

QE 【Expansion Board】 P5 Verification Test Plan

Release No : 08E010010

Product Model	PER-T099			
Description	PCI Express Add-On Card (ECX Expansion Card)			
Test Configuration	<input checked="" type="checkbox"/> Expansion Card <input checked="" type="checkbox"/> PCB(1) : PER-T099 A0.1 (PCI Express + LVDS + 2 COM) <input checked="" type="checkbox"/> PCB(2) : PER-T099 A0.1 (PCI Express Mini Card + LVDS + 2 COM) <input checked="" type="checkbox"/> PCB(3) : PER-T099 A0.1 (DVI + 2 COM) <input checked="" type="checkbox"/> CPU Board Chipset <input checked="" type="checkbox"/> PCB : GENE-9310 A1.0-A <input checked="" type="checkbox"/> BIOS : GENE-9310 BIOS Rev.2.0 (01/24/2008) <input checked="" type="checkbox"/> North Bridge : Intel 945GME <input checked="" type="checkbox"/> South Bridge : ICH7-M <input checked="" type="checkbox"/> VGA Chipset : Intel 945GME Integrated VGA <input checked="" type="checkbox"/> Audio Chipset : Realtek ALC655 5.1CH AC97 CODEC <input checked="" type="checkbox"/> Ethernet Chipset : Intel 82573L 10/100/1000 Base-TX <input checked="" type="checkbox"/> I/O Chipset : IT8712 <input checked="" type="checkbox"/> TV Chipset : Intel 945GME Integrated VGA <input checked="" type="checkbox"/> Remark : QE P5 report for PER-T099 A0.1 ECX Expansion Board			
Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	1	10	0
Defect Unsolved	0	0	0	0
<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> Pass with Deviation Comment: _____ _____				

2008/03/18

Issue date

Wenyuan Yang

Manager

JOJO Lin

Test Engineer

Platform Information:

Item	Device Information	Test Item
PCB Model / Version	GENE-9310 A1.0-A	
BIOS / Version	GENE-9310 BIOS Rev.2.0 (01/24/2008)	
Expansion Card	PER-T099 A0.1	
CPU Type	Intel Core 2 Duo CPU 2.16 GHz / 667MHz / 4MB T7400 (Merom)	
Memory Type	Transcend DDR2-667 SODIMM SDRAM 2GB (7DE12 D9HNL)	
SATA	Seagate ST380815AS 80GB 3.5" SATA HDD	
Primary IDE Master	N/A	
Primary IDE Slave	N/A	
CRT	ViewSonic E70	
LCD	AUO G065VN01 V.0 / 6.5" / 640x480 / 18bit (4:3)	
	AUO G065VN01 V.0 / 6.5" / 640x480 / 24bit (4:3)	
	AU G084SN05 V.3 / 8.4" / 800*600 / 18bit (4:3)	
	AU G150XG01 V.0 / 15" / 1024*768 / 18bit (4:3)	
	AU M150XN07 V.2 / 15" / 1024x768 / 24bit (4:3)	
	AU M170EG01 V.D/ 17" / 1280*1024 / 48bit (4:3)	
	AU M170XW01 V.1 / 17" / 1280x768 / 24bit (16:9)	
	AUO T260XW02 / 26" / 1366x768 / 24bit	
	AU M201UN02 V.5 / 20.1" / 1600x1200x48bit	
	AUO T370HW01 / 37" / 1920x1080 / 48bit	
Compact Flash	N/A	
Backplane	N/A	
Riser Card	N/A	
Operating System	Windows XP Professional English Version V2002 Service Pack 2	3
	MS-DOS	1,2,3,4
Power Supply	ATX Power (connected to phoenix power connector)	1,2,3,4
	AT Power	N/A

1. I/O Peripheral Function Test

Platform Information:

PCB Model / Version	GENE-9310 A1.0-A
BIOS	GENE-9310 BIOS Rev.2.0 (01/24/2008)
Expansion Card	PER-T099 A0.1
Operating System	Windows XP Professional English Version V2002 Service Pack 2 MS-DOS
CPU Type	Intel Core 2 Duo CPU 2.16 GHz / 667MHz / 4MB T7400 (Merom)
Memory	Transcend DDR2-667 SODIMM SDRAM 2GB (7DE12 D9HNL)
SATA HDD	Seagate ST380815AS 80GB 3.5" SATA HDD
Primary IDE Master	N/A
Primary IDE Slave	N/A
CRT	ViewSonic E70
LCD	List as following
Compact Flash	N/A
Backplane	N/A
Riser Card	N/A
Chipset Software	Intel® Chipset Software Installation Utility 8.3.1.1009
Graphics Media	Mobile Intel® 945GM Express Chipset Family 6.14.10.4864
LAN Driver	Intel® PRO/1000 PL Network Connection 9.10.8.0
Audio Driver	Realtek AC'97 Audio 5.10.0.6270
Touchscreen Driver	N/A
Power Supply	PRT PRM400 ATX Power Supply

The Result:

I/O Function	Result			Note
	Pass	Fail	N/A	
Expansion board 140 pins slot	X			CN1
DVI	X			CN2
LVDS(1)-LCD Connector	X			CN3
Power Connector (Reserved for PCIEx1 Slot)	X			CN4
COM 1-232	X			CN11 on GENE-9310 A1.0-A
COM 2-232	X			CN9 on GENE-9310 A1.0-A
COM 2-422	X			CN9 on GENE-9310 A1.0-A
COM 2-485	X			CN9 on GENE-9310 A1.0-A There is no autoflow control curcrit for COM2 on GENE-9310. We will add this function on next version
COM 2-Ring /+5V /+12V	X			CN9 on GENE-9310 A1.0-A
COM 3-232	X			CN5 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)
COM 3-Ring /+5V /+12V	X			CN5 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)
COM 4-232	X			CN6 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)
COM 4-Ring /+5V /+12V	X			CN6 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)
COM 5-232			X	
COM 6-232			X	
Jumpers Function	Result			Notes
	Pass	Fail	N/A	

LVDS(1)-LCD(CN3) Voltage Selection	X			JP1
COM3 Ring/+5V/+12V Selection	X			JP2 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)
COM4 Ring/+5V/+12V Selection	X			JP3 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)
PCI Connector & Function	Result			Notes
	Pass	Fail	N/A	
PCI Express	X			CN7
PCI Express Mini card	X			CN8

2. Hardware Compatibility

2-1. On Board LCD Function Test

- Test Point: 1. Please pay more attention to panel color, resolution, and shift issue when you test LCD
2. Check LCD display in POST and Windows mode

Test Result :

LVDS Panel connected to PER-T099 A0.1 (PCI Express + LVDS + 2 COM)

TFT LCD Model		Result			Note
		Pass	Fail	N/A	
LVDS	AUO G065VN01 V.0 / 6.5" / 640x480 / 18bit (4:3)	X			LM-200604 / 3.3V
	AUO G065VN01 V.0 / 6.5" / 640x480 / 24bit (4:3)	X			LM-200608 / 3.3V
	AU G084SN05 V.3 / 8.4" / 800*600 / 18bit (4:3)	X			LM-200703 / 3.3V
	AU G150XG01 V.0 / 15" / 1024*768 / 18bit (4:3)	X			
	AU M150XN07 V.2 / 15" / 1024x768 / 24bit (4:3)	X			LM-200603 / 3.3V
	AU M170EG01 V.D/ 17" / 1280*1024 / 48bit (4:3)	X			LM-200704 / 5V
	AU M170XW01 V.1 / 17" / 1280x768 / 24bit (16:9)	X			LM-200606 / 5V
	AUO T260XW02 / 26" / 1366x768 / 24bit	X			
	AU M201UN02 V.5 / 20.1" / 1600x1200x48bit	X			
	AUO T370HW01 / 37" / 1920x1080 / 48bit	X			

2-2. PCI-Express Function Test

PCI-Express Device

PCI-Express x1	Install Driver		Function Test		N/A	Note
	Pass	Fail	Pass	Fail		
SUNIX SATA1414 VER 1.1 PCI-Express x1 SATA Card	X		X			
SksKonnct SK-9E21D 10/100/1000 Base-T Adapter PCI-Express x1 LAN Card	X		X			
Express card	Install Driver		Function Test			
	Pass	Fail	Pass	Fail		
PCI Express Mini card (CY7C68013A-S6PVXC)	X		X			[PEC-200501]

2-3. COM Port Function Test

- Test Point: 1. Use BurnIn Test V5.1 Pro to test COM port reliability
2. Add all COM port of test machine into "COM Ports Selected" table and set "detect and loopback test" in Set Preferences→Serial Ports
3. Attach COM port loopbacks to each COM connector then burn in overnight
4. Com port status must be error free after finish test

BurnIn Test V5.1 Pro	Result			Note
	Pass	Fail	N/A	
COM1	X			CN11 on GENE-9310 A1.0-A
COM2	X			CN9 on GENE-9310 A1.0-A
COM3	X			CN5 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)
COM4	X			CN6 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)
COM5			X	
COM6			X	

Remark: COM port burns in for 63 hours

2-4. COM/LPT Ports & RS-232/422/485 Function Test

Test Result:

Basic Function Test					
Test Item		Result			Note
		Pass	Fail	N/A	
RS-422 for COM2		X			CN11 on GENE-9310 A1.0-A Use loopback and WINSSD.exe to test RS-422 in Windows
RS-485 for COM2		X			CN9 on GENE-9310 A1.0-A There is no autoflow control curcrit for COM2 on GENE-9310. We will add this function on next version
COM1	Serial Mouse	X			CN11 on GENE-9310 A1.0-A
	Serial Modem	X			
COM2	Serial Mouse	X			CN9 on GENE-9310 A1.0-A
	Serial Modem	X			
COM3	Serial Mouse	X			CN5 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)
	Serial Modem	X			
COM4	Serial Mouse	X			CN6 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)
	Serial Modem	X			
COM5	Serial Mouse			X	
	Serial Modem			X	
COM6	Serial Mouse			X	
	Serial Modem			X	

3. O.S. Compatibility Test

3-1. Windows XP Professional English Version

[] No Support

Driver Information:

Chipset Software	Intel ® Chipset Software Installation Utility 8.3.1.1009
Graphics Media	Mobile Intel® 945GM Express Chipset Family 6.14.10.4864
LAN Driver	Intel® PRO/1000 PL Network Connection 9.10.8.0
Audio Driver	Realtek AC'97 Audio 5.10.0.6270

Install OS to []IDE [X]SATA HDD:

Installation	Result			Note
	Pass	Fail	N/A	
English Windows XP Professional Service Pack 2 V2002 ACPI Mode	X			Install from SONY USB2.0/IEEE1394 + DRX8300UL DVD-R/W
English Windows XP Professional Service Pack 2 V2002 APM Mode	X			

Onboard RAID Function Test:

Installation	Result			Note
	Pass	Fail	N/A	
Set 2 SATA HDDs as RAID 0 and install Windows XP Professional Service Pack 2 V2002 ACPI Mode			X	
Set 2 SATA HDDs as RAID 1 and install Windows XP Professional Service Pack 2 V2002 ACPI Mode			X	

Test Points: 1. Before starting every test, you must install all drivers completely first

VGA Resolution Test

Note: Pay attention to LCD Full Screen under Text Mode.

Color : [X]16bit [X] 32bit

Resolution	CRT			TTL			LVDS			Note
	Pass	Fail	N/A	Pass	Fail	N/A	Pass	Fail	N/A	
640X480	X					X	X			
800X600	X					X	X			
1024X768	X					X	X			
1280X1024	X					X	X			
1600X1200			X			X	X			

CRT Model Name: ViewSonic E70

TTL Panel: N/A

LVDS Panel: AU M201UN02 V.5 / 20.1" / 1600x1200x48bit

Display Function Test:

Test points:

1. Power on without inserting any VGA connector until system reaches Windows desktop
2. Plug VGA connector into test machine while system reaches Windows then check VGA driver and display

	Check VGA driver			Check Display			
	Pass	Fail	N/A	Pass	Fail	N/A	
In Windows Desktop	X			X			

Test Results:

Test Item	Pass	Fail	N/A	Note
Install From USB CD-ROM				
Install to SATA HDD	X			
Display Function Test				
CRT -- Full Screen	X			
LCD -- Full Screen	X			
DVI --- Full Screen	X			
TV ---- Full Screen	X			
CRT + LCD	X			
CRT + DVI	X			
Boot - Windows XP Professional Advanced Options Menu				
Safe Mode	X			
Safe Mode with Networking	X			
Safe Mode with Command Prompt	X			
Enable Boot Logging	X			
Enable VGA Mode	X			
Last known Good Configuration	X			
Directory Services Restore Mode (windows XP domain controllers only)	X			
Debugging Mode	X			
Disable automatic restart on system failure	X			
Start Windows Normally	X			
Reboot	X			
Return to OS Choices Menu	X			
Start Menu				
Log off User	X			
Shut down	X			
Standby	X			
Restart	X			
Hibernate	X			

4. BIOS Function Test

4-1. Memory Beep Test

Test Item	Function		N/A	Note
	Pass	Fail		
Check if there is beep sound during power on inserting no memory	X			

4-2. Power Management Test

4-2.1. APM Power Management Test

Test Item	Setting Test	Result			Note
		Pass	Fail	N/A	
Power Button	Delay 4 Sec	X			Soft-Off By PWRBTN
Power Button	Instant-Off	X			Soft-Off By PWRBTN

4-2.2. ACPI Power Management Test

Test Point:

1. While setting S1(POS) in BIOS ACPI option, boot into Windows then choice standby item to let system suspend. It must be resumed back correctly by moving PS/2 Keyboard or mouse
2. While setting S3(STR) in BIOS ACPI option, boot into Windows then choice standby item to let system suspend. It must be resumed back correctly by pressing power button

Test Item	Result			Note
	Pass	Fail	N/A	
Enable	X			
Disable	X			
ACPI - S1 (POS)	X			
ACPI - S3 (STR)	X			
ACPI - S1 & S3			X	

4-3. Wake Up Event Test

Test Step:

1. Wake on MODEM→

- 1.1. Connected COM port MODEM to machine and its power stays in on state.
- 1.2. Connected phone cable to MODEM
- 1.3. Power on machine then enter BIOS setup menu, ensure that “Power On by Ring” item is enabled.
- 1.4. Turn off power by pressing shutdown button during POST
 - 1.4.1. Machine will be powered on successfully by dialing from COM port MODEM
- 1.5. Turn off computer from start menu in Windows OS
 - 1.5.1. Machine will be powered on successfully by dialing from COM port MODEM

2. Wake on LAN→

- 2.1. Connected machine and another PC with LAN cable.
- 2.2. Power on machine then enter BIOS setup menu, enable “Wake up by PCI Card” item.
- 2.3. Turn off power by pressing shutdown button during POST
 - 2.3.1. Send magic packet to machine by key in it’s MAC address in another PC, then machine must be powered on successfully
- 2.4. Turn off computer from start menu in Windows OS
 - 2.4.1. Send magic packet to machine by key in it’s MAC address in another PC, then machine must be powered on successfully

Test Item	Result			Note
	Pass	Fail	N/A	
Power On by Ring / COM 1	Ring		X	
	+12V		X	
	+5V		X	
CN11 on GENE-9310 A1.0-A				
Power On by Ring / COM 2	Ring	X		
	+12V	X		
	+5V	X		
CN9 on GENE-9310 A1.0-A				
Power On by Ring / COM 3	Ring	X		
	+12V	X		
	+5V	X		
CN5 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)				
Power On by Ring / COM 4	Ring	X		CN6 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)
	+12V	X		
	+5V	X		
CN6 on PER-T099 A0.1 (PCI Express + LVDS + 2 COM)				

4-4. CMOS Backup / Clear CMOS Test

Test Item	Result			Note
	Pass	Fail	N/A	
CMOS Backup	X			
Clear CMOS Test	X			

4-5. CRT / LCD / TV Function Test

Test Point: Boot display must be set to CRT+LCD in BIOS setup menu

Test Item	Result			Note
	Pass	Fail	N/A	
Boot Display -CRT	X			
Boot Display -LCD	X			
Boot Display -CRT+LCD	X			
Boot Display -DVI	X			
Boot Display -TV	X			
Boot Display -CRT+TV			X	
Boot Display -CRT+DVI	X			

4-6. COM Address / IRQ Test

Test Item	BIOS Adjust		Function		Boot into Windows		N/A	Note
	Pass	Fail	Pass	Fail	Pass	Fail		
COM 1								
3F8 / IRQ4	X		X		X			
2F8 / IRQ3	X		X		X			
3E8 / IRQ4	X		X		X			
2E8 / IRQ3	X		X		X			
AUTO (3F8 / IRQ4)	X		X		X			
Disable	X		X		X			
COM 2								
3F8 / IRQ4	X		X		X			
2F8 / IRQ3	X		X		X			
3E8 / IRQ4	X		X		X			

2E8 / IRQ3	X		X		X			
AUTO (2F8 / IRQ3)	X		X		X			
Disable	X		X		X			
COM 3								
280 / 288 / 2A0 / 2A8 ; IRQ3	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ4	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ5	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ6	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ9	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ10	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ11	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ12	X		X		X			
Disable	X		X		X			
COM 4								
280 / 288 / 2A0 / 2A8 ; IRQ3	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ4	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ5	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ6	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ9	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ10	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ11	X		X		X			
280 / 288 / 2A0 / 2A8 ; IRQ12	X		X		X			
Disable	X		X		X			
COM 5								
280 / 288 / 2A0 / 2A8 ; IRQ3							X	Focus on PER-T099 so we Ignore COM5 function on PER-T061
280 / 288 / 2A0 / 2A8 ; IRQ4							X	
280 / 288 / 2A0 / 2A8 ; IRQ5							X	
280 / 288 / 2A0 / 2A8 ; IRQ6							X	
280 / 288 / 2A0 / 2A8 ; IRQ9							X	
280 / 288 / 2A0 / 2A8 ; IRQ10							X	
280 / 288 / 2A0 / 2A8 ; IRQ11							X	
280 / 288 / 2A0 / 2A8 ; IRQ12							X	
Disable							X	
COM 6								
280 / 288 / 2A0 / 2A8 ; IRQ3							X	Focus on PER-T099 so we Ignore COM5 function on PER-T061
280 / 288 / 2A0 / 2A8 ; IRQ4							X	
280 / 288 / 2A0 / 2A8 ; IRQ5							X	
280 / 288 / 2A0 / 2A8 ; IRQ6							X	
280 / 288 / 2A0 / 2A8 ; IRQ9							X	
280 / 288 / 2A0 / 2A8 ; IRQ10							X	
280 / 288 / 2A0 / 2A8 ; IRQ11							X	
280 / 288 / 2A0 / 2A8 ; IRQ12							X	
Disable							X	

4-7. BIOS AWDFLASH Program Test

Test Points: 1. All we have to do is just type instruction: awdf flash.exe XXX.BIN in DOS, and other parameter is no need

If it can not be run, then we can say the test is fail

BIOS BIN file	T099_07.BIN		
	Result		
Award Flash Tools Version	Pass	Fail	N/A
8.88	X		

Remark: This version of BIOS must be 8 MB capacity chip