

P5 Verification Test Plan

Release No : 09P010016

Product Model	AEC-6420
Description	Fanless embedded controller with Intel Atom Processor
Test Configuration	<input checked="" type="checkbox"/> New product <input checked="" type="checkbox"/> CPU Board : EPIC-9457 <input checked="" type="checkbox"/> BIOS : AEC-6420 BIOS Rev 1.0(08/19/2009) <input checked="" type="checkbox"/> Carrier Board : N/A <input checked="" type="checkbox"/> Expansion Board : N/A <input checked="" type="checkbox"/> Chipset : <input checked="" type="checkbox"/> CPU : Intel Atom N270 1.6GHz <input checked="" type="checkbox"/> North Bridge : Intel 945GSE <input checked="" type="checkbox"/> South Bridge : Intel ICH7-M <input checked="" type="checkbox"/> VGA Chipset : Intel 945GSE <input checked="" type="checkbox"/> Audio Chipset : Realtek AC97 <input checked="" type="checkbox"/> Ethernet Chipset : Intel EP82562GT, <input checked="" type="checkbox"/> I/O Chipset : WINBOND W83627HG <input checked="" type="checkbox"/> TV Chipset : Intel ICH7-M <input checked="" type="checkbox"/> SDVO : N/A <input checked="" type="checkbox"/> Remark :P5 Report for AEC-6420 A1.0
Test Result Summary	
<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> Pass with Deviation Comment: _____ _____	

2009/10/15

Issue date

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There are 3 test results in this document; they are described as follows:

Pass: Function worked perfectly

Fail: Function failed and must be modified in the next version

N/A: Outside of specification or no test equipment

Platform Information:

Item	Device Information	Test Item
PCB Model / Version	EPIC-9457 A1.0	
Carrier Board	N/A	
BIOS / Version	AEC-6420 BIOS Rev1.0(08/19/2009)	
CPU Type	Intel Atom N270 1.6GHz	
Memory Type	Kingston DDR2-667 KVR667D2S5/2G 2GB (ELPIDA E1108ACBG-6E-E)	
SATA	N/A	
Primary IDE Master	FUJITSU MHW2040AT 40GB 2.5" IDE HDD	
Primary IDE Slave	N/A	
CRT	ViewSonic E70 17"	
LCD	N/A	
Compact Flash	N/A	
Backplane	N/A	
Riser Card	N/A	
Expansion Board	N/A	
	N/A	
Operating System	[] Linux-RedHat 9.0 or [] Fedora Core 8	N/A
	Windows Vista™ Ultimate English Version	N/A
	Windows Vista™ Ultimate x64 English Version	N/A
	Windows Server 2003 English Version / Standard Edition 5.2.3790	N/A
	Windows Server 2003 English Version /Standard x64 Edition	N/A
	Windows XP Professional English Version V2002 Service Pack 3	1,2,3,4,5,6,7
	Windows XP Professional English Version /Standard x64 Edition	N/A
	Windows 2000 Professional English Version V5.00.2195 Service Pack4	N/A
	Windows Server 2000 English Version	N/A
	Windows 98SE English Version V4.10.2222A	N/A
MS-DOS 6.22 English Version	N/A	
Power Supply	ATX Power Supply : N/A	
	AT Power Supply: N/A	
	DC Adapter : EA1050A-120	1,2,3,4,5,6,7

Test Result for Certification

1. I/O Peripheral Function Test

I/O Function	Result			Note
	Pass	Fail	N/A	
Floppy Connector / Driver A:			X	Defect No.
Primary IDE Master	X			
Primary IDE Slave	X			
Secondary IDE Master			X	
Secondary IDE Slave			X	
Third IDE Master			X	
Third IDE Slave			X	
RAID 0 Function Test			X	
RAID 1 Function Test			X	
SSD H.D Test			X	
SATA1 / Serial ATA Connector 1	X			
SATA2 / Serial ATA Connector 2	X			
SATA3 / Serial ATA Connector 3			X	
SATA4 / Serial ATA Connector 4			X	
Compact Flash – Type I			X	
Compact Flash – Type II			X	
DOC (Disk On Chip)			X	
DOM (Disk On Module) – 40 Pin			X	Transcend / TS512MDOM40V / 512MB / IDE 40 Pin
DOM (Disk On Module) – 44 Pin			X	Transcend / TS512MDOM44V / 512MB / IDE 44 Pin
COM 1-232	X			
COM 2-232	X			
COM 3-232			X	
COM 4-232			X	
COM 2-422	X			
COM 2-485	X			
PS/2 Mouse & Keyboard (Internal)			X	
PS/2 Mouse & Keyboard (External)			X	
Audio Connector	X			
Audio 5.1 Channel / S/P DIF			X	
LPT 1	X			
SIR / 115.2 Kbps			X	
FIR / 4M bps			X	
USB 1/2 Ports	X			
USB 3/4 Ports	X			
USB 2.0 1/2 Ports	X			
USB 2.0 3/4 Ports	X			
DIO Connector			X	
Card Bus			X	
PC/104			X	
PC/104-Plus			X	
PCI-104			X	

CD-In Connector			X	
TFT TTL LCD			X	
TFT LVDS LCD	X			
TV-out / AV Terminal			X	
TV-out / S-Video			X	
Component Video : Y/ Pb /Pr	X			ViewSonic VT2430 LCDTV
DVI Function			X	
HDMI Output (Embedded Audio)			X	ViewSonic VT2430 LCDTV
Touch Screen – 8 Wire			X	
Touch Screen – 4/5 Wire			X	
DIMM Slots	X			
Watchdog I/O n	X			
Watchdog Software Control			X	
FAN1 Connector	X			
FAN2 Connector	X			
Express card			X	
Speaker Connector	X			
LCD Backlight Power Connector			X	
DC in Connector			X	
PCI Express Mini Card			X	
Power Button	X			
Battery Connector	X			
Front Panel (CN34)	Result			Notes
	Pass	Fail	N/A	
Power On Button	X			
IDE LED	X			
External Buzzer			X	
On Board Buzzer			X	
Power LED	X			
Reset Switch			X	
Keyboard Lock			X	
Jumpers Function	Result			Notes
	Pass	Fail	N/A	
BIOS write protection Selection and boot Selection			X	
Backlight enable level Selection and LVDS Power Selection			X	
COM1 +12V/+5V/RING Selection			X	
COM2 +12V/+5V/RING Selection			X	
Auto Power button Selection and power on selection			X	
Power source selection			X	
FAN Power Selection			X	
CMOS Clear Selection			X	

LCD Brightness and speaker level Selection				X	
Power Connector & Function		Result			Notes
		Pass	Fail	N/A	
Standard AT Power Connector				X	
Standard ATX Power Connector				X	
5V Only Power Connector				X	
DC Adanter		X			
LAN Connector & Function		Result			Notes
		Pass	Fail	N/A	
LAN Link / Speed LED	LAN1	X			
	LAN2	X			
LAN Active LED	LAN1	X			
	LAN2	X			
LAN 10/100 Ethernet		X			
LAN 1G Ethernet		X			
PCI Connector & Function		Result			Notes
		Pass	Fail	N/A	
Mini PCI Slot				X	
PCI Slot				X	
PCI Express x1				X	
Mini PCI Express card				X	
Express card				X	

2. Timer Accuracy Test

System Clock & RTC Clock Test				
Test Method	Margin for error	Result		
		Pass	Fail	N/A
RTC Clock in Power On Mode	±3 second during 24 hours	X		
RTC Clock in Power Off Mode	±3 second during 24 hours	X		
Watchdog Timer Test		Result		
		Pass	Fail	N/A
Time-out Interval	10 sec	X		
	60 sec	X		
	255 sec	X		

3. Network HUB / LAN Connection Test

Location		LED Type				Result		
						Pass	Fail	N/A
LAN1~2 LED		Active LED				X		
		Link LED				X		
Location	Speed	HUB Type	Cable	HUB	Onboard	Result		

			Length	Speed	LAN Speed	Pass	Fail	N/A
		D-Link DGS-1008T	100M	1GBps	100	X		
		Accton DeskTop-3005	100M	100 MBps	100	X		
		SVEC FD916H (10 Mbps HUB)	100M	10 MBps	10	X		
Location	Speed	D-Link DGS-1008T	100M	1GBps	100	X		
		Accton DeskTop-3005	100M	100 MBps	100	X		
		SVEC FD916H (10 Mbps HUB)	100M	10 MBps	10	X		

4. Hardware Compatibility

CPU Compatible Test							
CPU Type		FSB	Prime95 Version		Result		
					Pass	Fail	N/A
Intel Atom N270 1.6GHz		533MHz	V25.90		X		
Memory Compatibility Test							
Memory Brand	Memory Chipset	Frequency	Size	MemTest86 Version	Result		
					Pass	Fail	N/A
Kingston	ELPIDA E1108ACBG-6E-E	667	2G	V2.1	X		
Audio Basic Function Test					Result		
					Pass	Fail	N/A
System Sound					X		
CD_In							X
CD_In Sound Recorder							X
Play Sound Recorder					X		
Line Out					X		
Line In					X		
Line In Sound Record					X		
MIC Speaker			Dynamic		X		
			Condenser		X		
MIC Sound Recorder			Dynamic		X		
			Condenser		X		
Audio 5.1 Channel with S/P DIF Function Test					Result		
					Pass	Fail	N/A
2-channel mode for stereo speaker output							X
4-channel mode for 4 speaker output							X
6-channel mode for 5.1 speaker output							X
S/P DIF function Test		Input					X
		Output					X
On Board TV Function Test					Result		
					Pass	Fail	N/A
NTSC		AV Terminal					X

PAL			X
NTSC	S Terminal		X
PAL			X

On Board LCD Function Test

TFT LCD	Type	Voltage	Result		
			Pass	Fail	N/A
LVDS	Data Image 7" / 800*480 / 18bit (16:9)	3.3V			X
	AUO G065VN01 V.0 / 6.5" / 640x480 / 18bit (4:3)	3.3V			X
	AUO G065VN01 V.0 / 6.5" / 640x480 / 24bit (4:3)	3.3V			X
	AU B104SN02 / 10.4" / 800*600 / 18bit (4:3)	3.3V			X
	AU G150XG01 V.0 / 15" / 1024*768 / 18bit (4:3)	3.3V			X
	AU M150XN07 V.2 / 15" / 1024x768 / 24bit (4:3)	3.3V			X
	AU M170EG01 / 17" / 1280*1024 / 48bit (4:3)	5V			X
	Toshiba LTD12EX1S / 1280*768 / 18bit	3.3V			X
	AU M170XW01 V.1 / 17" / 1280x768 / 24bit (16:9)	5V			X
	AUO T260XW02 / 26" / 1366x768 / 24bit	5V			X
	AU M201UN02 V.5 / 20.1" / 1600x1200x48bit	5V			X
	AUO T370HW01 / 37" / 1920x1080 / 48bit	26V			X
TTL	Toshiba LTM10C209A / 10.4" / 640*480 / 18bit (4:3)	5V			X
	NEC NL8060AC31-12 / 12.1" / 800*600 / 18bit (4:3)	3.3/5V			X
	Sharp LQ121S1DG11 / 12.1" / 800*600 / 18bit (4:3)	3.3V			X
	LG LM151X2-C2TH / 15.1" / 1024x768 / 18bit (4:3)	3.3V			X
	Fujitsu FLC38XGC6V-06 / 15" / 1024*768 / 36bit (4:3)	5V			X

PCI Slot Function (PCI Adapter Card) Test

Model	Type	Result		
		Pass	Fail	N/A
CHAINTECH NVIDIA GeForce4 MX440-8X	VGA Card			X
SC3000 CMI8738/C3DX	Sound Card			X
Takram DC-395U V1.02	SCSI Card			X
I-VIEW CP-1400AS (with Age STD-477FAI CCD)	Capture Card			X
Intel GD82559 10/100 Mbps Fast Ethernet Adapter	LAN Card			X
D-Link DWL-520+ Wireless LAN	LAN Card			X
ADAPTEC 1420SA RoHS 4-Port SATA II RAID	RAID Card			X
LEMEL MD V1456VQH-P2 PCI MODEM Card	Modem Card			X
D-Link DU-520 USB 2.0	USB Hub Card			X

ISA Slot Function Test

	Result		
	Pass	Fail	N/A
Creative CT4170 Sound Blaster Sound Card			X
Adaptec AHA-1510/20/22B SCSI Card			X

PCI-Express Function Test

Model	Result		
	Pass	Fail	N/A
SUNIX SATA1414 VER 1.1 PCI-Express x1 SATA Card			X

SksKonnnect SK-9E21D 10/100/1000 Base-T Adapter PCI-Express x1 LAN Card			X
ASUS EAX1600PRO/TD/256M/A (ATI Chipset) PCI-Express x16 VGA Card			X
WinFast PX6200 TC TDH PCI-Express x16 VGA Card			X
SATA HD Compatibility Test			
Model	Result		
	Pass	Fail	N/A
HITACHI 160G SATA H.D HDS721616PLA380			X
WD 160G SATA H.D WD1600AAJS			X
CD/DVD-ROM Compatibility Test			
Model	Result		
	Pass	Fail	N/A
Pioneer DVD-ROM DVD-128A			X
BENQ-DVD 1650V			X
IDE Cable Function test			
IDE Model	Result		
	Pass	Fail	N/A
40 Pin Cable ATA66			X
44 Pin Cable ATA33	X		
80 Pin Cable ATA100			X
USB Function Test			
USB Basic Function Test	Result		
	Pass	Fail	N/A
USB Controller	X		
USB 2.0 Controller	X		
USB Keyboard Support	X		
USB Mouse Support	X		
USB 1.1 Compatible Test	Result		
	Pass	Fail	N/A
USB 1.1 Compatible Test	X		
USB 2.0 Compatible Test	Result		
	Pass	Fail	N/A
USB 2.0 Compatible Test	X		
USB 2.0 Function Test	Result		
	Pass	Fail	N/A
LITEON DX-20A4PU USB-DVD ROM	X		
USB Device Full Loading Test			
Model	Pass	Fail	N/A
Mitsumi FLL3.5 D353GUE/FUE	X		
USB HDD 20GB	X		
USB Card Reader	X		
USB Mouse	X		
USB Thumb drive- Sandisk 4G	X		

Floppy Disk Controller Function Test		Result			
		Pass	Fail	N/A	
Copy and compare file between C: and A / B:				X	
Change Floppy to None value				X	
Swap FDD				X	
Peripheral Compatibility-Storage Device					
Model	Interface	Result			
		Pass	Fail	N/A	
FUJITSU MCB3064SS	SCSI			X	
IOMega ZIP 100 parallel port	Parallel			X	
IOMega ZIP100MB Internal ATAPI Drive	IDE			X	
DOC				X	
Type-I CF	Fix / PIO Mode			X	
Type-I CF	Fix / UDMA Mode			X	
Digital I/O Connector Test		Result			
		Pass	Fail	N/A	
Input Address:				X	
Output Address:				X	
VCC: (5V)				X	
DIO-1 Function Test				X	
DIO-2 Function Test				X	
Adapter Compatibility- Industry Control Card PC/104, PC/104+, PCI-104 Modules					
Interface	Model	Type	Result		
			Pass	Fail	N/A
PC/104	AAEON PCM-5600	Modem Module			X
	AAEON PCM-3115B	PCMCIA Module			X
PC/104+	AAEON PCM-3430	SCSI Module			X
PCI-104	AAEON PCM-FA00	Mini-PCI Converter			X
	AAEON PCM-3794	SCSI Module			X
	AAEON PCM-3730	Intel 82559 LAN Module			X
On-Board RAID Function Test					
Model	Interface	Result			
		Pass	Fail	N/A	
Set SATA HDDs as RAID 0	SATA			X	
Set SATA HDDs as RAID 1	SATA			X	
Set SATA HDDs as RAID 10	SATA			X	
Set SATA HDDs as RAID 5	SATA			X	
COM Function Test		Result			
		Pass	Fail	N/A	
COM Port Burn In Test overnight		X			
Disk On Module [DOM] Compatibility Test					
Model	Interface	Result			

		Pass	Fail	N/A
Transcend / TS512MDOM40V / 512MB				X
Transcend / TS512MDOM44V / 512MB				X
Mini PCI Card Compatibility Test				
Model (Use PCI-104 transform board: MBC-1TM Rev.A1.0)	Interface	Result		
		Pass	Fail	N/A
PER-C10L Mini PCI LAN Card(Intel 82551QM)	LAN			X
GM-101 WLAN 11b/g 54Mbps Mini PCI Card (Model: VNT6655AM)	LAN			X
COM/LPT Ports & RS-232/422/485 Function Test		Result		
		Pass	Fail	N/A
RS-422 for COM2		X		
RS-485 for COM2		X		
COM1		X		
COM2		X		
LPT1		X		
Card Bus(PCMCIA) Compatibility Function Test				
Model	Result			
	Pass	Fail	N/A	
Intel PRO/Wireless 2011B LAN PC Card (WPC2011BWW)			X	
PQI 16MB Compact Flash Adapter (64MB PQI CF Card inserting)			X	
Kingston datapack DP-PCM2 / 2GB (PC Card TypeII HDD)			X	
PCi GW-NS54SG Cardbus Adapter Wireless LAN Type-II			X	

5. O.S. Compatibility Test

Installation Operation System Compatibility Test		Result			
		Pass	Fail	N/A	
Linux-Red-Hat 9.0 Kernel 2.4.20-8				X	
Fedora Core 2.6.15-1.2054 FC5				X	
Windows Server 2003 English Version / Standard Edition 5.2.3790				X	
Windows XP Professional English Version V2002 Service Pack 3		X			
Windows 2000 Professional English Version V5.00.2195 Service Pack 4				X	
Windows 98SE English Version V4.10.2222A				X	
Windows XP Professional English Standard Version x64 Edition				X	
Windows Vista™ Ultimate x64 Edition English Version				X	
Utility and Driver Test					
OS	Drivers Version		Result		
			Pass	Fail	N/A
Fedora Core 2.6.15-1.2054 FC5	Chipset Software	N/A			X
	Graphics Media	N/A			X
	LAN Driver	N/A			X

	Driver	LAN 2	N/A				X
	Driver	Audio	N/A				X
Windows Server 2003 English Version / Standard Edition 5.2.3790	Software	Chipset	N/A				X
	s Media	Graphic	N/A				X
	Driver	LAN	N/A				X
	Driver	Audio	N/A				X
Windows XP Professional English Version V2002 Service Pack 3	Software	Chipset	Intel chipset 9.0.0.1008 (5/01/2008)	X			
	s Media	Graphic	Intel 945 express chipset family 6.14.10.4926 (2/15/2008)	X			
	LAN Driver		Intel 82574L gigabytebit network connection 10.3.49.0 (8/5/2008)	X			
	Audio Driver		Realtek AC97 Audio 5.10.0.6280 (1/23/2008)	X			
Windows 2000 Professional English Version V5.00.2195 Service Pack 4	Software	Chipset	N/A				X
	s Media	Graphic	N/A				X
	Driver	LAN	N/A				X
	Driver	Audio	N/A				X
Windows 98SE English Version V4.10.2222A	Software	Chipset	N/A				X
	s Media	Graphic	N/A				X
	Driver	LAN	N/A				X
	Driver	Audio	N/A				X
Windows XP Professional English Standard Version x64 Edition	Software	Chipset	N/A				X
	s Media	Graphic	N/A				X
	Driver	LAN	N/A				X
	Driver	Audio	N/A				X
Windows Vista™ Ultimate x64 Edition English Version	Software	Chipset	N/A				X
	s Media	Graphic	N/A				X
	Driver	LAN	N/A				X
	Driver	Audio	N/A				X

6. BIOS Function Test

Test Item	Result		
	Pass	Fail	N/A
Memory Beep Test	X		
Standard CMOS Setup Test	X		
Boot Sequence Test	X		
Power Management Test			
APM Power Management Test			X
ACPI Power Management Test	X		
Power On Function Test	X		
Wake Up Event Test	X		
Power On after Power Failure Test	X		
CMOS Backup / Clear CMOS Test	X		
Boot ROM Test (RPL/PXE)	X		
Supervisor / User Password Test	X		
CRT / LCD / TV / DVI Function Test	X		
TV Standard Function Test			X
Init Display First Function Test	X		
On-Chip Serial ATA Function Test	X		
SATA Mode-IDE/RAID Function Test			X
PC Health Status			
Voltage Monitor Test	X		
FAN Speed Monitor Test	X		
Temperature Monitor Test	X		
USB Onboard Device Function Test	X		
COM Address / IRQ Test	X		
LPT Address / IRQ Test	X		
BIOS AWDFLASH Program Test	X		

7. Performance Test Platform Information

CPU Board	EPIC-9457 1.0
Carrier Board	N/A
BIOS	AEC-6420 BIOS Rev 1.0(08/19/2009)
Operating System	English Windows XP Professional Service Pack 3 V2003
CPU	Intel Atom N270 1.6GHz
Memory	Kingston DDR2-667 KVR667D2S5/2G 2GB (ELPIDA E1108ACBG-6E-E)
SATA HDD	N/A
Primary IDE Master	FUJITSU MHW2040AT 40GB 2.5" IDE HDD
Primary IDE Slave	N/A
CRT	Viewsonic E70 17"
LCD	N/A
Compact Flash	N/A
Expansion Board	N/A
	N/A
Chipset Software	Intel chipset 9.0.0.1008 (5/01/2008)
Graphics Media	Intel 945 express chipset family 6.14.10.4926 (2/15/2008)
LAN Driver	Intel 82574L gigabytebit network connection 10.3.49.0 (8/5/2008)
Audio Driver	Realtek AC97 Audio 5.10.0.6280 (1/23/2008)
Touchscreen Driver	N/A
Power Supply	DC Adapter :EA1050A-120

Test result:

Testing Software	Result	Unit
PCMark2002		
CPU	1322	
Memory	4127	
HDD	569	
Final Reality V1.01—BenchMark Test		
2D image	9.37	
3D	3.08	
Bus transfer	28.04	
Overall	8.71	Reality marks
3Dmark2001		

3DMark2001SE Build 330_Benchmark mode	1584	
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Test Result:

Testing Software	Result	Unit
PCMark05		
PCMark	N/A	PCMarks
CPU	606	
Memory	1510	
Graphics	N/A	
HDD	2281	
3Dmark2003 v360		
3Dmark Score	355	
CPU Score	116	