic Driver	PASS	20.19.15.4380
3	Audio Driver	PASS	6.0.1.7541
4	LAN Driver	PASS	12.12.226.0

2. Compatibility test

2.1 CPU Test

Test environment:

OS Windows 7 professional SP1

Test program : PC MARK 2005

Spec Code	CPU Speed	Max Turbo Frequency	Family	Processor	Max TDP	Smart Cache	Result
SR2KL	1.60GHz	2.56GHz	Pentium	N3710	6W	2MB	PASS
SR2LV	1.04GHz	2.00GHz	Atom	X5-E8000	5W	2MB	PASS

2.2 Operation System Test

Item	Description	Result	Remark
1	Windows 7 64-bit	PASS	
2	Windows 8.1 32-bit	PASS	
3	Windows 8.1 64-bit	PASS	
4	Windows 10 64-bit	PASS	
5	CentOS-6.4-x86-64	PASS	
6	CentOS 6.4 i386	PASS	
7	CentOS-6.7-i386	PASS	
8	Kubuntu 13.04	PASS	

2.3 Memory Test

Test environment:

OS Windows 7 Professional SP1

Test program : PC MARK 2005 & AIDA64

Manufacturer/ Model No.	Chip	Frequency	Capacity Mbytes	Result
Kingston KVR16LS11/4	D5128EC4BPGGBU	DDR3L 1600	4GB	PASS
Transcend TS512MSK64W6H	SEC 234 HYKO K4B4G0846B	DDR3L 1600	4GB	PASS
ACPI DDRIII-1600 SO-DIMM 1.35V	SKhynix H5TC4G83AFR PBA	DDR3L 1600	8GB	PASS
ACPI DDRIII-1600 SO-DIMM 1.35V	ISSI IS43TR85120AL-12 5KBLLI	DDR3L 1600	4GB	PASS

2.4 Graphic Quality Test

2.4.1 Test environment OS : Windows 7 professional SP1 64-bit

Driver version : 20.19.15.4352

Resolution	Color	HDMI	Display Port	Remark
800*600	16 / 32bit	PASS	PASS	Single
1024*768	16 / 32bit	PASS	PASS	Single
1152*864	16 / 32bit	PASS	PASS	Single
1280*600	16 / 32bit	PASS	PASS	Single
1280*720	16 / 32bit	PASS	PASS	Single
1280*768	16 / 32bit	PASS	PASS	Single
1280*800	16 / 32bit	PASS	PASS	Single
1280*960	16 / 32bit	PASS	PASS	Single
1280*1024	16 / 32bit	PASS	PASS	Single
1360*768	16 / 32bit	PASS	PASS	Single
1366*768	16 / 32bit	PASS	PASS	Single
1400*1050	16 / 32bit	PASS	PASS	Single
1440*900	16 / 32bit	PASS	PASS	Single
1600*900	16 / 32bit	PASS	PASS	Single
1600*1200	16 / 32bit	PASS	N/C	Single
1680*1050	16 / 32bit	PASS	PASS	Single
1792*1344	16 / 32bit	PASS	N/C	Single
1856*1392	16 / 32bit	PASS	N/C	Single
1920*1080	16 / 32bit	PASS	PASS	Single
1920*1200	16 / 32bit	PASS	N/C	Single
1920*1440	16 / 32bit	PASS	N/C	Single
2048*1152	16 / 32bit	PASS	N/C	Single

2560*1440	16 / 32bit	PASS	PASS	Single
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2.4.2 Test environment OS : OS Windows 10 64-bit

Resolution	Color	HDMI	Display Port	Remark
800*600	32bit	PASS	PASS	Single
1024*768	32bit	PASS	PASS	Single
1152*864	32bit	PASS	PASS	Single
1280*600	32bit	PASS	N/C	Single
1280*720	32bit	PASS	PASS	Single
1280*768	32bit	PASS	N/C	Single
1280*800	32bit	PASS	PASS	Single
1280*960	32bit	PASS	PASS	Single
1280*1024	32bit	PASS	PASS	Single
1360*768	32bit	PASS	N/C	Single
1366*768	32bit	PASS	N/C	Single
1400*1050	32bit	PASS	N/C	Single
1400*480	32bit	PASS	PASS	Single
1400*576	32bit	PASS	PASS	Single
1440*900	32bit	PASS	PASS	Single
1600*900	32bit	PASS	PASS	Single
1600*1200	32bit	PASS	N/C	Single
1680*1050	32bit	PASS	PASS	Single
1792*1344	32bit	PASS	N/C	Single
1856*1392	32bit	PASS	N/C	Single
1920*1080	32bit	PASS	PASS	Single

1920*1200	32bit	PASS	N/C	Single
1920*1440	32bit	PASS	N/C	Single
2048*1152	32bit	PASS	N/C	Single
2560*1440	32bit	PASS	PASS	Single

2.5 Audio

Test environment:

OS Windows 7 64-bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

OS Windows 8.1 32 bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

OS Windows 8.1 64 bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

OS Windows 10 64-bit

Driver version : 6.0.1.7541

Item	Description	Result	Remark
1	2 CH	PASS	
2	Microphone	PASS	

2.6 HDD Test

Test environment:

OS Windows 7 professional SP1

Model	Interface	Capacity	Size Detect	Data Transfer
WD5000BPKT	SATA	500GB	PASS	PASS
WD5000LPCX	SATA	500GB	PASS	PASS
Kingston SSDnow300 (SV300S37A)	SATA	240GB	PASS	PASS
Intel SSD 330 Series (SSDSC2CT060A3)	SATA	60GB	PASS	PASS
Memoright STM-25 Series (MRS AJ6C064GC125C00)	SATA	64GB	PASS	PASS
Crucial M500 mSATA SSD (CT120M500SSD3)	mSATA	120GB	PASS	PASS

2.7 DVD/CD-ROM Test

Test environment:

OS Windows

Model	Interface	Detect	Data Transfer	Play CD
Transcend DVD TS8XDVDS-K	USB	PASS	PASS	PASS
LITEON eTAU108	USB	PASS	PASS	PASS

2.8 USB device Test

1. Windows 7 32/64-bit

Item	Result	Remark
External USB Keyboard Test	PASS	
External USB Mouse Test	PASS	
Hot plugging test	PASS	
DVD/CD ROM	PASS	
USB Mass storage	PASS	
USB 3.0	PASS	

*use USB device need first install driver.

2. Windows 8.1 32/64-bit

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

3. Windows 10 64-bit

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

2.9 Serial Port Test

1. Windows 7 64-bit

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

2. Windows 8.1 32-bit

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

3. Windows 8.1 64-bit

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

4. 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. MS-DOS

Item	Description	Result	Remark
1	Keyboard LED Status Test	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

2. Windows 7 64-bit

Item	Description	Result	Remark
1	Keyboard LED Status Test	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

3. Windows 8.1 32/64-bit

Item	Description	Result	Remark
1	Keyboard LED Status Test	PASS	
2	Keyboard Typing Test	PASS	
3	Mouse Detect Test	PASS	

5. Windows 10 64-bit

Item	Description	Result	Remark
1	Keyboard LED Status Test	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 7 64-bit (I210)

driver version : 12.13.27.0

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

2. Windows 8.1 32/64-bit (I210)

driver version : 12.13.27.0

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

3. Windows 10 64-bit (I210)

driver version : 12.13.17.4

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

EtherCAT :

Windows 7 64-bit (I210)

Item	Description	Result	Remark
1	EtherCAT Workbench	PASS	
2	EtherCAT Master	PASS	

2.12 Power Supply Test

Item	TYPE	Description	Result	Remark
1	Adapter(5V)	AD2405A(SCEPTRE)	PASS	19W
2	Adapter(5V)	EA10521B-050	PASS	30W

2.13 PCI Express mini card

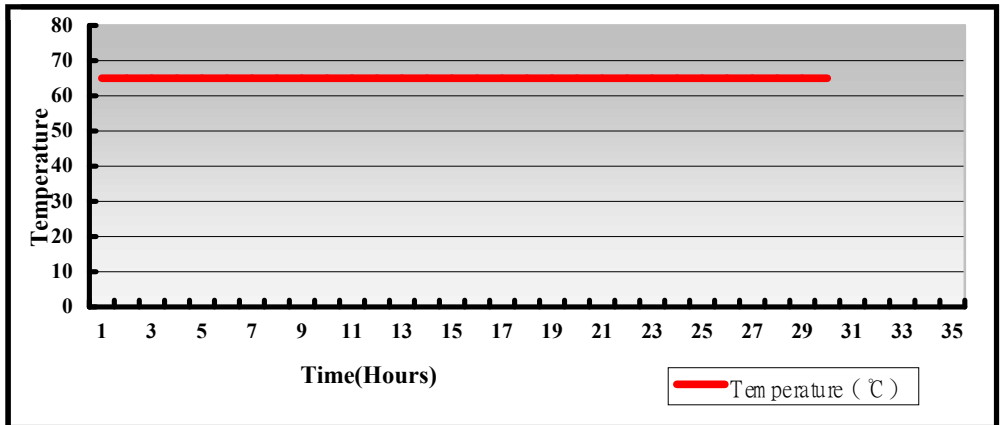
Motherboard	PCI Express mini card	Result	Card	Remark
LP-176	MPX-24794G2	PASS	√	Win7(32bit)&8.1(32bit)
	MPX-25858	PASS	√	Win7
	MPX-827	PASS	√	Win7
	MPX-643	PASS	√	Win7&8.1&10
	MPX-954	PASS	√	Win7(32bit)
	MPX-954E	PASS	√	Win7(32bit)
	MPX-6864	PASS	√	Win7(32bit)
	MPX-7202	PASS	√	Win7
	MPX-9125	PASS	√	Win7&8.1&10
	MPX-574D	PASS	√	Win7&8.1&10
	MPX-574D2	PASS	√	Win7&8.1&10
	MPX-210D	PASS	√	Win7&8.1&10
	MPX-210D2	PASS	√	Win7&8.1&10
	MPX-350	PASS	√	Win7
	MPX-2213	PASS	√	Win7
	WiFi Card(MPX-5201)	PASS	√	Win7&8.1&10
	mSATA (Crucial M500 120G)	PASS	√	Win7&8.1&10
MPX-2515	X	X		

	MPX-885	X	X	
	MPX-750	X	X	

3. Environmental test

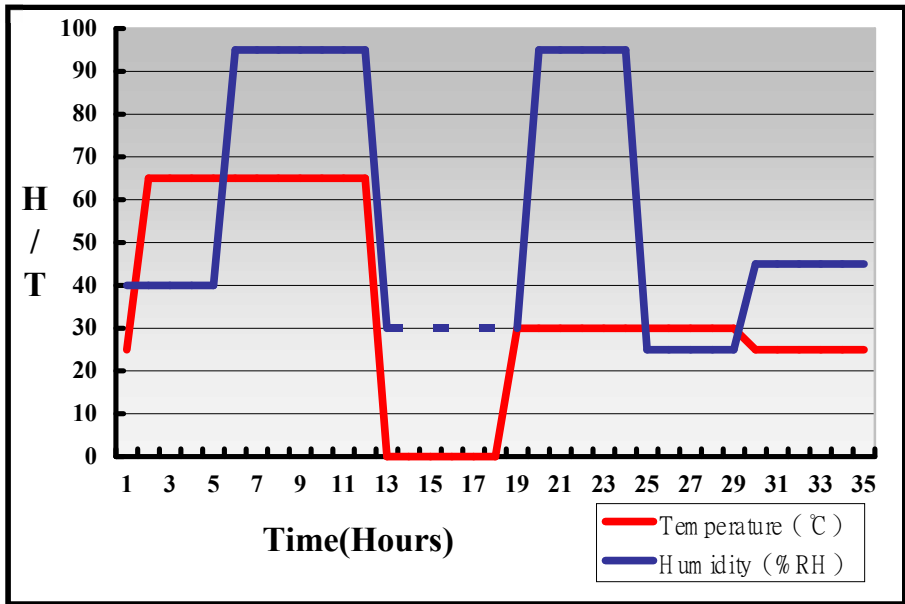
3.1 Temperature Test

System Board	LP-176
CPU	Intel® Pentium(R) N3710 1.60GHz(√) Intel® Atom™ X5-E8000 1.04GHz(√)
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)
HDD	WD5000BPKT - 500GB
Operating OS	Windows 10 64bit
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	3DMark +Prime95-266



Hardware Device list:

System Board	LP-176
CPU	Intel® Pentium(R) N3710 1.60GHz Intel® Atom™ X5-E8000 1.04GHz
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)
HDD	WD5000BPKT - 500GB
Operating OS	Windows 10 64bit
Test Equipment	GIANT FORCE (GTH-150-60-CP-AR)
Test Program	3DMark +Prime95-266



Definition : When the temperature is 30 degrees below arrive, humidity measurements have not, so by the dashed line express.

Boot Up Test:

Hardware Device list:

System Board	LP-176
CPU	Intel® Pentium(R) N3710 1.60GHz Intel® Atom™ X5-E8000 1.04GHz
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)
HDD	WD5000BPKT - 500GB

Temperature	Result		Remark
65°C	P:PASS	A:PASS	50 Times
-40°C	P:PASS	A:PASS	50 Times

3.2 Thermal measurements at various points on the board

Test Environment :

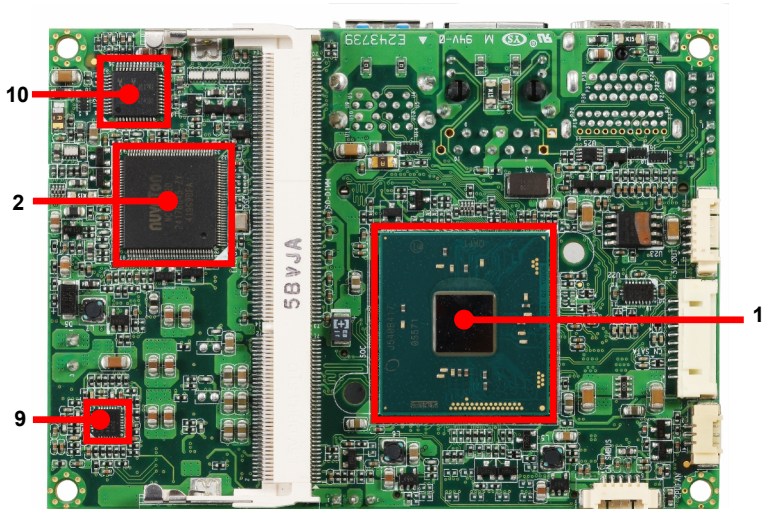
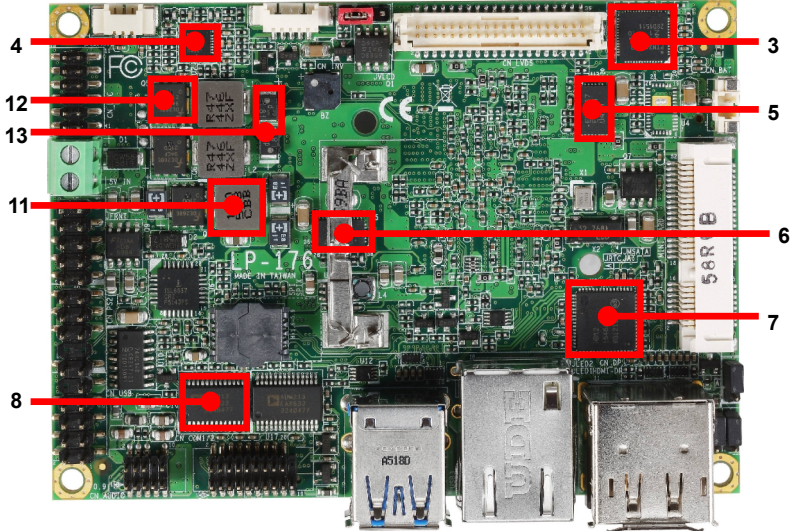
CPU	Intel® Pentium(R) N3710 1.60GHz Intel® Atom™ X5-E8000 1.04GHz
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)
HDD	WD5000BPKT - 500GB
Power	EA10521B-050
Operating System	Windows 10 64-bit
Test Program	3DMark + Prime 95-266

Test Result:

Item	Environmental temperature	Pentium(R)	Atom™	26°C
1	SOC	87.6°C	78°C	
2	LPCIO	58.1°C	54.3°C	
3	U1	60.8°C	59.1°C	
4	U2	63.1°C	55.7°C	
5	U3	66.6°C	57.5°C	
6	U5	67.7°C	61.1°C	
7	U9	61.8°C	56.4°C	
8	U16	59.7°C	57.5°C	
9	U20	62.6°C	54.8°C	
10	U29	58.3°C	50.7°C	
11	L3	63.2°C	53.5°C	

12	Q5	66.1°C	58.8°C	
13	C30	65.2°C	57.6°C	

1



4. Reliability Test

4.1 Power Consumption Test

1. Test Environment:

Motherboard	LP-176
CPU	Intel® Pentium(R) N3710 1.60GHz
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)
HDD	WD5000BPKT - 500GB

Adapter : AD2405A(5V)

Voltage	MS-DOS Boot up		Win7(64Bit) 3DMARK 11(once) + PRIME 95	
	Current (A)	Power (W)	Current (A)	Power (W)
5V (Adapter)	1.73	8.65	3.78	18.9

1. a. Test Environment:

The same as above but with LCD panel

Graphics card	AUO M170EG01 17"LCD
---------------	---------------------

Adapter : EA10521B-050(5V)[Motherboard]

Power Supply : V12 POWER BS400W(12V)[Panel Power]

Voltage	MS-DOS Boot up		Win7(64Bit) 3DMARK 11(once) + PRIME 95	
	Current (A)	Power (W)	Current (A)	Power (W)
5V	2.73	13.65	4.92	24.6
12V	1.43	17.16	1.49	17.88
Total		30.81		42.48

2. Test Environment:

Motherboard	LP-176
CPU	Intel® Atom™ X5-E8000 1.04GHz
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)
HDD	WD5000BPKT - 500GB

Adapter : AD2405A(5V)

Voltage	MS-DOS Boot up		Win7(64Bit) 3DMARK 11(once) + PRIME 95	
	Current (A)	Power (W)	Current (A)	Power (W)
5V	1.79	8.95	2.42	12.1

2. a. Test Environment:

The same as above but with LCD panel

Graphics card	AUO M170EG01 17"LCD
----------------------	----------------------------

Adapter : EA10521B-050(5V)[Motherboard]

Power Supply : V12 POWER BS400W(12V)[Panel Power]

Voltage	MS-DOS Boot up		Win7(64Bit) 3DMARK 11(once) + PRIME 95	
	Current (A)	Power (W)	Current (A)	Power (W)
5V	2.62	13.1	3.57	17.85
12V	1.45	17.4	1.50	18
Total		30.5		35.85

5. Performance Test

5.1 Performance Test 8.0

Windows 7 x64

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel® Pentium(R) N3710 1.60GHz Kingston DDR3L 1600 4GB (D5128EC4BPGGBU) WD5000BPKT - 500GB	PASS	Summary 743.3 CPU Mark 2117 2D Graphics Mark 255.8 3D Graphics Mark 274.2 Memory Mark 636 Disk Mark 832

Windows 7 x64

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel® Atom™ X5-E8000 1.04GHz Kingston DDR3L 1600 4GB (D5128EC4BPGGBU) WD5000BPKT - 500GB	PASS	Summary 713.2 CPU Mark 1744 2D Graphics Mark 195.9 3D Graphics Mark 174.5 Memory Mark 592 Disk Mark 824

Windows 8.1 x64

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel® Pentium(R) N3710 1.60GHz Kingston DDR3L 1600 4GB (D5128EC4BPGGBU) WD5000BPKT - 500GB	PASS	Summary 851.1 CPU Mark 2127 2D Graphics Mark 195.5 3D Graphics Mark 270.3 Memory Mark 649 Disk Mark 812

Windows 8.1 x64

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel® Atom™ X5-E8000 1.04GHz Kingston DDR3L 1600 4GB (D5128EC4BPGGBU) WD5000BPKT - 500GB	PASS	Summary 671 CPU Mark 1709 2D Graphics Mark 162 3D Graphics Mark 169.6 Memory Mark 597 Disk Mark 804

Windows 10 x64

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel® Pentium(R) N3710 1.60GHz Kingston DDR3L 1600 4GB (D5128EC4BPGGBU) WD5000BPKT - 500GB	PASS	Summary 874.6 CPU Mark 2096 2D Graphics Mark 227.4 3D Graphics Mark 271.6 Memory Mark 647 Disk Mark 756

Windows 10 x64

WEIGHTED SUITE	Test Environment	Result	Remark
Performance Test 8.0	Intel® Atom™ X5-E8000 1.04GHz Kingston DDR3L 1600 4GB (D5128EC4BPGGBU) WD5000BPKT - 500GB	PASS	Summary 695.6 CPU Mark 1742 2D Graphics Mark 179.5 3D Graphics Mark 173 Memory Mark 600 Disk Mark 800

5.2 3D MARK

Windows 7 64-bit

CPU	Intel® Pentium(R) N3710 1.60GHz			
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)			
HDD	WD5000BPKT - 500GB			
WEIGHTED SUITE		Result	Score	Remark
3DMARK2003		PASS	3356	
3DMARK2005		PASS	3235	
3DMARK2006	3DMARK Score	PASS	2281	
	SM2.0 Score	PASS	785	
	HDR/SM3.0 Score	PASS	856	
	CPU Score	PASS	2482	
3DMARK11	3DMARK Score	PASS	X134	
	Graphics Score	PASS	121	
	Physics Score	PASS	1565	
	Combined Score	PASS	128	
3DMARK Vantage	3DMARK Score	PASS	P1651	
	GPU Score	PASS	1340	
	CPU Score	PASS	5461	

Windows 7 64-bit

CPU	Intel® Atom™ X5-E8000 1.04GHz			
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)			
HDD	WD5000BPKT - 500GB			
WEIGHTED SUITE		Result	Score	Remark
3DMARK2003		PASS	2701	
3DMARK2005		PASS	2628	
3DMARK2006	3DMARK Score	PASS	2176	
	SM2.0 Score	PASS	776	
	HDR/SM3.0 Score	PASS	846	
	CPU Score	PASS	1489	
3DMARK11	3DMARK Score	PASS	N/C	
	Graphics Score	PASS	232	
	Physics Score	PASS	1481	
	Combined Score	PASS	295	
3DMARK Vantage	3DMARK Score	PASS	P1047	
	GPU Score	PASS	835	
	CPU Score	PASS	4340	

5.4 PC MARK

Windows 7 64-bit

CPU	Intel® Pentium(R) N3710 1.60GHz			
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)			
HDD	WD5000BPKT - 500GB			
WEIGHTED SUITE		Result	Score	Remark
PCMARK2002	CPU Score	PASS	N/A	
	Memory Score	PASS	10639	
	HDD Score	PASS	3492	
PCMARK2004	PCMark Score	PASS	N/A	
	CPU Score	PASS	N/A	
	Memory Score	PASS	3491	
	Graphic Score	PASS	4981	
	HDD Score	PASS	5776	
PCMARK2005	PCMark Score	PASS	N/A	
	CPU Score	PASS	5212	
	Memory Score	PASS	4174	
	Graphic Score	PASS	N/A	
	HDD Score	PASS	6462	

Windows 7 64-bit

CPU	Intel® Atom™ X5-E8000 1.04GHz			
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)			
HDD	WD5000BPKT - 500GB			
WEIGHTED SUITE		Result	Score	Remark
PCMARK2002	CPU Score	PASS	N/A	
	Memory Score	PASS	9683	
	HDD Score	PASS	2960	
PCMARK2004	PCMark Score	PASS	N/A	
	CPU Score	PASS	N/A	
	Memory Score	PASS	3188	
	Graphic Score	PASS	3438	
	HDD Score	PASS	6050	
PCMARK2005	PCMark Score	PASS	N/A	
	CPU Score	PASS	4078	
	Memory Score	PASS	3720	
	Graphic Score	PASS	N/A	
	HDD Score	PASS	6725	

5.5 AIDA64

Windows 7 64-bit

CPU	Intel® Pentium(R) N3710 1.60GHz
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)
HDD	WD5000BPKT - 500GB

Summary :

Summary

Computer:

Computer Type ACPI x64-based PC
Operating System Microsoft Windows 7 Ultimate
OS Service Pack Service Pack 1
Internet Explorer 8.0.7601.17514 (IE 8.0 - Windows 7 SP1)
DirectX 11.1
Computer Name USER-PC
User Name user
Logon Domain user-PC
Date / Time 2016-05-21 / 03:07

Motherboard:

CPU Type QuadCore Intel Pentium N3710, 2566 MHz (32 x 80)
Motherboard Name COMMELL LP-176
Motherboard Chipset Intel Braswell
System Memory 3936 MB
DIMM1: Kingston 4 GB DDR3-1600 DDR3 SDRAM (11-11-11-28 @ 800 MHz) (10-10-10-27 @ 761 MHz) (9-9-9-24 @ 685 MHz) (8-8-8-22 @ 609 MHz) (7-7-7-19 @ 533 MHz) (6-6-6-16 @ 457 MHz) (5-5-5-14 @ 380 MHz)
BIOS Type Phoenix (05/09/2016)
Communication Port Communications Port (COM1)
Communication Port Communications Port (COM2)

Display:

Video Adapter Intel(R) HD Graphics (1 GB)
Video Adapter Intel(R) HD Graphics (1 GB)
Video Adapter Intel(R) HD Graphics (1 GB)
Monitor Asus P8278 [27" LCD] (CBLMTF096773)

Multimedia:

Audio Adapter Intel Braswell HDMI @ Intel Cherry Trail / Braswell SoC - HD Audio Controller
Audio Adapter Realtek ALC262 @ Intel Cherry Trail / Braswell SoC - HD Audio Controller

Storage:

IDE Controller Standard AHCI 1.0 Serial ATA Controller
Disk Drive WDC WD5000BPKT-00PK4T0 ATA Device (500 GB, 7200 RPM, SATA-II)
SMART Hard Disks OK
Status OK

Partitions:

C: (NTFS) 99771 MB (73524 MB free)
D: (NTFS) 117.2 GB (103.1 GB free)
Total Size 214.6 GB (174.9 GB free)

Input:

Keyboard Standard PS/2 Keyboard
Mouse HID-compliant mouse
Mouse PS/2 Compatible Mouse

Network:

Primary IP Address 127.0.0.1
Primary MAC Address 00-03-1D-01-14-C3
Network Adapter Intel(R) I210 Gigabit Network Connection

Peripherals:

Printer Fax
Printer Microsoft XPS Document Writer
USB3 Controller Intel Cherry Trail / Braswell SoC - USB 3.0 xHCI Controller
USB Device USB Input Device

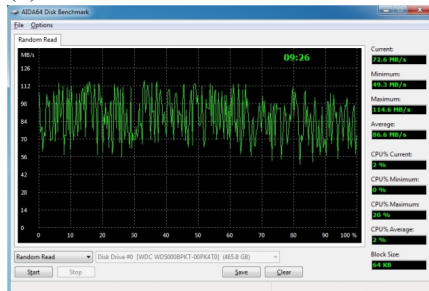
DMI:

DMI BIOS Vendor Phoenix Technologies Ltd.
DMI BIOS Version LP-176 V1.0
DMI System Manufacturer
DMI System Product
DMI System Version
DMI System Serial Number
DMI Motherboard Manufacturer COMMELL
DMI Motherboard Product LP-176
DMI Motherboard Version
DMI Motherboard Serial Number
DMI Chassis Manufacturer
DMI Chassis Version
DMI Chassis Serial Number
DMI Chassis Asset Tag
DMI Chassis Type Hand Held

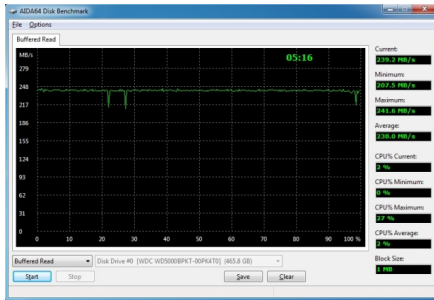
Tools:

1. Disk Benchmark :

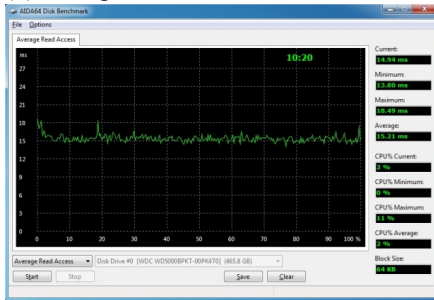
(1)Random Read :



(2) Buffered Read :



(3) Average Read Access :



2. Cache & Memory Benchmark :

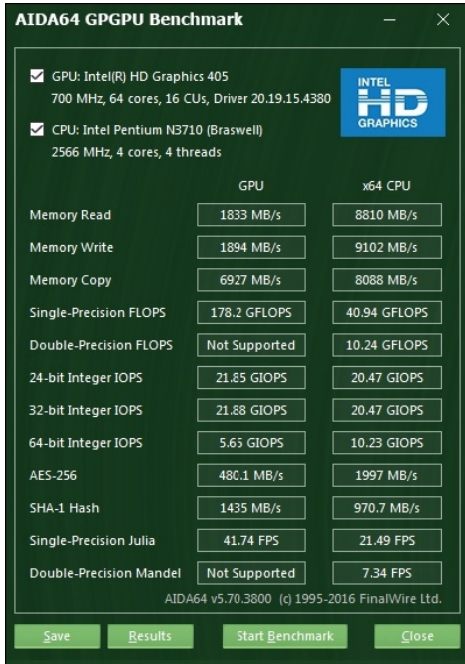
AIDA64 Cache & Memory Benchmark

	Read	Write	Copy	Latency
Memory	8787 MB/s	9156 MB/s	8244 MB/s	120.8 ns
L1 Cache	159.52 GB/s	158.15 GB/s	143.53 GB/s	1.2 ns
L2 Cache	97848 MB/s	45412 MB/s	68318 MB/s	12.0 ns
L3 Cache				
L4 Cache				
CPU Type	QuadCore Intel Pentium N3710 (Braswell, FCBGA1170)			
CPU Stepping	D1			
CPU Clock	2559.9 MHz (original: 1600 MHz, overclock: 60%)			
CPU FSB	80.0 MHz (original: 80 MHz)			
CPU Multiplier	32x	North Bridge Clock		
Memory Bus	800.0 MHz	DRAM:FSB Ratio	30:3	
Memory Type	Single Channel DDR3-1600 SDRAM (11-11-11-28 CR1)			
Chipset	Intel Braswell			
Motherboard	COMMELL LP-176			

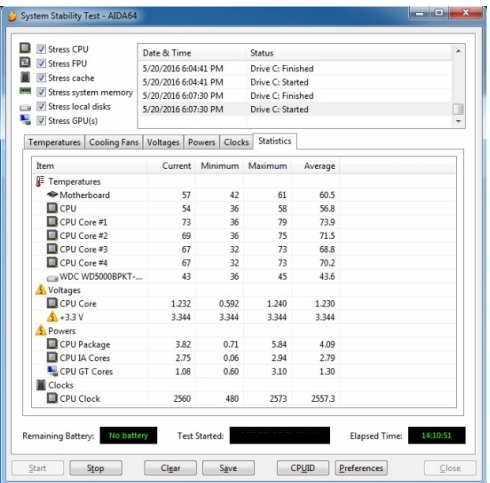
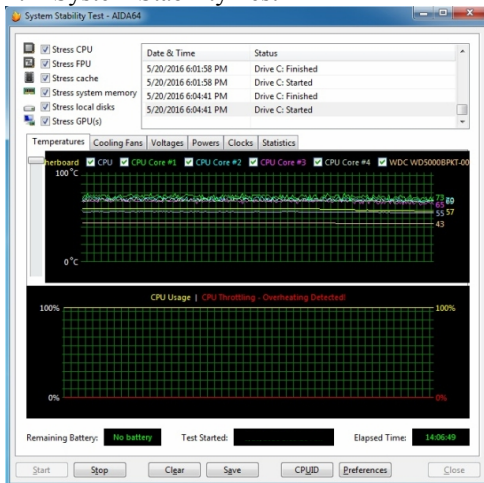
AIDA64 v5.70.3800 / BenchDLL 4.2.671-x64 (c) 1995-2016 FinalWire Ltd.

Save Start Benchmark Close

3. GPGPU Benchmark :



4. System Stability Test



5. AIDA64 CPUID

The screenshot shows the AIDA64 CPUID window with the following details:

- Processor:** QuadCore Intel Pentium N3710, Code Name: Braswell, Platform: FCBGA1170, Stepping: D1, CPUID Vendor: GenuineIntel, CPUID Name: Intel(R) Pentium(R) CPU N3710 @ 1.60GHz
- Cache:** CPUID Rev: 6 4C 4, Core Voltage: 0.592 V, L1/L2 Cache: 32 KB / 24 KB, L2 Cache: 1 MB, L3/L4 Cache: (empty)
- Clock:** CPU Clock: 480.0 MHz, Multiplier: 6x, Bus Clock: 80.0 MHz, Bus Speed: (empty)
- Instruction Set:** x86, x86-64, MMX, SSE, SSE2, SSE3, SSSE3, SSE4.1, SSE4.2, AES
- Motherboard:** COMMELL LP-176, BIOS Version: LP-176 V1.0, Chipset: Intel Braswell, Integr. Video: Active (Intel HD Graphics), Memory Type: Single Channel DDR3-1600 SDRAM (11-11-11-28 CR1), Memory Clock: 800.0 MHz, DRAM:FSB Ratio: 30:3

Windows 7 64-bit

CPU	Intel® Atom™ X5-E8000 1.04GHz
Memory	Kingston DDR3L 1600 4GB (D5128EC4BPGGBU)
HDD	WD5000BPKT - 500GB

Summary :

Summary

Computer:

Computer Type	ACPI x64-based PC
Operating System	Microsoft Windows 7 Ultimate
OS Service Pack	Service Pack 1
Internet Explorer	8.0.7601.17514 (IE 8.0 - Windows 7 SP1)
DirectX	DirectX 11.1
Computer Name	USER-PC
User Name	user-PC
Logon Domain	user-PC
Date / Time	2016-02-01 / 00:13

Motherboard:

CPU Type	QuadCore Intel Atom x5-E8000, 2000 MHz (25 x 80)
Motherboard Name	COMMELL LP-176
Motherboard Chipset	Intel Cherry Trail
System Memory	3936 MB
DIMM1: Kingston	4 GB DDR3-1600 DDR3 SDRAM (11-11-11-28 @ 800 MHz) (10-10-10-27 @ 781 MHz) (9-9-9-24 @ 665 MHz) (8-8-8-22 @ 609 MHz) (7-7-7-19 @ 533 MHz) (6-6-6-16 @ 457 MHz) (5-5-5-14 @ 380 MHz)
BIOS Type	Phoenix (05/09/2016)
Communication Port	Communications Port (COM1)
Communication Port	Communications Port (COM2)

Display:

Video Adapter	Intel(R) HD Graphics (1 GB)
Video Adapter	Intel(R) HD Graphics (1 GB)
Video Adapter	Intel(R) HD Graphics (1 GB)
Monitor	Asus PB278 [27" LCD] (CBLMTF096773)

Multimedia:

Audio Adapter	Intel Braswell HDMI @ Intel Cherry Trail / Braswell SoC - HD Audio Controller
Audio Adapter	Realtek ALC262 @ Intel Cherry Trail / Braswell SoC - HD Audio Controller

Storage:

IDE Controller	Standard AHCI 1.0 Serial ATA Controller
Disk Drive	WDC WD5000BPKT-00PK4TO ATA Device (500 GB, 7200 RPM, SATA-II)
SMART Hard Disks Status	OK

Partitions:

C: (NTFS)	99771 MB (73077 MB free)
D: (NTFS)	117.2 GB (103.1 GB free)
Total Size	214.6 GB (174.5 GB free)

Input:

Keyboard	Standard PS/2 Keyboard
Mouse	HID-compliant mouse
Mouse	PS/2 Compatible Mouse

Network:

Primary IP Address	127.0.0.1
Primary MAC Address	00-A0-C9-00-00-00
Network Adapter	Intel(R) I210 Gigabit Network Connection

Peripherals:

Printer	Fax
Printer	Microsoft XPS Document Writer
USB3 Controller	Intel Cherry Trail / Braswell SoC - USB 3.0 xHCI Controller
USB Device	USB Input Device

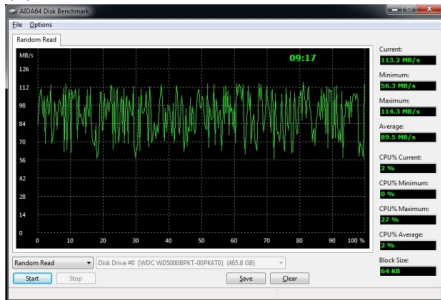
DMI:

DMI BIOS Vendor	Phoenix Technologies Ltd.
DMI BIOS Version	LP-176 V1.0
DMI System Manufacturer	
DMI System Product	
DMI System Version	
DMI System Serial Number	
DMI Motherboard Manufacturer	COMMELL
DMI Motherboard Product	
DMI Motherboard Version	LP-176
DMI Motherboard Serial Number	
DMI Chassis Manufacturer	
DMI Chassis Version	
DMI Chassis Serial Number	
DMI Chassis Asset Tag	
DMI Chassis Type	Hand Held

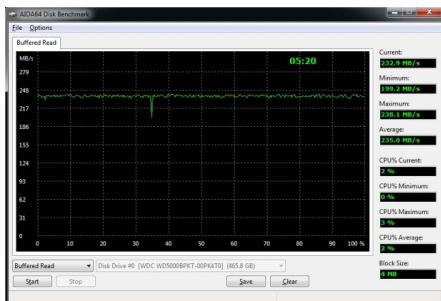
Tools:

1. Disk Benchmark :

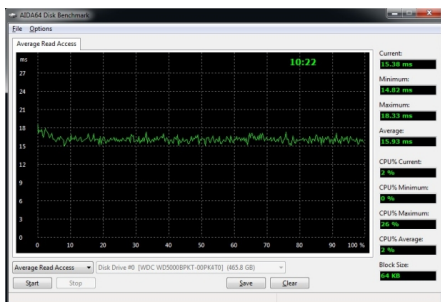
(1)Random Read :



(2)Buffered Read :



(3)Average Read Access :



2. Cache & Memory Benchmark :

AIDA64 Cache & Memory Benchmark

	Read	Write	Copy	Latency
Memory	8737 MB/s	9204 MB/s	8100 MB/s	127.0 ns
L1 Cache	124.67 GB/s	123.48 GB/s	114.19 GB/s	1.5 ns
L2 Cache	77749 MB/s	35368 MB/s	54111 MB/s	14.5 ns
L3 Cache				
L4 Cache				

CPU Type: QuadCore Intel Atom x5-E8000 (Cherry Trail, FCBGA1380)
 CPU Stepping: D1
 CPU Clock: 1999.8 MHz (original: 1040 MHz, overclock: 92%)
 CPU FSB: 80.0 MHz (original: 80 MHz)
 CPU Multiplier: 25x North Bridge Clock

Memory Bus: 799.9 MHz DRAM:FSB Ratio: 30:3
 Memory Type: Single Channel DDR3-1600 SDRAM (11-11-11-28 CR1)
 Chipset: Intel Cherry Trail
 Motherboard: COMMELL LP-176

AIDA64 v5.70.3800 / BenchDLL 4.2.671-x64 (c) 1995-2016 FinalWire Ltd.

Save Start Benchmark Close

3. GPGPU Benchmark :

AIDA64 GPGPU Benchmark

GPU: Intel(R) HD Graphics 400
 200 MHz, 48 cores, 12 CUs, Driver 20.19.15.4380

CPU: Intel Atom x5-E8000 (Cherry Trail)
 2000 MHz, 4 cores, 4 threads

	GPU	x64 CPU
Memory Read	2090 MB/s	8774 MB/s
Memory Write	2099 MB/s	9198 MB/s
Memory Copy	6943 MB/s	8228 MB/s
Single-Precision FLOPS	61.01 GFLOPS	31.98 GFLOPS
Double-Precision FLOPS	Not Supported	8.00 GFLOPS
24-bit Integer IOPS	7.49 GIOPS	15.99 GIOPS
32-bit Integer IOPS	7.49 GIOPS	15.99 GIOPS
64-bit Integer IOPS	1.93 GIOPS	8.00 GIOPS
AES-256	218.3 MB/s	1561 MB/s
SHA-1 Hash	681.5 MB/s	756.9 MB/s
Single-Precision Julia	14.30 FPS	16.82 FPS
Double-Precision Mandel	Not Supported	5.74 FPS

AIDA64 v5.70.3800 (c) 1995-2016 FinalWire Ltd.

Save Results Start Benchmark Close

4. AIDA64 CPUID

The screenshot shows the AIDA64 CPUID window with the following details:

- Processor:** QuadCore Intel Atom x5-E8000
- Code Name:** Cherry Trail
- Platform:** FCBGA1380
- Stepping:** D1
- CPUID Vendor:** GenuineIntel
- CPUID Name:** Intel(R) Atom(TM) x5-E8000 CPU @ 1.04GHz
- Core Voltage:** 0.664 V
- CPU Clock:** 480.0 MHz
- Multiplier:** 6x
- Bus Clock:** 80.0 MHz
- Bus Speed:** (empty)
- L1I / L1D Cache:** 32 KB / 24 KB
- L2 Cache:** 1 MB
- L3 Cache:** (empty)
- L4 Cache:** (empty)
- Instruction Set:** x86, x86-64, MMX, SSE, SSE2, SSE3, SSSE3, SSE4.1, SSE4.2, AES
- Motherboard:** COMMELL LP-176
- BIOS Version:** LP-176 V1.0
- Chipset:** Intel Cherry Trail
- Integr. Video:** Active (Intel HD Graphics)
- Memory Type:** Single Channel DDR3-1600 SDRAM (11-11-11-28 CR1)
- Memory Clock:** 800.0 MHz
- DRAM:FSB Ratio:** 30:3

At the bottom, it shows 'CPU #1 / Core #1', 'AIDA64 v5.70.3800', and 'Save' and 'Close' buttons.

5.6 Storage Performance

5.6.1 HDD

Test environment:

OS Windows 7 (64Bit)

Program (HD Tune)

HDD Model	Interface	Capacity	Average	Burst Rate	Access time
WD5000BPKT	SATA	500GB	88.6 MB/sec	158.6 MB/sec	17.6 ms
Transcend	USB	16GB	24.5 MB/sec	24.5 MB/sec	0.606 ms
ADATA	USB3.0	16GB	81.0 MB/sec	49.2 MB/sec	1.22 ms

5.6.2 CD/DVD-ROM

Test environment:

OS Windows 7 (64Bit)

Program (NERO)

CD/DVD-ROM Model	Interface	Average Speed	Full Read	Burst Rate	DVD
Transcend DVD TS8XDVDS-K	USB	5.47x	208ms	14 MB/s	4X -16 X DVD+R
LITEON eTAU108	USB	5.47x	173ms	16 MB/s	4X -16 X DVD+R