

P5 Verification Test Plan

Release No : 09P010008

Product Model	AEC-6831
Description	Fanless embedded controller with Intel Atom processor
Test Configuration	<ul style="list-style-type: none">⌘ New product<ul style="list-style-type: none">⌘ CPU Board : GENE-9455⌘ BIOS : AEC-6831 BIOS Rev 1.0 (04/30/2009) ⌘ Chipset :<ul style="list-style-type: none">⌘ CPU : Intel ® Atom™ 1.60 GHz (133*12)⌘ North Bridge : Intel 945GSE⌘ South Bridge : ICH7-M⌘ VGA Chipset : 945GSE⌘ Audio Chipset : Realtek ALC655 Audio⌘ Ethernet Chipset : Intel 82574L⌘ I/O Chipset : ITE8781⌘ SDVO : N/A ⌘ Remark : QE NPDP P5 Report for AEC-6831
Test Result Summary	
<input checked="" type="checkbox"/> Pass	
<input type="checkbox"/> Fail	
<input type="checkbox"/> Pass with Deviation	
Comment: _____ _____	

2009/06/08

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	GENE-9455 A0.1	
BIOS / Version	AEC-6831 BIOS Rev 1.0 (04/30/2009)	
CPU Type	Intel ® Atom™ 1.60 GHz (133*12)	
Memory Type	DSL ELPIDA-E5108AJBG-6E-E 512MB	
SATA HDD	Western Digital 2.5" SATA WD1200BEVS/P 120GB 5400RPM	
Primary IDE Master	HITACHI HTS424020M9AT00 44 pin IDE	
Primary IDE Slave	N/A	
CRT	ViewSonic E70"	
LCD	N/A	
Compact Flash	<u>Transcend CompactFlash 2GB</u>	
PCI-104	N/A	
Backplane	N/A	
Expansion Board	N/A	
Operating System	[] Linux-RedHat 9.0 or [] Fedora Core 4.0 [X] Fedora Core 8.0	1.3.4.5.6.7.8
	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..3.4.5.6.7.8
	Windows XP Professional Simplified-Chinese Version V2002 Service Pack 3	N/A
	Windows XP Professional Japanese Version V2002 Service Pack 2	N/A
	Windows Vista™ Ultimate English Version	1.3.4.5.6.7.8
	Windows 2000 Professional English Version V5.00.2195 Service Pack4	N/A
	Windows 2000 Professional Simplified-Chinese Version V5.00.2195 Service Pack4	N/A
	Windows 2000 Professional Japanese 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 : ATX-200805	N/A
	AT Power : AT-200703	N/A
	DC Input 9-30V (Phoenix connector 2pin)	1.3.4.5.6.7.8

Test Result for Certification

1. I/O Peripheral Function Test

I/O Peripheral Function Test –I/O Function	Result			Note
	Pass	Fail	N/A	
Floppy Connector / Driver A:			X	
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 2.1 Channel	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			

DVI Function	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	
DVI Function	X			
HDMI Output			X	
TV-out / S Terminal			X	
TV-out / AV Terminal			X	
Touch Screen – 8 Wire			X	
Touch Screen – 4/5 Wire			X	
DIMM Slots	X			
Watchdog IRQ n			X	
Watchdog Software Control	X			
FAN1 Connector			X	
FAN2 Connector			X	
Front Panel (CN15)	Result			
	Pass	Fail	N/A	
Power On Button	X			
IDE LED	X			
External Buzzer			X	
On Board Buzzer			X	
Power LED	X			
Reset Switch	X			
Jumpers Function	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 Connector & Function (CN16)	Result			
	Pass	Fail	N/A	
Standard AT Power Connector			X	
Standard ATX Power Connector			X	
5V Only Power Connector			X	
DC Input 9-30V (Phoenix connector 2pin)	X			
Standard AT Power Connector			X	
LAN Connector & Function	Result			
	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				
	Pass	Fail	N/A		
Mini PCI Slot				X	
PCI Slot				X	
PCI Express x1				X	
Mini PCI Express card				X	

3. Timer Accuracy Test

System Clock & RTC Clock Test				
Test Method	Margin for error	Result		
		Pass	Fail	N/A
System Clock in Power On Mode	±1 second during 24 hours	X		
RTC Clock in Power On Mode	±1 second during 24 hours	X		
RTC Clock in Power Off Mode	±1 second during 24 hours	X		
Watchdog Timer Test		Result		
		Pass	Fail	N/A
Time-out Interval	10 sec	X		
	20 sec	X		
	60 sec	X		
	120 sec	X		

4. Network HUB / LAN Connection Test

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

5. Hardware Compatibility

CPU Compatible Test							
CPU Type		FSB	Prime95 Version	Result			
				Pass	Fail	N/A	
Intel® Atom™ CPU N270 1.60 GHz		533 MHz	V2414	X			
Memory Compatibility Test							
Memory Brand	Memory Chipset	Frequency	Size	MemTest86 Version	Result		
					Pass	Fail	N/A
DSL	ELPIDA-E5108AJBG-6E-E	667	512MB	V211	X		
Audio Basic Function Test					Result		
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		
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		
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	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 G084SN05 V.3 / 8.4" / 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 G084SN05 V.3 / 10" / 800*600 / 24bit (4:3)	3.3v			X
	AU M170EG01 V.D/ 17" / 1280*1024 / 48bit (4:3)	5V			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	5V			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
ADAPTEC Ultra160 SCSI ASC-29160	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
Tekram TR-822 Serial ATA 150 [SA-001] + SATA HDD Seagate ST3120026AS 120GB	SATA 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

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
Adaptec AAR-1430SA SATAII HostRAID Controllers PCI-Express x4 RAID 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

HDD Compatibility Test			
IDE / SATA Model	Result		
	Pass	Fail	N/A
HITACHI HTS424020M9AT00 44 pin IDE	X		
Western Digital 2.5" SATA WD1200BEVS/P 120GB 5400RPM	X		
USB CD/DVD-ROM Compatibility Test			
Model	Result		
	Pass	Fail	N/A
LITE-ON LITEON DX-20A4PU USB-DVD RW	X		
SONY USB2.0 DVD-R/W DRX-830UL	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
Install Windows XP Professional from HighSpeed Device: SONY USB2.0 DVD-R/W DRX-830UL	X		
USB Device Full Loading Test	Result		
	Pass	Fail	N/A
Model			
Mitsumi FLL3.5 D353GUE/FUE	X		
USB HDD 20GB	X		
USB Card Reader	X		
USB Mouse	X		
USB Thumb drive Sandisk 1G	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	
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	IDE 40 Pin			X	
Transcend / TS512MDOM44V / 512MB	IDE 44 Pin			X	

Mini PCI Card Compatibility Test				
Model (Use PCI-104 transform board: MBC-1TM Rev.A1.0)	Interface	Result		
		Pass	Fail	N/A
GM-100 WLAN 11g Mini PCI Card (Model: Sky Thru GC-100)	LAN			X
GM-101 WLAN 11b/g 54Mbps Mini PCI Card (Model: VNT6655AM)	LAN			X
PER-C20S SATA RAID MiniPCI Card (Silicon Image Sil3512ECTU128 QF7227.1-1)	SATA			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
LPT2				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	

6. O.S. Compatibility Test

Installation Operation System Compatibility Test			Result		
			Pass	Fail	N/A
[] Linux-RedHat 9.0 or [] Fedora Core 4.0 [X] Fedora Core 8.0			X		
Windows Server 2003 English Version / Standard Edition 5.2.3790					X
Windows Server 2003 English Version /Standard x64 Edition					X
Windows Vista™ Ultimate English Version					X
Windows XP Professional English Version V2002 Service Pack 3			X		
Windows Vista™ Ultimate English Version			X		
Windows 2000 Professional English Version V5.00.2195 Service Pack4					X
Windows Server 2000 English Version					X
Windows 98SE English Version V4.10.2222A					X
DOS 6.22 English Version					X
Utility and Driver Test					
OS	Drivers Version		Result		
			Pass	Fail	N/A
Linux-Fedora Core 8	Chipset Software	Use Default Driver	X		
	Graphics Media	Use Default Driver	X		
	LAN Driver	Use Default Driver	X		
	Audio Driver	Use Default Driver	X		
Windows Server 2003 English Version Standard Edition 5.2.3790	Chipset Software	N/A			X
	Graphics Media	N/A			X
	LAN Driver	N/A			X
	Audio Driver	N/A			X
Windows Vista™ Ultimate English Version	Chipset Software	N/A			X
	Graphics Media	N/A			X
	LAN Driver	N/A			X
	Audio Driver	N/A			X
Windows XP Professional English Version V2002 Service Pack 3	Chipset Software	Intel ® Chipset Device Software 9.0.0.1008 (5/01/2008)	X		
	Graphics Media	Mobile Intel ® 945 Express Chipset Family 6.14.10.4926 (2/15/2008)	X		
	LAN Driver	Intel ® 82574L Gigabit Network Connection 10.3.49.0 (8/5/2008)	X		
	Audio Driver	Realtek AC97 Audio 5.10.0.6280 (1/23/2008)	X		
Windows Vista™ Ultimate English Version	Chipset Software	Intel ® Chipset Device Software 9.0.0.1008 (5/01/2008)	X		
	Graphics Media	Mobile Intel ® 945 Express Chipset Family 7.14.10.1504 (6/18/2008)	X		
	LAN Driver	Intel ® 82574L Gigabit Network Connection 10.3.49.0 (8/5/2008)	X		
	Audio Driver	Realtek AC97 Audio 6.0.1.6285 (3/25/2008)	X		
Windows 2000 Professional English Version V5.00.2195 Service Pack 4	Chipset Software	N/A			X
	Graphics Media	N/A			X

	LAN Driver	N/A			X
	Audio Driver	N/A			X
Windows Server 2000 English Version	Chipset Software	N/A			X
	Graphics Media	N/A			X
	LAN Driver	N/A			X
	Audio Driver	N/A			X
Windows 98SE English Version V4.10.2222A	Chipset Software	N/A			X
	Graphics Media	N/A			X
	LAN Driver	N/A			X
	Audio Driver	N/A			X

7. 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			
AT Power Management Test	X		
ATX 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 (PXE)	X		
Supervisor / User Password Test	X		
CRT / LCD / 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
Swap Floppy Drive & Boot up Floppy Seek Function Test			X
USB Onboard Device Function Test	X		
COM Address / IRQ Test	X		
LPT Address / IRQ Test			X
BIOS AWDFLASH Program Test	X		

8. Performance Test

Platform Information

CPU Board	GENE-9455
Carrier Board	N/A
BIOS	AEC-6831 BIOS Rev 1.0 (04/30/2009)
Operating System	English Windows XP Professional Service Pack 3 V2002
CPU	Intel ® Atom™ 1.60 GHz (133*12)
Memory	DSL ELPIDA-E5108AJBG-6E-E 512MB
SATA HDD	Western Digital 2.5" SATA WD1200BEVS/P 120GB 5400RPM
Primary IDE Master	HITACHI HTS424020M9AT00 44 pin IDE
Primary IDE Slave	N/A
CRT	ViewSonic E70
Compact Flash	N/A
Backplane	N/A
Riser Card	N/A
Expansion Board	N/A
Chipset Software	Intel ® Chipset Device Software 9.0.0.1008 (5/01/2008)
Graphics Media	Mobile Intel ® 945 Express Chipset Family 6.14.10.4926 (2/15/2008)
LAN Driver	Intel ® 82574L Gigabit 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 Input 9-30V (Phoenix connector 2pin)

Test result:

Final Reality V1.01—BenchMark Test (Reality Marks)		
2D Image	18.80	
3D	3.96	
Bus transfer	27.55	
Overall	11.95	
3Dmark2001SE Pro (Demo version)		
3Dmark2001SE Build 330_Benchmark mode	2758	
PCMark2002		
CPU	2649	
Memory	6157	
HDD	1121	
PCMark05		
PCMark	N/A	
CPU	1495	
Memory	2414	
Graphics	N/A	
HDD	3883	
3Dmark2003 v360		
3Dmark Score	690	