

P5 Verification Test Plan

Release No: 09E010051

Product Model	COM-45GS
Description	Intel GS45+ICH9M SFF COM Express CPU Module
Test Configuration	<input checked="" type="checkbox"/> New product <input checked="" type="checkbox"/> PCB Board : COM-45GS A0.2 <input checked="" type="checkbox"/> BIOS : COM-45GS BIOS Rev. 1.0 (12/04/2009) <input checked="" type="checkbox"/> Carrier Board : ECB-916M A1.0 <input checked="" type="checkbox"/> Expansion Board : N/A <input checked="" type="checkbox"/> Riser Card : N/A <input checked="" type="checkbox"/> Chipset : <input checked="" type="checkbox"/> North Bridge : INTEL GS45 <input checked="" type="checkbox"/> South Bridge : ICH9M SFF <input checked="" type="checkbox"/> VGA Chipset : INTEL GS45 integrated <input checked="" type="checkbox"/> Audio Chipset : ALC888 (Carrier Board) <input checked="" type="checkbox"/> Ethernet Chipset : INTEL 82567LM Gigabit <input checked="" type="checkbox"/> I/O Chipset : ICH9M SFF <input checked="" type="checkbox"/> TV Chipset : INTEL GS45 integrated <input checked="" type="checkbox"/> Remark : QE P5 Report for COM-45GS
Test Result Summary	
<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail <input type="checkbox"/> Pass with Deviation Comment: _____ _____	

2009/12/14

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
PCB Model / Version	COM-45GS A0.2
Carrier Board	ECB-916M A1.0
BIOS / Version	COM-45GS BIOS Rev. 1.0 (12/04/2009)
CPU Type	Intel® Core™ 2 Duo 2.26GHz SP9300 (Penryn)
Memory Type	KINGSTON DDR3 1066 SODIMM KVR1066DS37 4GB x 2 pcs
SATA HDD	Seagate 80GB MHY2080H 2.5" SATA HDD
SATA DVD	ASUS DVR-212BK
Primary IDE Master	N/A
Primary IDE Slave	N/A
CRT	Hanns.G / HK191H / 19"
LCD	N/A
Compact Flash	N/A
Riser Card	N/A
Backplane	N/A
Operating System	[<input type="checkbox"/>] Linux-RedHat 9.0 or [<input checked="" type="checkbox"/>] Fedora Core11 Windows XP Professional English Version V2002 Service Pack 3
Power Supply	ATX Power : COOLERMMASTER RS-390-PMSR-A3 AT Power : ZECK ZKS-300W

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 7.1 Channel / S/P DIF	X		
LPT 1	X		
LPT 2			X
IrDA / 115.2 Kbps	X		
USB 1/2 Ports	X		
USB 3/4 Ports	X		
USB 5/6 Ports (Compact Flash Type II slot: #5 / Touch Panel Controller: #6)	X		
USB 7/8 Ports (Express Card slot: #7 USB port (From module) / Mini Card slot: #8 USB port (From module))	X		
USB 2.0 1/2 Ports	X		
USB 2.0 3/4 Ports	X		

USB 2.0 5/6 Ports (Compact Flash Type II slot: #5 / Touch Panel Controller: #6)	X		
USB 2.0 7/8 Ports (Express Card slot: #7 USB port (From module) / Mini Card slot: #8 USB port (From module))	X		
DIO Connector (801H)	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		
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 IRQ n			X
Watchdog Software Control	X		
FAN Connector (CN13,CN14)	X		
LCD Backlight Power Connector	X		
Power Button	X		
Reset Button	X		
Battery Connector (CPU Board)	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
ATX simulates AT			X
Audio Out Selection (W/O & W/ Amplifier)			X
LCD Voltage Selection	X		
COM1-Ring/5V/12V Selection	X		
COM2-Ring/5V/12V Selection	X		
COM2 RS-232/422/485 Selection	X		
COM3-Ring/5V/12V Selection	X		

COM4-Ring/5V/12V Selection		X		
Clear CMOS		X		
Touch Screen Operating Mode Selection		X		
Clock Shift of TFT LCD				X
FAN Power Selection		X		
Backlight Power Selection		X		
Power Connector & Function	Result			
		Pass	Fail	N/A
5V only Power for Big 4P				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 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		X		
Express card		X		

2. Power Consumption Test (Run Prime95 Program)

Platform Information

CPU Board	COM-45GS A0.1
Carrier Board	ECB-916M A1.0
BIOS	COM-45GS BIOS Rev.0.22(07/14/09)
Operating System	WINXP Pro SP3
CRT	VIEWSONIC E70
Power Supply	PRT PRM400

Test	ATX Power: PRT PRM400	AT Power:	Note
Environment			

Model				
CPU	SP9300 / 2.26GHz 25W			
HDD	Fujitsu 80GB 2.5" HDD			
RAM	KINGSTON DDR3 SODIMM KVR1066D3S7 4GB x 2 pcs			
OS Environment	WIN XP Pro SP3			
Normal Mode (+5V)	0.81	A		A
Suspend Mode (+5V)	0.1	A	-----	A S1
5VSB in Power Off Mode (just for ATX)	0.26	A	-----	A
5VSB in Power On Mode (just for ATX)	0.05	A	-----	A
5VSB in S1 Suspend Mode (just for ATX)	0.1	A	-----	A Can't over 5VSB in Power On & Off current.
Normal Mode (+12V)	3	A		A
Suspend Mode (+12V)	0.88	A	-----	A S1
Normal Mode (+3.3V) (just for ATX)	0	A		A
Suspend Mode (+3.3V) (just for ATX)	0	A	-----	A S1
Normal Mode (-12V)	0	A		A
Suspend Mode (-12V)	0	A	-----	A
Normal Mode (-5V)	0	A		A
Suspend Mode (-5V)	0	A	-----	A

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		
	255 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	
Intel ® Core™ 2 Duo 1.86GHz SL9400 (Penryn) / FSB: 1066MHz / L2: 6MB		1066MHz	V.256	X			
Intel ® Core™ 2 Duo 2.26GHz SP9300 (Penryn) / FSB: 1066MHz / L2: 6MB		1066MHz	V.256	X			
Memory Compatibility Test							
Memory Brand	Memory Chipset	Frequency	Size	MemTest86 Version	Result		
					Pass	Fail	N/A
KINGSTON DDR3 SODIMM KVR1066D3S7	SAMSUNG K4B2G0846B-HCF8	1066	4GB	V3.5	X		

KINGSTON DDR3 SODIMM KVR1066D3S7	SAMSUNG K4B2G0846B-HCF8	1066	8GB(4GB x 2 pcs)	V3.5	X		
Transcend 1GB DDR3 1066	ELPIDA J1108BABG-AE-E	1066	1GB	V3.5	X		
Audio Basic Function Test					Result		
					Pass	Fail	N/A
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		
					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)			5V			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 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		
	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
CHANTECH NVIDIA GeForce4 MX440-8X	VGA Card	X		
Creative SB0060 5.1 audio	Sound Card	X		
I-VIEW CP-1400AS (with Age STD-477FAI CCD)	Capture Card	X		
ASUS NX1101 32-Bit 1000Mbps Gigabit Network Adapter	LAN Card	X		
D-Link DWL-520+ Wireless LAN	LAN Card	X		

ISA Slot Function Test

Model	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		

HDD Compatibility Test

Model	Result		
	Pass	Fail	N/A
Seagate / ST3160815A / 160GB /PATA-100	X		
Seagate ST380815AS 80GB	X		
Seagate ST3160815AS 160GB	X		
FUJITSU.MHZ2080BH 2.5" SATA HDD	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			
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-I CF	Fix / PIO Mode			X
Type-I CF	Fix / UDMA Mode			X
Type-I CF	USB Removable	X		
Digital I/O Connector Test	Result			
	Pass	Fail	N/A	
Input Address: 801		X		
Output Address: 801		X		
VCC: (5V), Position : (CN1)		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 (ACPI /APM Mode)

COM Port Burn In Test (300 / 9600 / 115200 Kbits/sec)	Result		
	Pass	Fail	N/A
	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

RS-422 for COM2	Result		
	Pass	Fail	N/A
	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 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-Red Hat 9.0 or [X] Fedora Core 11		X			
Windows XP Professional English Version V2002 Service Pack 3		X			
Utility and Driver Test					
OS	Drivers Version		Result		
			Pass	Fail	N/A
Linux-Fedora 11 /Kernel- 2.6.29.4-167.fc11	Chipset Software	Default Driver	X		
	Graphics Media	Default Driver	X		
	LAN Driver	Default Driver	X		
	Audio Driver	Default Driver	X		
Windows XP Professional English Version V2002 Service Pack 3	Chipset Software	Intel(R) Chipset Device Software Ver. 9.0.0.1007	X		
	Graphics Media	Mobile INTEL 4 Series Express Chipset Ver.6.14.10.5082 (6/25/2009)	X		
	LAN Driver	INTEL 82567LM Gigabit Ver.9.50.1.0(11/16/2007)	X		
		INTEL PRO/1000 PL Network Ver.9.12.13.0 (12/11/2007)			
	Audio Driver	Realtek High Definition Audio Ver.5.10.0.5657 (7/3/2008)	X		
Touchscreen Driver	USB Touchscreen Controller(Universal) 4.3.7.3203(8/3/2006)	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			
APM Power Management Test	X		
ACPI Power Management Test	X		
Power On Function Test			X
Wake Up Event Test	X		
Power On after Power Failure Test (Off / On)	X		
CMOS Backup / Clear CMOS Test	X		
Boot ROM Test (PXE)	X		
Supervisor / User Password Test	X		
CRT / LCD / DVI / 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		
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 (378/IRQ7)	X		
BIOS AWDFLASH Program Test	X		

8. Performance Test

Platform Information

CPU Board	COM-45GS A0.1
Carrier Board	ECB-916M A1.0
BIOS	COM-45GS BIOS Rev.0.22(07/14/09)
Operating System	English Windows XP Professional Service Pack 3
CPU	Intel ® Core™ 2 Duo 2.26GHz SP9300 (Penryn) / FSB: 1066MHz / L2: 6MB
Memory	KINGSTON DDR3 SODIMM KVR1066D3S7 4GB x 2 pcs
SATA HDD	Fujitsu MHZ2080BH 80GB 2.5" HDD
Primary IDE Master	N/A
Primary IDE Slave	N/A
CRT	ViewSonic E70
LCD	N/A
Compact Flash	N/A
Expansion Board	N/A
Chipset Software	INTEL Chipset Device Software Ver. 9.0.0.1007 Date : 03/26/2008

Graphics Media	Mobile INTEL 4 Series Express Chipset Ver.6.14.10.4969 Date:7/3/2008
LAN Driver	INTEL 82567LM Gigabit Ver.9.50.1.0 Date:11/16/2007
	INTEL PRO/1000 PL Network Ver.9.12.13.0 Date:12/11/2007
Audio Driver	Realtek High Definition Audio Ver.5.10.0.5657 Date :7/3/2008
Power Supply	ATX Power: PRT400

Test result:

Testing Software	Result	Unit
PCMark2002		
CPU	8863	
Memory	27270	
HDD	1440	
Final Reality V1.01—BenchMark Test		
2D image	51.4	
3D	4.26	
Bus transfer	118.70	
Overall	35.57	Reality marks
3Dmark2001		
3DMark2001SE Build 330_Benchmark mode	7726	

Test Result:

Testing Software	Result	Unit
PCMark05		
PCMark	4446	PCMarks
CPU	N/A	
Memory	N/A	
Graphics	N/A	
HDD	N/A	
3Dmark2003 v360		
3Dmark Score	2175	

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