

FES-5130

Intel ATOM Flexible Embedded System for Transportation Controller 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 <hr style="width: 100%;"/> 2010 / 09 / 21	Approval <hr style="width: 100%;"/> Jansin Lee	Test Engineer <hr style="width: 100%;"/> Allen Hsu
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Platform Information:

Product Model	FES-5130
Description	Intel ATOM Flexible Embedded System for Transportation Controller application
Test Configuration	<input checked="" type="checkbox"/> New product <input checked="" type="checkbox"/> CPU Board : IMBE-945G Rev A1.1 <input checked="" type="checkbox"/> Carrier Board : N/A <input checked="" type="checkbox"/> BIOS : FES-5130 BIOS Rev 1.0(08/20/2010) <input checked="" type="checkbox"/> Chipset : <input checked="" type="checkbox"/> CPU : Onboard Intel ATOM CPU N270 1.60GHz – 45nm – FSB 533MHz <input checked="" type="checkbox"/> North Bridge : Intel i945GSE <input checked="" type="checkbox"/> South Bridge : Intel ICH7-M <input checked="" type="checkbox"/> VGA Chipset : Mobile Intel 945 Express Chipset family <input checked="" type="checkbox"/> Audio Chipset : VIA VT1708B CE Audio <input checked="" type="checkbox"/> Ethernet Chipset : Realtek RTL811C Ethernet <input checked="" type="checkbox"/> I/O Chipset : ITE 8712F <input checked="" type="checkbox"/> Remark : P5 Test Report for FES-5130

Item	Device Information	Test Item
System Model	FES-5130	1~8
PCB Model / Version	IMBE-945G Rev A1.1	1~8
BIOS / Version	FES-5130 BIOS Rev 1.0(08/20/2010)	1~8
CPU Type	Onboard Intel ATOM CPU N270 1.60GHz – 45nm – FSB 533MHz	1~8
Memory Type	Transcend DDR2 SO-DIMM 1GB - Transcend TQ123EJF6 T0743	1~8
SATA HDD	Transcend SSD 16G - TS16GSSD25S	1~8
Monitor	HANNS.G LCD Monitor HK191H - HSG1049	1~8
Compact Flash	Transcend CF 2GB	1~8
OS Install	Windows XP Professional English Version V2002 Service Pack 3 Windows 7 Ultimate English Version 32Bit Fedora Core 9 -Kernel 2.6.25	1~8
Power Supply	AC/DC Adapter : FSP GROUP INC. FSP060-DBAB1 AC input:100-240V~1.5A,50-60Hz DC output:12.0V=5.0A MAX(60W MAX)	1~8

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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
RAID 0 Function Test			X
RAID 1 Function 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		
DOC (Disk On Chip)			X
DOM (Disk On Module) – 40 Pin			X
DOM (Disk On Module) – 44 Pin			X
COM 1-232	X		
COM 2-232	X		
COM 2-422	X		
COM 2-485	X		
COM 3 ~ COM7 -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
Front Panel	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
Keyboard Lock				X
Jumpers Function	Result			
		Pass	Fail	N/A
Clear CMOS		X		
Power Connector & Function	Result			
		Pass	Fail	N/A
AC/DC Power		X		
ATX Power Connector				X
AT Power Connector				X
LAN Connector & Function	Result			
		Pass	Fail	N/A
LAN Link / Speed / 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 (For LAN2)		X		
Express card				X

2. Power Connector Test (110V / 240V)

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

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 – 45nm	533 MHz	V 260.1	X				
Memory Compatibility Test							
Memory Brand	Memory Chipset	Frequency	Size	MemTest86 Version	Result		
					Pass	Fail	N/A
Transcend DDR2 SO-DIMM 1GB	Transcend TQ123EJF6 T0743	667	1GB	V4.10	X		
Audio Basic Function Test					Result		
					Pass	Fail	N/A
System Sound					X		
CD_In							X
Play Sound Recorder					X		
Line Out					X		
Line In					X		
MIC Speaker			Condenser		X		
MIC Sound Recorder			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
8-channel mode for 7.1 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	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 B104SN02 V.0 / 10.4" / 800*600 / 18bit (4:3)	3.3V			X
	AUO G084SN05 v7 / 8.4" / 800*600 / 24bit (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)	5V			X
	Toshiba /12.1"/1280 x 768 x 18bit (16:9)	5V			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	12V			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
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
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-E LAN Card for LAN extension Realtek811C Chip	X		
HDD Compatibility Test			
Model	Result		
	Pass	Fail	N/A
Seagate 2.5" SATA H.D 80GB – 5400 RPM – ST980817SM	X		
Seagate 2.5" SATA H.D 120GB – 7200 RPM – ST9120823AS	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
Model			
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	
Digital I/O Connector Test		Result			
		Pass	Fail	N/A	
Input Address: 802/803/804H		X			
Output Address: 802/803/804H		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
PCI/104 Express	AAEON PER-123				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 (COM1~COM7)		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		
RS-232 for COM1~COM7		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
[X] Fedora Core 9 -Kernel 2.6.25			X		
Windows 7 Ultimate English Version 32Bit			X		
Windows XP Professional English Version V2002 Service Pack 3 32Bit			X		
Utility and Driver Test					
OS	Drivers Version		Result		
			Pass	Fail	N/A
Linux-Fedora 9 Kernel- 2.6.25	Chipset Software	Default Driver	X		
	Graphics Media	Default Driver	X		
	LAN Driver	Default Driver	X		
	Audio Driver	Default Driver	X		
Windows 7 Ultimate English Version 32Bit	Chipset Software	Intel Chipset Device Software – 9.1.1.1025 – 12/14/2009	X		
	Graphics Media	Mobile Intel 945 Express Chipset Family - 8.15.10.1930 – 09/23/2009	X		
	LAN Driver	Realtek PCIe GBE Family Controller – 7.18.322.2010 – 2010/03/22	X		
	Audio Driver	VIA High Definition Audio – 6.0.1.7900 – 2010/01/11	X		
Windows XP Professional English Version V2002 Service Pack 3	Chipset Software	Intel Chipset Device Software – 9.0.0.1008 – 05/01/2008	X		
	Graphics Media	Mobile Intel 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		

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 / 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
USB Onboard Device Function Test	X		
BIOS AWDFLASH Program Test	X		

8. Performance Test

Platform Information

System	FES-5130
CPU Board	IMBE-945G Rev A1.1
Carrier Board	N/A
BIOS	FES-5130 BIOS Rev 1.0(08/20/2010)
Operating System	Windows XP SP3
CPU	Intel ATOM CPU N270 1.60GHz – 45nm – FSB 533MHz
Memory	Transcend DDR2 SO-DIMM 1GB 667 – Transcend TQ123EJF6 T0743
SATA HDD	FUJITSU 2.5" SATA H.D 80GB – MHY2080BH
CRT	HANNS.G LCD Monitor HK191H - HSG1049 -1440*900
Chipset Software	Intel Chipset Device Software – 9.0.0.1008 – 05/01/2008
Graphics Media	Mobile Intel 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	FSP GROUP INC. AC/DC Adapter – FSP060-DBAB1 AC INPUT:100-240V~1.5A,50-60Hz DC INPUT:12.0V=5.0A MAX

Test result:

Testing Software	Result	Unit
PCMark2002		
CPU	2651	
Memory	6125	
HDD	1080	
Final Reality V1.01—BenchMark Test		
2D image	20.44	
3D	4.10	
Bus transfer	23.54	
Overall	11.92	
3Dmark2001		
3Dmark2001 Score	2804	
Testing Software	Result	Unit
PCMark05		
PCMark	N/A	
CPU	1498	
Memory	2391	

Graphics	513	
HDD	3967	
3Dmark2003 v360		
3Dmark Score	704	
CPU Score	246	