

Report NO:10I010007

FES-6110

**Intel ATOM - Flexible Embedded System for Digital Signage
application**

P5 Test Report

Summary	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> Pass with Deviation Comment: _____			
	Test Result Summary			
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	0
Defect Unsolved	0	0	0	0

Issue date	Approval	Test Engineer
2010 / 05 / 03	Jansin Lee	Allen Hsu

Platform Information:

Product Model	FES-6110
Description	Intel ATOM - Flexible Embedded System for Digital Signage application
Test Configuration	<ul style="list-style-type: none"> ↳ New product <ul style="list-style-type: none"> ↳ CPU Board : IMBE-945G Rev A1.0 ↳ Carrier Board : N/A ↳ Riser Card : PER-T162 A0.1 ↳ BIOS : FES-6110 BIOS Rev 1.0(04/15/2010) ↳ Chipset : <ul style="list-style-type: none"> ↳ CPU : Onboard Intel Atom CPU N270 @ 1.60GHz / FSB 533MHz ↳ North Bridge : Intel i945GSE ↳ South Bridge : Intel ICH7M ↳ VGA Chipset : Intel 945 internal Chipset ↳ Audio Chipset : VIA VT1708B CE Audio ↳ Ethernet Chipset : Realtek RTL8111C Ethernet ↳ Remark : QE NPDP P5 Report for FES-6110

Item	Device Information	Test Item
PCB Model / Version	FES-6110 A1.0	1,2,3,4,5,6,7,8
BIOS / Version	FES-6110 BIOS Rev 1.0(04/15/2010)	1,2,3,4,5,6,7,8
CPU Type	Onboard Intel Atom CPU N270 @ 1.60GHz / FSB 533MHz	1,2,3,4,5,6,7,8
Memory Type	Transcend DDR2 SO-DIMM 667 1GB - ELPIDA E5108AJBG-6E-E	1,2,3,4,5,6,7,8
SATA HDD	Transcend 2.5" SATA-2 SSD 32GB - TS32GSSD25S-S	1,2,3,4,5,6,7,8
Monitor	HANNS.G LCD Monitor HK191H - HSG1049	1,2,3,4,5,6,7,8
Compact Flash	Transcend CF 2GB	1,2,3,4,5,6,7,8
Riser Card	N/A	N/A
Backplane	N/A	N/A
OS Install	Linux Fedora 12 & Windows Vista sp2 & Windows XP sp3	1,2,3,4,5,6,7,8
Power Supply	AC Power:EDAC POWER ELEC - EA1050A-120 AC INPUT:100-240V ~1.8A / DC OUTPUT: 12V ~5.0A	1,2,3,4,5,6,7,8

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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 specifications or no test equipment

The test report would be tested and updated after version changed.

Test Result for Certification

1. I/O Peripheral Function Test

I/O Peripheral Function Test –I/O Function	Result		
	Pass	Fail	N/A
Floppy Connector / Driver A:			X
IDE Channel 0 Master	X		
IDE Channel 0 Slave			X
IDE Channel 1 Master	X		
IDE Channel 1 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	X		
COM 1-232			X
COM 2-232	X		
COM 2-422	X		
COM 2-485	X		
COM 3-232			X
COM 4-232			X
PS/2 Mouse & Keyboard	X		
Audio Connector	X		
LPT 1			X
IRDA			X
USB 1/2 Ports	X		
USB 3/4 Ports	X		
USB 5/6 Ports	X		
USB 7/8 Ports			X
USB 2.0 1/2 Ports	X		
USB 2.0 3/4 Ports	X		
USB 2.0 5/6 Ports	X		
USB 2.0 7/8 Ports			X
DIO Connector	X		
PC/104			X
PC/104-Plus			X
PCI-104			X
CD-In Connector			X
TFT TTL LCD			X

TFT LVDS LCD			X
CRT	X		
TV-out / S Terminal			X
TV-out / AV Terminal			X
DVI	X		
HDMI			X
Component Video : Y/ Pb /Pr			X
Touch Screen – 4 Wire			X
Touch Screen – 5 Wire			X
Touch Screen – 8 Wire			X
DIMM Slots	X		
Watchdog Software Control	X		
CPU FAN Connector			X
System FAN Connector			X
AC in Connector	X		
Power Button	X		
Front Panel	Result		
	Pass	Fail	N/A
Power on Button	X		
IDE LED	X		
External Buzzer	X		
On Board Buzzer			X
Reset Switch	X		
Power LED	X		
Power on Button	X		
Jumpers Function	Result		
	Pass	Fail	N/A
Clear CMOS	X		
Power Connector & Function	Result		
	Pass	Fail	N/A
ATX Power Connector			X
AT Power Connector			X
ATX Power Connector(Short PS-ON and GND to simulate AT mode)			X
AC Power	X		
ATX 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 Slots			X
PCI Slots			X
PCI Express			X
Mini PCI Express card (Mini Card) - BROADCOM Mini Card-BCM70010KFB0G	X		
Express card			X

2. Power Consumption Test

Test Method	Result		
	Pass	Fail	N/A
AC Power Connector- Power On/Off for 10 times in DOS	X		
ATX Connector - Power On/Off for 10 times in DOS			X
AT Connector - Power On/Off for 10 times in DOS			X
5V Only - Power On/Off for 10 times in DOS			X

3. 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		
	120 sec	X		

4. Network HUB / LAN Connection Test

Location		LED Type				Result		
						Pass	Fail	N/A
LAN1 LED		Link / Speed LED				X		
		Active LED				X		
LAN2 LED		Link / Speed LED						X
		Active LED						X
Location	Speed	HUB Type	Cable Length	HUB Speed	Onboard LAN Speed	Result		
						Pass	Fail	N/A
Onboard LAN1	10/100/1000 Mbps	D-Link DGS-1008T	100M	1GBps	1000	X		
		Accton DeskTop-3005	100M	100 MBps	100	X		
		SVEC FD916H (10 Mbps HUB)	100M	10 MBps	10	X		
Onboard LAN2	10/100/1000 Mbps	D-Link DGS-1008T	100M	1GBps	1000			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		
Onboard Intel Atom CPU N270 @ 1.60GHz	533 MHz	V 25.90	X				
Memory Compatibility Test							
Memory Brand	Memory Chipset	Frequency	Size	MemTest86 Version	Result		
					Pass	Fail	N/A
A-DATA DDR2 SO-DIMM	A-DATA (AD29608A8A-3EG)	667	1GB	V4.00	X		
Transcend DDR2 SO-DIMM	Transcend (7WE17 D9HNL)	667	2GB	V4.00	X		
Transcend DDR2 SO-DIMM	ELPIDA (E5108AJBG-6E-E)	667	1GB	V4.00	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			Condenser		X		
MIC Sound Recorder			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
8-channel mode for 7.1 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
	Data Image 7" / 800*480 / 18bit (16:9)	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
	Toshiba /12.1"/1280 x 768 x 18bit (16:9)	3.3V			X
	AU M170EG01 / 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
	AUO M190PW01 V0 / 19"/1440X900/48 bit	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
Creative Sound BLASTER Live5.1	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
3Com 3C905C-TXM ETHERLINK 10/100 PCI	LAN Card			X
D-Link DWL-520+ Wireless LAN	LAN Card			X
ADAPTEC 1420SA RoHS 4-Port SATA II RAID	RAID Card			X
D-Link DU-520 USB 2.0	USB Hub Card			X

ISA Slot Function Test

	Result		
	Pass	Fail	N/A
NE2000 Compatible LAN Card (RTL8019AS)			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

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
Mini PCI-Express Function Test	Pass	Fail	N/A
BROADCOM Mini Card-BCM70010KFB0G	X		
HDD Compatibility Test			
Model	Result		
	Pass	Fail	N/A
FUJITSU 2.5" SATA H.D 80G ~ MHZ2080BH G2	X		
Transcend SSD 16G - TS16GSSD25S	X		
IDE Cable Function test			
IDE Model	Result		
	Pass	Fail	N/A
40 Pin Cable ATA100			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: USB2.0 DRW-1604P-D/WHT/G/ASUS	X		
USB Device Full Loading Test	Result		
	Pass	Fail	N/A
BENQ 4824WI-ON2	X		
Mitsumi FLL3.5 D353GUE/FUE	X		
USB HDD 20GB	X		
USB Card Reader	X		
USB Mouse	X		

USB Flash drive Transcend 2GB		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	
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: 802 / 803 /804		X			
Output Address: 802 / 803 /804		X			
VCC: (5V) , Position : (802 / 803 /804)		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
PCI/104 Express	AAEON PER-123			X	
On-Board SCSI Function Test					
Model	Interface	Result			
		Pass	Fail	N/A	
RICOH MP7060S	SCSI-CDROM 24X			X	
Fujitsu MCB3064SS	SCSI-MO Device			X	
Seagate 32155W	SCSI-HDD 2.15GB			X	
IBM DNES-309170	SCSI-HDD 9GB			X	
Seagate ST39205LW/P	9GB / Ultra160 / LVD			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	Interface	Result		
		Pass	Fail	N/A
PCI 10/100 LAN Mini PCI Card (Model:PER-C10L)	LAN			X
GM-101 WLAN 11b/g 54Mbps Mini PCI Card (Model: VNT6655AM)	WLAN			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			
COM3				X
COM4				X
COM5				X
COM6				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 Typell 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-Red Hat 9.0 or [X] Fedora Core 12 - Kernel:2.6.31		X			
Windows Vista TM Ultimate English Version		X			
Windows Vista TM Ultimate x64 Edition English Version				X	
Windows XP Professional English Version V2002 Service Pack 3		X			
Windows XP Professional English Version /Standard x64 Edition				X	
Windows 2000 Professional English Version V5.00.2195 Service Pack4				X	
Windows 2000 Professional Simplified-Chinese Version V5.00.2195 Service Pack4				X	
Windows 2000 Professional Japanese Version V5.00.2195 Service Pack4				X	
Windows Server 2000 English Version				X	
Windows Server 2003 English Version / Standard Edition 5.2.3790				X	
Windows Server 2003 English Version /Standard x64 Edition				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-Fedora12/Kernel- 2.6.31	Chipset Software	Default Driver	X		
	Graphics Media	Default Driver	X		
	LAN Driver	Default Driver	X		
	Audio Driver	Default Driver	X		
Windows Vista TM Ultimate English Version	Chipset Software	Intel(R) Chipset Device Software ~ 9.0.0.1008~03/01/2008	X		
	Graphics Media	Mobile Intel(R) 945 Express Chipset Family ~ 7.14.10.1504 ~ 06/18/2008	X		
	LAN Driver	Realtek PCIe GBE Family Controller ~ 6.223.525.2009 ~ 5/25/2009	X		
	Audio Driver	VIA High Definition Audio ~ 6.0.1.1550 ~ 10/22/2008	X		
Windows Vista TM Ultimate x64 Edition English Version	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows XP Professional English Version	Chipset Software	Intel(R) Chipset Device Software ~ 9.0.0.1008~03/01/2008	X		

V2002 Service Pack 3	Graphics Media	Mobile Intel(R) 945 Express Chipset Family ~ 6.14.10.4926 ~ 02/15/2008	X		
	LAN Driver	Realtek PCIe GBE Family Controller ~ 5.728.604.2009 ~ 06/04/2009	X		
	Audio Driver	VIA High Definition Audio ~ 6.0.1.1550 ~ 10/22/2008	X		
Windows XP Professional x64 Edition English Version Service Pack 2 V2002	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows 2000 Professional English Version V5.00.2195 Service Pack 4	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows 2000 Professional Simplified-Chinese Version V5.00.2195 Service Pack4	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows 2000 Professional Japanese Version V5.00.2195 Service Pack4	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows Server 2000 English Version	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows Server 2003 English Version Standard Edition 5.2.3790	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows Server 2003 English Version Standard x64 Edition	Chipset Software				X
	Graphics Media				X
	LAN Driver				X
	Audio Driver				X
Windows 98SE English Version V4.10.2222A	Chipset Software				X
	Graphics Media				X



Computing Platform Service Partner

P5-1001
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	LAN Driver				
	Audio Driver				

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			
ATX Power Management Test	X		
AT 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 / 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		

8. Performance Test

Platform Information

Model Name	FES-6110
CPU Board	IMBE-945G Rev A1.0
Carrier Board	N/A
BIOS	FES-6110 BIOS Rev 1.0(04/15/2010)
Operating System	Windows XP Professional Service Pack 3
CPU	Onboard Intel Atom CPU N270 @ 1.60GHz / FSB 533MHz
Memory	Transcend DDR2 SO-DIMM ~ 667 ~2GB (7WE17 D9HNL)
SATA HDD	FUJITSU 2.5" SATA H.D 80GB ~ MHZ2080BH
CRT	View Sonic 17" CRT E70
Chipset Software	Intel(R) Chipset Device Software ~ 9.0.0.1008~ 03/01/2008
Graphics Media	Mobile Intel(R) 945 Express Chipset Family ~ 6.14.10.4926 ~ 02/15/2008
LAN Driver	Realtek PCIe GBE Family Controller ~ 5.728.604.2009 ~ 06/04/2009
Audio Driver	VIA High Definition Audio ~ 6.0.1.1550 ~ 10/22/2008
Power Supply or Adapter	AC-Adapter : EDAC POWER ELEC - EA1050A-120 AC INPUT:100-240V ~1.8A / DC OUTPUT: 12V ~5.0A

Test result:

Testing Software	Result	Unit
PCMark2002 (1024*768)		
CPU	2648	
Memory	6250	
HDD	1315	
Final Reality V1.01—BenchMark Test (1024*768)		
2D image	20.44	
3D	4.10	
Bus transfer	32.52	
Overall	13.26	Reality marks
3Dmark2001 (1024*768)		
3Dmark2001SE Build 330_Benchmark mode	2837	
Testing Software	Result	Unit
PCMark05 (1024*768)		
PCMark	N/A	PCMarks
CPU	1495	
Memory	2398	
Graphics	N/A	

HDD	4499	
3Dmark2003 v360 (1024*768)		
3Dmark Score	706	
CPU Score	241	

Remark: Please uses below two performance software to test main board if the chipset is new enough.
(ex. Intel Core 2 Duo CPU)