

P5 Verification Test Plan

Release No : 09E010044

Product Model	TKS-G20-9455
Description	Chassis for GENE-9455
Test Configuration	<p>⌘New product</p> <p>⌘System : TKS-G20-9455</p> <p>⌘PCB : GENE-9455 Rev A1.0</p> <p>⌘BIOS : GENE-9455 BIOS Rev 1.0 for DVI (2009/2/26)</p> <p>⌘Riser Card : N/A</p> <p>⌘Power Supply : LIEN ELECTRONICS INC. LE-0316B160080 Input:100-240V Output: 16V 80W</p> <p>⌘LCD : N/A</p> <p>⌘Touch Panel : N/A</p> <p>⌘M/B Chipset :</p> <p>⌘North Bridge : Intel 945GSE</p> <p>⌘South Bridge : Intel ICH7-M</p> <p>⌘VGA Chipset : Intel 945GSE integrated Graphics VGA</p> <p>⌘Audio Chipset : Realtek ALC655</p> <p>⌘Ethernet Chipset : Intel 82574L LAN</p> <p>⌘I/O Chipset : ITE8781</p> <p>⌘Remark : TKS-G20-9455 QE NPDP P5 Test Report</p>
Test Result Summary	
<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> Pass with Deviation Comment: _____ _____	

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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
System	TKS-G20-9455	
PCB Model	GENE-9455 Rev A1.0	
BIOS / Version	GENE-9455 BIOS Rev 1.0 for DVI (2009/2/26)	
CPU Type	Onboard Intel Atom N270 Processor 1.6GHz	
Memory Type	DSL DDR2 SO-DIMM 667 1Gb – ELPIDA E5108AJBG	
SATA HDD	FUJITSU SATA 2.5' H.D 80G – MHZ2080BHG2	
Primary IDE Master	Transcend CF Card 4G	
Primary IDE Slave	N/A	
CRT	View Sonic CRT 17" E70	
LCD	N/A	
Compact Flash	Transcend CF Card 4G	
Backplane	N/A	
Operating System	[] Linux-RedHat 9.0 or [] Fedora Core 4.0 [] Fedora Core 7.0	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	1,2,3,4,5,6,7,8
	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
	Windows XP Embedded	N/A
Power Supply	ATX Power : N/A	N/A
	AT Power : N/A	N/A
	DC Power: LIEN ELECTRONICS INC. LE-0316B160080	1,2,3,4,5,6,7,8
	Input:100-240V Output: 16V 80W	

OSD Control Function Test

OSD Control Test

OSD Control Function	Function			Note
	Pass	Fail	N/A	
Auto			X	
MENU			X	
UP			X	
DOWN			X	
POWER			X	
EXIT			X	

OSD – On Screen Display Test

Function Key	Function			Note
	Pass	Fail	N/A	
InputSource			X	OSD Control by system
PIP Enable			X	
Auto Tune			X	
Backlight			X	
Brightness			X	
Contrast			X	
Color			X	
Quality			X	
Position			X	
Language			X	
Recall			X	
Save Exit			X	

OSD Light Test

OSD Control Function	Function			Note
	Pass	Fail	N/A	
Power off	X			
Power on	X			
Stand by	X			Into S1 / S3 and see light function

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
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
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
DOM (Disk On Module) – 44 Pin			X
COM 1-232	X		
COM 2-232	X		
COM 2-422	X		
COM 2-485	X		
COM 2-Ring /+5V /+12V			X
COM 3-232			X
COM 4-232			X
COM 5-232			X
COM 6-232			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
LPT 2			X
IRDA			X
USB 1/2 Ports	X		
USB 3/4 Ports	X		
USB 5/6 Ports			X
USB 2.0 1/2 Ports	X		
USB 2.0 3/4 Ports	X		
USB 2.0 5/6 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
TV-out / S Terminal	X		
TV-out / AV Terminal	X		
Touch Screen – 4 Wire			X
Touch Screen – 5 Wire			X
DIMM Slots	X		
Watchdog IRQ n			X
Watchdog Software Control	X		
CPU FAN Connector			X
System FAN Connector	X		
Front Panel	Result		
	Pass	Fail	N/A
Power On Button (For ATX mode)	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
ATX simulates AT			X
LCD Power Select			X
COM1-Ring/5V/12V Selection			X
COM2-Ring/5V/12V Selection			X
COM2 RS-232/422/485 Selection (Depends on BIOS)			X
COM3-Ring/5V/12V Selection			X
COM4-Ring/5V/12V Selection			X
Clear CMOS			X
Power Connector & Function	Result		
	Pass	Fail	N/A
DC Power Connector	X		
ATX 24 Pin Power Connector			X
ATX Power Connector			X
ATX Power_12V Connector			X
AT Power Connector			X
Big 4P Power Connector			X
Mini 4P Power Connector			X
External Power Connector(-12/-5V)			X

Option ATX Power Connector (PS-ON / +5VSB)				X
LAN Connector & Function		Result		
		Pass	Fail	N/A
LAN Speed LED	LAN1	X		
	LAN2	X		
LAN Active LED	LAN1	X		
	LAN2	X		
LAN Link 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 - Gigabyte GN-WIAG/GN-WPEAG		X		
PCI Slots				X
PCI Express				X
Mini PCI Express				X
PCMCIA Function		Result		
		Pass	Fail	N/A
Intel PRO/Wireless 2011B LAN PC Card (WPC2011BWW)				X
Accton 10/100 Fast Ethernet CardBus PC Card				X

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

Test Method	Result		
	Pass	Fail	N/A
DC 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
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		
	60 sec	X		
	120 sec	X		

4. Network HUB / LAN Connection Test

Location		LED Type				Result		
						Pass	Fail	N/A
LAN1 LED		Active LED				X		
		Link LED				X		
		Speed LED				X		
LAN2 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
Onboard Intel Atom N270 Processor 1.6GHz		533	V 25.90		X		
Memory Compatibility Test							
Memory Brand	Memory Chipset	Frequency	Size	MemTest86 Version	Result		
					Pass	Fail	N/A
DSL	ELPIDA E5108AJBG-6E-E	667	1 G	V2.10	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		
			AV Terminal		Pass	Fail	N/A
NTSC					X		
PAL					X		
			S Terminal		X		
NTSC					X		
PAL					X		
On Board LCD Function Test							

TFT LCD	Type	Voltage	Result		
			Pass	Fail	N/A
LVDS	Sharp LQ12S1LG61 /12"/800*600	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
	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
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

Model	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
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

Model	Result		
	Pass	Fail	N/A

FUJITSU 2.5 SATA HLD 80G-MHZ2080BHG2	X		
CD/DVD-ROM Compatibility Test			
Model	Result		
	Pass	Fail	N/A
LITE-ON LITEON DX-20A4PU (USB DVD-ROM)	X		
SONY USB2.0 DVD-R/W DRX-830UL (USB DVD-ROM)	X		
ASUS DRW-1604P-D/WHT/G/ASUS (USB DVD-ROM)	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: USB2.0 DRW-1604P-D/WHT/G/ASUS	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 – TOSHIBA USB H.D 2G	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-II CF	Fix / PIO Mode	X			
Type-II CF	Fix / UDMA Mode	X			
Digital I/O Connector Test		Result			
		Pass	Fail	N/A	
Input Address: 680,682,684		X			
Output Address: 680,682,684		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 –COM1		X			
COM Port Burn In Test overnight –COM2		X			
COM Port Burn In Test overnight –COM3		X			
COM Port Burn In Test overnight –COM4		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
Gigabyte GN-WIAG/GN-WPEAG	WLAN	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		
RS-232 for 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 [] Fedora Core 7.0				X	
Windows Server 2003 English Version / Standard Edition 5.2.3790				X	
Windows Server 2003 English Version /Standard x64 Edition				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 Server 2000 English Version				X	
Windows 98SE English Version V4.10.2222A				X	
DOS 6.22 English Version				X	
Windows XP Embedded				X	
Utility and Driver Test					
OS	Drivers Version		Result		
			Pass	Fail	N/A
Linux-Red-Hat 9.0 / Kernel 2.4.20-8	Chipset Software	N/A			X
	Graphics Media	N/A			X
	LAN Driver	N/A			X
	Audio Driver	N/A			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 Server 2003 English Version Standard x64 Edition	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 – 2008/04/01	X		
	Graphics Media	Mobile Intel 945 Express Chipset Family – 6.14.10.4926 – 2008/02/15	X		
	LAN Driver	Intel 82574L Gigabit Network Connection – 10.3.49.0 – 08/05/2008	X		
	Audio Driver	Realtek AC'97 – 5.10.0.6280 -2008/01/23	X		
Windows XP Professional x64 Edition English Version Service Pack 2 V2002	Chipset Software	N/A			X
	Graphics Media	N/A			X
	LAN Driver	N/A			X
	Audio Driver	N/A			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
Windows XP Embedded	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			
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 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 AMI Program Test	X		

8. Performance Test

Platform Information

PCB Model	TKS-G20-9455
BIOS	GENE-9455 BIOS Rev 1.0 for DVI (2009/2/26)
Operating System	Windows XP Professional SP3
CPU	Onboard Intel Atom N270 Processor 1.6GHz
Memory	DSL DDR2 SO-DIMM 667 1G- ELPIDA E5108AJBG-6E-E
SATA HDD	FUJITSU 2.5" SATA H.D 80G-MHZ2080BHG2
Primary IDE Master	N/A
Primary IDE Slave	N/A
CRT	N/A
LCD	N/A
Chipset Software	Intel Chipset Device software – 9.0.0.1008 – 2008/04/01
Graphics Media	Mobile Intel 945 Express Chipset Family – 6.14.10.4926 – 2008/02/15
LAN Driver	Gigabyte GN-WIAG/GN-WPEAG (mini) PCI WLAN Card – 5.3.0.56 Intel 82574L Gigabit Network Connection – 10.3.49.0 – 08/05/2008
Audio Driver	Realtek AC'97 – 5.10.0.6280 -2008/01/23
Power Supply	LIEN ELECTRONICS INC. LE-0316B160080 Input:100-240V Output: 16V 80W

Test result:

Final Reality V1.01—BenchMark Test (Reality Marks) (800*600)		
2D Image	19.55	
3D	4.06	
Bus transfer	26.68	
Overall	12.10	Reality marks
3Dmark2001SE Pro		
3DMark2001SE Build 330_Benchmark mode	2754	
3Dmark2003 v360		
3Dmark Score	674	
PCMark2002		
CPU	2600	
Memory	6050	
HDD	1389	
PCMark05		
PCMark	N/A	
CPU	1466	
Memory	2385	
Graphics	560	
HDD	4421	