



SAHARA 3810 Compatibility Test Report

M/B 2.2

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**FIC Research & Development Department
5F #52 Min-Chuan Road, Hsin-Tien City Taipei ,Taiwan , R.O.C
Tel : 886-2-918-6001 Fax : 886-2-915-6728**

Revision 1.2

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Revision History

Document Revision	Issued Data	Description
Revision 1.0	05/16/2000	M/B Ver2.2 report
Revision 1.1	07/20/2000	Update BIOS
Revision 1.2	08/25/2000	Update BIOS & CPU List



1. Overview

This plan describes the test stage & procedure to be followed during Engineering / Design Validation Test (EVT/DVT) of the “SAHARA 3810”. The product focus at FIC Computer Corporation of business marketing, the development process assign to R&D of First International Computer Corporation. All design function must meet FIC request specification with “Microsoft WHQL Logo”, FIC specification if all test items had been finished and test result could be passed in the system compatibility regulatory standards verification, DIMM qualification and final design review testing processed.

- **Purpose**

The testing process can provide a correct of reliability and stability system for demonstrate indentation, all problem solution or failure result will respond to FIC and FIC R&D team. FIC will hold problem review meeting approximately once each week to review EVT/DVT status, define the debug team & assign corrective action. The purpose of the Engineering/Design Verification Test (EVT/ DVT Test) is to demonstrate “SAHARA 3810” can meet all functionality goals including all testing process, as stated in the engineering specification. Any problems and defects found during EVT test stage that should be documented, analyzed and betaken corrective action. After performing the test and reviewing the result from FIC R&D team. FIC will hold problem review meeting approximately once each week to review DVT status, define the debug team & assign corrective action. If we found the defects or bugs was found during the DVT test stage, we should do the tests again in next cycle if the corrective active have been taken. Then we can provide the supported options work properly on the system, and the all shipment basic configuration unit can work properly. After the fixed bug could be closed by FIC .

- **Scope**

1. The propose of this specification is to establish testing item, and procedure to ensure the safe operating, distribution, installation, and use if all FIC and OEM's hardware product. It also provides criteria for all testing certification and rectification of all products.
2. The design specification applies all OEM's supplied and optional for FIC manufactured finished products.

- **Objectives**

1. Ensure that both systems and peripherals meet the engineering specification under the appropriate environmental conditions as set forth in the product requirement document. This is to be accomplished through environmental standards tests.
2. Determine the design margins with respect to relevant variables as determined by the responsible engineers in the project team.
3. Ensure product meets FIC regulatory standards including EMC and safety requirement as we submit to regulatory compliance .
4. Make sure all problems found during the EVT/DVT are corrected and proceed to DVT/RM stage.

2. System Features

CPU	Socket 370
Chipset	GMCH : Intel 810 E Integrated DVMT 2D/3D Graphics ICH : Intel 82810 AA Dual IDE Support (Ultra DMA 33/66) , 2 USB Ports
Memory	2 DIMM Sockets with PC100 support Upgradable to 512MB Max
Super IO	NS 366
Graphics	Integrated DVMT 2D/3D Graphics
Audio	Analog Devices 1881
Slots	2 PCI Slots on PCI riser card
Status Panel	3 LEDs for Power, HDD and LAN , 1 Power/Sleep Button
Connectors	2 Serials, 1 Parallel, 2 USB, PS/2 (Keyboard,Mouse) , Video(D-sub), Audio (Line Out ,Line in ,MIC In),1 RJ45

- **Basic Configuration**

System	Sahara3810 (#1)	
Processor	Intel Celeron 466~700MHz FSB 66MHz	
Memory	64MB X2 128MB X2 256MBX2	Section 6.1
HDD	IBM 13.5GB WD13.6GB Seagate 10.2GB Seagate 15.3GB Quantum 20.4GB Samsung 10.2GB	Section6.2
CD-ROM	CR-175-B CR-176-B XM-1902B	
System	Sahara3810 (# 2)	

Processor	Intel Pentium III 500~800MHz FSB 100Mhz	
Memory	64MB X 2 128MB X 2 256MB X 2	Section 6.1
HDD	IBM 13.5GB WD13.6GB Seagate 10.2GB Seagate 15.3GB Quantum 20.4GB Samsung 10.2GB	Section 6.2
CD-ROM	Matsushita CR-175-B Matsushita CR-176-B Toshiba XM-1902B	
System	Sahara3810(#3)	
Processor	Intel Pentium III 667,733,800,866,933MHz FSB 133MHz	
Memory	64MB X 2 128MB X 2 256MB X 2	Section 6.1
HDD	IBM 13.5GB WD13.6GB Seagate 10.2GB Seagate 15.3GB Quantum 20.4GB Samsung 10.2GB	Section 6.2
CD-ROM	Matsushita CR-175-B Matsushita CR-176-B Toshiba XM-1902B	

3. Milestone and Objectives

- **Stress Test:**

The stage will be attached on H/W of stability, power supply safety, and mechanical Environmental test, EMI test, system compatibility test, Microsoft WHQL Logo pre-test, system overall performance test, verify and fix bug from accept test stage. If the system's major bug or fatal error above 5 items. The Q&A system will reject the system to design team.

- **Full Test:**

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The stage will be attach on system with support option devices test, power supply final Test, mechanical with environmental final test; BIOS & driver of compatibility test, Microsoft WHQL/ Novell Logo final test, verify and fixed bug from accept/stress test stage. If the system's major bug or fatal error above 1 item. The Q&A system will reject the system to design team.

Test Stage	Check Point	Milestone
Stress Test	All H/W Feature Test Pass. Major Bug doesn't over 5 items.	04/21/2000
Full Test	All BIOS & H/W Feature Test Pass. Major Bug doesn't over 1 item.	05/16/2000

4 System H/W Basic Function Test

The test is to ensure the on-board H/W functionality could work properly .The test will describe as follow the table list :

4.1 BIOS (Switch/Jumper) Setup & Power Management Utility (PMU) Functionality:

The test is to ensure the BIOS can support all on-board devices & work properly .The test will describe as follow the table list :

The BIOS & BIOS Function test process included the list, please see below :

1. BIOS Basic function can support all Operating System & work properly.
2. All device cans been detected and post correct under BIOS, the devices could work properly.
3. The BIOS H/W function can work properly, Example: flash BIOS and Clear CMOS.
4. The RTC (Real Time Clock) must meet FIC standard (Maximum2sec/24/hrs).
5. The Power Management Utility (PMU) Function can work properly in. all support Operating system.
6. The Switch/Jumper Setting Function must meet the Spec

Product Name			Test Configuration	
Test Stage			STRESS	FULL
RTC (Real Time Clock)	Power ON	DOS	P	P
		Windows	P	P
	Power OFF	With AC	P	P
		W/O AC	P	P
Device Detect function			P	P
Clear CMOS Test			P	P
BIOS Basic Function			P	P
BIOS Flash Test			P	P
Switch /Jumper Setting			P	P
Year2000			P	P

4.2 PS/2 External Port:

The test is to ensure the PS/2 port can support PS/2 Keyboard & Mouse functionality & work properly. The test will describe as follow the table list:

The PS/2 K/B & Mouse test process included the list, please see below:

1. PS/2 mouse & K/B connecting in PS/2 port in all support Operating System, the devices could work properly.
2. The PS/2 Keyboard can HOT plug-in & using under all support Operating System and work properly.
3. The system could be resume from PS/2 mouse or keyboard.

Product Name	Vendor	Test Configuration									
		WIN98		WIN95 OSR2.5		NT4.0+ SP4		DOS/ WFW		Windows 2000	
Test Stage(S=Stress/F=Full)		S	F	S	F	S	F	S	F	S	F
PS/2 Keyboard Test	Silitek	P	P	P	P	P	P	P	P	P	P
PS/2 Mouse Test	Qtronic	P	P	P	P	P	P	P	P	P	P
PS/2 keyboard hot plug Test	Silted	P	P	P	P	P	P	P	P	P	P
Suspend Resume (mouse)	Toni	P	P	P	P	P	P	P	P	P	P
Suspend Resume (keyboard)	Silted	P	P	P	P	P	P	P	P	P	P

4.3 Serial Port Test:

The test is to ensure the Serial port can support Serial device of functionality & work properly. The test will describe as follow the table list:

The Serial Port test process included the list, please see below :

1. Serial Mouse connecting in serial port could work properly.
2. Serial Mouse connecting in Serial port in WIN95 OSR2.5, the devices could work properly.
3. Plug & Play Serial Port Mouse connected in Serial Port in Windows95 OSR2.5 & Win98, the device can detect and work properly.
4. Plug & Play External FAX/Modem connected in Serial Port in Windows95 OSR2.5 & Win98 Operating System, the device can detect and work properly.

Product Name	Vendor	Test Configuration							
		WIN98		WIN95 OSR2.5		NT4.0+ SP4		Windows 2000	
Test Stage(S=Stress/F=Full)		S	F	S	F	S	F	S	F
M-M34 , Serial Mouse	Logitech	P	P	P	P	P	P	P	P
External Plug & Play FAX/MODEM V.90/K56 (F1)	GVC	P	P	P	P	P	P	*	*

*No driver support.

4.4 Parallel Port Test :

The test is to ensure the support parallel port functionality could work properly .The test will describe as follow the table list:

The parallel Port test process included the list, please see below:

1. Printers setting on EPP/ECP Mode connecting in Parallel port in all support Operating system, the devices could work properly.
2. Direct Cable Device can work properly in all support operating system when connected to Parallel Port.

Product Name	Vendor	Test Configuration					
		WIN98		WIN95 OSR2.5		NT4.0+ SP4	
Test Stage(S=Stress/F=Full)		S	F	S	F	S	F
Laser Jet 1100	HP	P	P	P	P	P	P
Universal Direct Cable ECP/EPP/Normal/Bi-Dir mode	Parallel Technol ogies	P	P	P	P	P	P

4.5 USB(Universal Serial Bus) Port Test :

The test to ensure the support USB port functionality could work properly .The test will describe as follow the table list:

The USB Port test process included the list, please see below:

1. USB Driver installed in Windows 98 / Windows95 OSR2.5 must have not conflict with others on-board device and connected USB device could work properly.
2. System auto detect when plugging USB Keyboard & USB Mouse in USB port in all support Operating system, and the devices could work properly.

Product Name	Vendor	Test Configuration
--------------	--------	--------------------

		WIN98		WIN95 OSR2.5	
Test Stage(S=Stress/F=Full)		S	F	S	F
USB Keyboard	Chicory	P	P	P	P
	Microsoft (Natural)	P	P	P	P
USB Mouse	Cypress	P	P	P	P
	Logitech(Mouse MAN)	P	P	P	P
USB HUB	ATMAL	P	P	P	P
USB Video Capture	Kodak(DVC 300)	P	P	P	P
USB Speaker	Midiland	P	P	P	P

4.6 On-Board IDE Controller Function Test:

The test is to ensure the Southbridge chipset support functionality could work properly .The test will describe as follow the table list :

The Southbridge chipset test process included the list, please see below :

1. The ICH chipset of all support Function transfer mode (P I/O mode 4, UDMA 33/66) could work properly in the ALL support Operating System.
2. The ATAPI of CD-ROM could work properly in the ALL support Operating system.
3. The IDE HDD could be detecting in BIOS & work properly in the ALL support Operating system.

Product Name	Vendor	Test Configuration									
		WIN98		WIN95 OSR2.5		NT4.0+ SP4		DOS/ WFW		Windows 2000	
Test Stage(S=Stress/F=Full)		S	F	S	F	S	F	S	F	S	F
IBM DJNA-371350 13.5GB	IBM	P	P	P	P	P	P	P	P	P	P
WD 136AA 13.6GB	WD	P	P	P	P	P	P	P	P	P	P
SV1022D 10.2GB	SAMSUNG	P	P	P	P	P	P	P	P	P	P
U10 ST310212A 10.2GB	SEAGSTE	P	P	P	P	P	P	P	P	P	P
U10 ST315323A 15.3GB	SEAGATE	P	P	P	P	P	P	P	P	P	P
U8 ST34313A 4.3 GB	SEAGATE	P	P	P	P	P	P	P	P	P	P
20.4AT 20.4GB	Quantum	P	P	P	P	P	P	P	P	P	P

4.7 On-Board Audio Controller Function Test :

The test is to ensure the Audio chipset support functionality could work properly .The test will describe as follow the table list:

The Audio chipset test process included the list, please see below:

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1. The Audio chipset with all support drivers could work properly in the all support operating system.
2. The Audio chipset with all support drivers could work properly in all support resource (DMA & IRQ, I/O Rang) under the all support operating system.
3. The audio all support function (Record, Speaker Output,) could work properly in the all support operating system.

Product Name	Vendor	Test Configuration							
		WIN98		WIN95 OSR2.5		NT4.0+ SP4		Windows 2000	
Test Stage(S=Stress/F=Full)		S	F	S	F	S	F	S	F
Driver Installation Test	AD	P	P	P	P	P	P	P	P
Record Function Test	AD	P	P	P	P	P	P	P	P
Speaker Output Function Test	AD	P	P	P	P	P	P	P	P

4.8 On-Board VGA Function Test :

The test is to ensure the On-board VGA function could work properly .The test will describe as follow the table list:

The VGA function test process included the list, please see below:

1. VESA DDC Monitor connecting in Video D-sub Connect Port, DDC1/DDC2B could work properly in WIN95 OSR2.5 / WIN 98.
2. The Video D-sub Connect port can output to CRT in all support modes when used 3D WinBench change under difference mode.
3. The VGA chipset had installed VGA driver in all support operating system then it could be display to CRT in 800x600 16bit high colors & CRT 1600x1200 256 colors .
4. The VGA chipset of DPMS function can work properly in all support Operating System.
5. Multiple Display Support requires that all of the display adapters be PCI or AGP devices and could work properly in Win98 .

Product Name	Vendor	Test Configuration					
		WIN98		WIN95 OSR2.5		NT4.0+ SP4	
Test Stage(S=Stress/F=Full)		S	F	S	F	S	F
DPMS Function Test	INTEL	P	P	P	P	P	P
VGA all support Mode Test	INTEL	P	P	P	P	P	P
Multiple Display Support Test	INTEL	P	P	P	P	P	P
BM17U (CRT)	LEO	P	P	P	P	P	P
CM643ET (CRT)	HITACHI	P	P	P	P	P	P

PT795(CRT)	View Sonic	P	P	P	P	P	P
RDT141S(LCD)	Mitsubishi	P	P	P	P	P	P

Quality and Centering Check

Resolution (bpp)	4bit	8bit	16bit	24bit
640 x 480	PASS	PASS	PASS	PASS
720 x 480		PASS	PASS	PASS
720 x 576		PASS	PASS	PASS
800 x 600		PASS	PASS	PASS
1024 x 768		PASS	PASS	PASS
1152 x 864		PASS#	PASS#	PASS#
1280 x 1024		PASS#	PASS#	PASS#
1600 x 1200		PASS#	PASS#	PASS#

Refresh Rate Check

Resolution (bpp)	4bit	8bit	16bit	24bit
640 x 480	PASS	PASS	PASS	PASS
720 x 480		PASS	PASS	PASS
720 x 576		PASS	PASS	PASS
800 x 600		PASS	PASS	PASS
1024 x 768		PASS	PASS	PASS
1152 x 864		PASS#	PASS#	PASS#
1280 x 1024		PASS#	PASS#	PASS#
1600 x 1200		PASS#	PASS#	PASS#

*** # The resolution don't support in MITSUMISHI

DDC Function Check

Machine No	#1 , #2,#3		
Product Name	Vendor	Test Configuration	Result
HITACHI CM643ET	HITACHI	Win 98/95	PASS
MITSUBISHI RDT141S	MTSUBISHI	Win 98/95	PASS

5 H/W Option Device Test

The test is to ensure support the H/W option devices of functionality could work properly .The test will describe as follow the table list:

5.1 Memory Module Test:

The test is to ensure the support memory functionality could work properly .The test will describe as follow the table list:

1. Use that DIMM to Install Operation System should be no any problem.
2. System in ACPI mode suspend to S3 mode and wake up should work properly.
3. Running 3D Winbench ,Qaplus, Amidiag utility should be no error.
4. System power on/off test should be over 100 times.

Product Name	Vendor	Test Configuration									
		WIN98		WIN95 OSR2.5		NT4.0+ SP4		DOS/ WFW		Windows 2000	
Test Stage(S=Stress/F=Full)		S	F	S	F	S	F	S	F	S	F
MC-458CA726F-A10 (64M)	NEC	P	P	P	P	P	P	P	P	P	P
MT48LC8M8A2-8E (64M)	Micron	P	P	P	P	P	P	P	P	P	P
MT8LSDT864AG- 10EC7 (64M)	Micron	P	P	P	P	P	P	P	P	P	P
MT48LC8M8A2-8E (128M)	Micron	P	P	P	P	P	P	P	P	P	P
MT16LSDT3264AG- 10EB1 (256M)	Micron	P	P	P	P	P	P	P	P	P	P
HYB39S64800AT-8 P/N 71.63323.112 (64MB)	APACER	P	P	P	P	P	P	P	P	P	P
HYB39S64800AT-8 P/N 71.63323.115 (64MB)	APACER	P	P	P	P	P	P	P	P	P	P
THMY6432G1EG-80 (256MB)	TOSHIBA	P	P	P	P	P	P	P	P	P	P
SN57S658020-7 0011 (128MB)	LEO	P	P	P	P	P	P	P	P	P	P

5.2 Internal IDE Storage Device:

The test is to ensure the Internal storage device connected to IDE channel could work properly .The test will describe as follow the table list :

1. The Internal IDE drive can auto detect by system BIOS , install Operation System and all support devices driver.
2. The Internal IDE drive can be make multi-partition and copy-compare-delete .
3. The internal IDE drive can pass the utilities test example:Qapluse, Amidiag, Winbench 99.

4. The internal IDE driver can pass the suspend test by HCT test.

Product Name	Vendor	Test Configuration									
		WIN98		WIN95 OSR2.5		NT4.0+ SP4		DOS/ WFW		Windows 2000	
Test Stage(S=Stress/F=Full)		S	F	S	F	S	F	S	F	S	F
CD-ROM CR-175-B (FW:5DCF)	MATSUSHITA	P	P	P	P	P	P	P	P	P	P
CD-ROM CR-176-B (FW:6TCW)	MATSUSHITA	P	P	P	P	P	P	P	P	P	P
CD-ROM XM-1902B FW:1k16	TOSHIBA	P	P	P	P	P	P	P	P	P	P
ST34313A U8 (FW: 3.23) 4.3GB	Seagate	P	P	P	P	P	P	P	P	P	P
ST38410A U8 (FW:3.20) 8.4GB	Seagate	P	P	P	P	P	P	P	P	P	P
ST315323A U10 (FW:3.02) 15.3GB	Sagate	P	P	P	P	P	P	P	P	P	P
ST310212A U10 (FW:3.02) 10.2GB	Seagate	P	P	P	P	P	P	P	P	P	P
ST320423A U10 (FW:3.02) 20.4GB	Seagate	P	P	P	P	P	P	P	P	P	P
ST310210A 10.2GB (FW:3.11)	Seagate	P	P	P	P	P	P	P	P	P	P
DJNA-371350 13.5GB (FW:J760A30K)	IBM	P	P	P	P	P	P	P	P	P	P
136AA 13.6GB (FW:29.05T29)	WD	P	P	P	P	P	P	P	P	P	P
SV1022D 10.2GB (FW:MK200-49)	Samsung	P	P	P	P	P	P	P	P	P	P
MPF3102AT 10.2GB (FW:0028)	Fujitsu	P	P	P	P	P	P	P	P	P	P
MPE3064AT-AL 6.4GB (FW:ED-03-04)	Fujitsu	P	P	P	P	P	P	P	P	P	P
20.4AT 20.4GB (FW:A0309)	Quantum	P	P	P	P	P	P	P	P	P	P

5.3 Internal FAX/Modem Card Function Test :

The test is to ensure the Internal FAX/Modem Card function could work properly .The test will describe as follow the table list:

The FAX/MODEM function test process included the list, please see below:

5. The Internal FAX/Modem Card can receive 50 MB data from others computer FAX/MODEM

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- port and could work properly in all support operating system.
6. The Internal FAX/Modem Card can send 50 MB data to others computer FAX/MODEM port and could work properly in all support operating system.

Product Name	Vendor	Test Configuration			
		WIN98		WIN95 OSR2.5	
Test Stage(S=Stress/F=Full)		S	F	S	F
PCI Plug & Play FAX/MODEM 56K PCT789T-A	CastleNet	P	P	P	P

5.4 Other PCI Card:

This test is ensuring the PCI card could be used with "SAHARA 3810 ", and function work properly.

Product Name	Vendor	Test Configuration			
		WIN98		WIN NT 4+SP5	
Test Stage(S=Stress/F=Full)		S	F	S	F
VGA Card Voodoo 2	Voodoo	P	P	P	P
VGA Card Rage pro turbo	ATI	P	P	P	P
Sound Card	Creative	P	P	P	P

5.5 Multimedia Kits:

The test is to ensure the multimedia device connected to the "SAHARA 3810" system could work properly .The test will describe as follow the table list:

Product Name	Vendor	Test Configuration			
		WIN98		WIN95 OSR2.5	
Test Stage(S=Stress/F=Full)		S	F	S	F
Headphone	JS	P	P	P	P
Microphone	JS	P	P	P	P
Speaker	MIDILAND	P	P	P	P

DVD-ROM (SR-8174-BXXA)	MATSUSHI TA	P	P	P	P
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6.Power On/Off and Reboot Cycle

The test is to ensure the “SAHARA 3810” system power on in-rush current will not cause any damage .The test will describe as follow the table list :

The Power On/Off and Reboot Cycle test process included the list, please see below :

1. The unit will keep running power cycles over night . A power cycle is defined as boot to operating system and then restart system up to 1000 times . Any error occurred during the cycle will be logged.
2. The Power On/Off and Reboot Cycle total pass times must meet the Spec.

Product Name	Vendor	Test Configuration							
		WIN98		WIN95 OSR2.5		NT4.0+ SP5		WIN2000	
Test Stage(S=Stress/F=Full)		S	F	S	F	S	F	S	F
Reboot Test	FIC	P	P	P	P	P	P	P	P
Power on/off	FIC	P	P	P	P	P	P	P	P

7.Battery Power Consumption Test

The test is to ensure the “SAHARA 3810” system power off not cause any battery lose .The test will describe as follow the table list :

The battery power consumption test process included the list, please see below :

1. The unit will plug in all PCI /ISA device on each slots and keep power core away than measurement battery circuit current.

Product Name	Vendor	Test Configuration
		Toshiba CR2032
Power Multimeter	Fluke 45	0.012mA

2. The battery power consumption test result .
190mAH/24hrs/365day/0.012mA=1.81(Year)

8. Software Test

8.1 Windows 98 SE :

The test is to ensure the support Windows98 SE Operating System & WHQL V9.X diagnostic test application of functionality could work properly, Let “SAHARA 3810” system could get Microsoft of “Design for WINDOWS98 Logo” .The test will describe as follow the table list:

Product Name	Vendor	Test Configuration		Note
		English	Japanese	
Windows98SE Installation	Microsoft	P		
All Driver Installed to Windows98	Microsoft	P		

8.2 Windows95 OSR2.5 :

The test is to ensure the support WIN95 OSR2.5 Operating System & Win95 HCT V9.X diagnostic test application of functionality could work properly .The test will describe as follow the table list:

Product Name	Vendor	Test Configuration		Note
		English	Japanese	
Windows95 OSR2.5 Installation	Microsoft	P		
All Driver Installed to Win95 OSR2.5	Microsoft	P		

8.3 Windows NT v4.0 + Service Pack 5 :

The test is to ensure the support WinNT V4.0 Operating System with WinNT V9.X HCT diagnostic test application of functionality could work properly, Let the “SAHARA 3810” system could get Microsoft of WinNT HCT Logo .The test will describe as follow the table list:

Product Name	Vendor	Test Configuration		Note
		English	Japanese	
Windows NT V4.0 Installation	Microsoft	P		
All Driver Installed to WinNT V4.0	Microsoft	P		

8.4 DOS V6.22 :

The test is to ensure the support DOS V6.22 Operating System & diagnostic application test of functionality could work properly .The test will describe as follow the table list:

Product Name	Vendor	Test Configuration	Note
		English	
MS-DOS V6.22 Installation	Microsoft	P	
QAPLUSFE V5.60	Diagsoft	P	
AMI Diag V6.0	AMI	P	

8.5 Windows 2000 :

The test is to ensure the support Windows 2000 Operating System with of functionality could work properly. The test will describe as follow the table list:

Product Name	Vendor	Test Configuration	Note
Windows 2000 Installation	Microsoft	P	
Windows 2000 HCT 9.X	Microsoft	P	

8.6 Software Applications :

The test is to ensure the support all applications of functionality could work properly .The test will describe as follow the table list:

Item	Descriptions	Version	O.S.	Language	Status
Diagnostic	AMIDIAG	6.0	DOS	English	P
	Qaplus	5.6	DOS	English	P
	AMI Fault Finder	1.0	DOS	English	P
	BAPCO	4.0	Windows NT	English	P
Program	ZD 3D Winbench 99	1.2	Windows 95/98	English	P
	ZD 3D WinBench 2000	1.0	Windows 98	English	P
	ZD Winstone 99	1.2	Windows 95/98	English	P
	ZD WinBench 99	1.1	Windows 95/98	English	P
	SYSMARK 98		Windows 98	English	P
	QAPLUS	5.6	DOS	English	P
	Xing Soft MPEG Player	3.3	Windows 95	English	P
	Norton Utility	3.0	Windows 95	English	P
	PC-cillin 98	4.02	Windows 95/98	English	P
	Norton Antivirus	5.0	Windows 95/98	English	P
	Internet Explore	5.0	Windows 95	English	P
	Office 97		Windows 95/98	English	P
	Office 2000		Windows98SE	English	P
	Office 2000		Windows98SE	Japanese	P

8.7 Benchmark Tools :

The test is to ensure the support all benchmark test applications of functionality could work properly, Let us can getting better of performances result .The test will describe as follow the table list:

Product Name	Vendor	Test Configuration	Note
		WIN95/ Win98	
Winbench 99 V1.1	ZDBench	P	
Content Creation WinStone	ZDBench	P	
Winstone 99 V1.2	ZDBench	P	
3D WinBench 99 V1.2	ZDBench	P	
3DwinBench 2000 1.0	ZDBench	P	

9. PC 99 Function Test

9.1 ACPI Function Test:

The test is to ensure the on-board H/W & BIOS functionality could meet the PC99 ACPI Spec. and it could work properly .The test will describe as follow the table list:

Product Name		Vendor	Test Configuration				Note
			Windows 95	Windows 98 SE	Windows NT4+SP6	Windows 2000	
ACPI 1.0	S0(Power On)	Microsoft	N/A	P	N/A	P	
	S1(Standby)		N/A	P	N/A	P	
	S3(STR)		N/A	P	N/A	P	
	S4(STD)		N/A	P	N/A	P	
	S5(Shutdown)		N/A	P	N/A	P	
APM 1.2	Standby	Microsoft	P	P	P	P	
	Suspend		P	P	P	P	

9.2 PCI V2.1 Function Test:

The test is to ensure the System PCI Device can meet PCI V2.1 & PC99 Spec. & System could work properly in Windows98 & Windows95 OSR2.5 Operating System, .The test will describe as follow the table list:

Product Name	Test Configuration		Note
	Windows 95/98	Windows 2000	
PCI Device Share IRQ Test	P	P	

10. Installation from CD-ROM function Test:

The test is to ensure the System can be install from CD-ROM if had insert CD Kits to CD-ROM and the System installation could work properly .The test will describe as follow the table list:

Product Name	Vendor	Test Configuration			Note
		Windows 95/98	Windows NT4+SP5	Windows 2000	
Install from ATAPI CD-ROM CR-175-B FW:50CF	MATSUSHITA	P	P	P	
Install from ATAPI CD-ROM CR-176-B FW:6TCW	MATSUSHITA	P	P	P	
Install from ATAPI CD-ROM XM-1902B FW:1K16	TOSHIBA	P	P	P	

Appendix A : System Performance Benchmarks Report

A1. System Tests Configuration :

SYSTEM	SAHARA 3810
Main Board	SAHARA 3810 VER:2.2
CPU	Intel Celeron 533 MHz
BIOS	VC604
Memory	128MBX2
Graphics	Intel 82810 E Integrated UMA Graphics

HDD	IDE Seagate ST310212A 10.2GB
CD-ROM	IDE CR-176B 24X
O.S.	Windows 98 with DX6 Windows NT 4.0 with SP5 Windows 2000 with DX7

A2. Benchmarks Performance

The table below provides more detailed benchmark testing data about the "SAHARA3810". The board was configured with Celeron 533MHz, 128MB x 2 SDRAM.

Benchmarks	Weighted Suite	WIN98	WIN NT	WIN 2000
WinStone 99 1.2	<i>Business Winstone 99</i>	22.6	28	23
	<i>H/E WinStone 99</i>	N/A	29.3	25.4
WinBench 99 1.1	CPUMark 99	63.7	53.8	13.8
	FPU WinMark	3880	3230	1830
	Business Disk WinMark	2790	3020	2220
	H/E Disk WinMark 99	10500	8170	8020
	Business Graphics WinMark 99	119	129	84.6
	H/E Graphics WinMark 99	272	473	250
3D WinBench99 1.2	3D Winmark 99	218	N/A	N/A

Appendix B : Driver & Utility Version List

Chipset	Operating System	Version	Notes
Intel 82810	Windows 98/95	PV2.3 BUILD 0014	
	Windows NT4	PV2.3 BUILD 0014	
	Windows 2000	PV2.3 BUILD 0014	
VGA	Windows 98/95	4.12.01.2576(PV4.0)	
	Windows NT4	4.03.1381.2576(PV4.0)	
	Windows 2000	5.12.01.2576(PV4.0)	
AUDIO	Windows 95	4.06.0542	
	Windows NT4	4.02.0022	
	Windows 98/2000	5.12.2239	
NIC	Windows 98/95	3.7	
	Windows NT4	3.7	



	Windows 2000	3.7	
Intel ATA-66	Windows 98	2.00.004	
	Win NT4+SP5	2.00.004	
AMI S4 Utility	Windows 98 (ACPI)	2.2T	
AMI BIOS Flash Utility	DOS6.22 DOS7.0	8.21.00	

Appendix C: Special Device Test

C1. Riser Card

PART NO.	Description	O.S.	Resault
51-40659E03	RISER CARD V1.0 FOR SAHARA 3810	95/98/NT/2000	PASS

C2. LED Board

PART NO.	Description	O.S.	Resault
51-40522-01	LED-B V1.1 FOR SAHARA II (GREEN)	95/98/NT/2000	PASS
51-40522E02	LED-B V2.0 FOR SAHARA-1000	95/98/NT/2000	PASS