

# **Sabre1815 Compatibility Test Report**

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**Revision History**

<b>Document Revision</b>	<b>Issued Data</b>	<b>Description</b>
Revision 0.1	Jan/04/2001	Preliminary test Report for M/B 1.4
Revision 1.0	Mar/06/2001	First release for M/B 1.5
Revision 1.1	03/27/2001	Release for OEM customer
Revision 1.11	03/30/2001	Modify report issue
Revision 1.2	04/10/2001	Release for Sabre1815 series.
Revision 1.21	04/20/2001	Update CPU Celeron 800, 850 @100Mhz support
Revision 1.3	05/31/2001	Update BIOS and Devices.

## **1. Overview**

This plan describes the test stage & procedure to be followed during Engineering Verification Test /Design Verification Test (EVT/DVT) of the “**Sabre**”. 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 process.

- **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 R&D team. FIC will hold problem review meeting approximately once each week to review DVT status, define the debug team & assign corrective action.

The purpose of the Engineering / Design Verification Test (EVT/DVT Test) is to demonstrate **SABRE** can meet all functionality goals including all testing process, as stated in the engineering specification. Any problems and defects found during DVT test stage that should be documented, analyzed and betaken corrective action. After perform 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 requirements as we submit to regulatory compliance.
4. Make sure all problems found during the DVT are corrected and proceed to MVB stage.



## 2. System Features

<b>CPU</b>	Socket 370 processors: <ul style="list-style-type: none"><li>● Intel Celeron PPGA 700+MHz@ 66MHz</li><li>● Intel Coppermine-256K FC-PGA 850 MHz ~1 GHz@ 100,133MHz</li><li>● VRM 8.4 onboard</li></ul>
<b>Chipset</b>	North Bridge (GMCH) <ul style="list-style-type: none"><li>● Intel 815</li></ul> South Bridge (ICH2) <ul style="list-style-type: none"><li>● Intel 82801BA</li></ul>
<b>Format</b>	Data book chassis as a standard
<b>Memory</b>	Two 168 pin DIMM sockets, 64 up to 512 MB maximum add on system memory (2x256MB), 3.3V, unbuffered, PC133 SDRAM DIMMs supported (SPD, Rev. 1.2A, support required)
<b>Super IO</b>	Winbond 83627 HF
<b>ROM flash</b>	Intel FWH or SST Flash ROM sector erasable Flash with Boot block at the top
<b>Graphics</b>	Embedded in Intel 815 (GMCH) Graphics integrated w/wo 4MB SGRAM , D-SUB/ DVI(option) Support
<b>Audio</b>	Controller: <b>Intel 82801 BA ( ICH 2 )</b> Codec: Crystal 4299 AC97 codec Logo required: <b>AC-97, PC-99.</b> Input / Output method : Connectors: <b>Line_in, Line_out, Mic_in</b> Pin-header for front multimedia: S/PDIF out(option)
<b>IDE</b>	2 IDE channels, Ultra DMA 100 mode
<b>Removable Mass Storage</b>	CD-ROM ,or DVD-ROM, or CD-RW (Desktop Size),
<b>Slots</b>	3 PCI Slots on PCI riser card (1 half size).
<b>Status Panel</b>	1xPower On—Green, Suspend—Blinking Green 1XHDD—Green 1XLan—Yellow
<b>Package</b>	Data book
<b>Network Interface</b>	<b>Intel 82801 BA (ICH 2) 10/100 Base-T RJ-45</b>
<b>Connectors</b>	Rear I/O <ul style="list-style-type: none"><li>● Serial port x1</li><li>● USB x2</li><li>● Line-out, Line-in, Mic-in</li></ul>



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	<ul style="list-style-type: none"><li>● VGA connector x1</li><li>● DVI connector x1(option)</li><li>● Parallel port x1</li><li>● AC power connector (AC-in)</li><li>● PS2 for K/B and mouse</li><li>● RJ45 x1</li></ul> Front IO <ul style="list-style-type: none"><li>● Card Bus Socket Type II x1(option)</li><li>● 1394 x2(option)</li><li>● USB x2</li><li>● S/PDIF out x1(option)</li></ul>
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- **Basic Configuration**

<b>System</b>	<b>SABRE (# 1)</b>	<b>SABRE (#2)</b>	<b>SABRE (#3)</b>
<b>Process</b>	Intel Celeron 700MHz (66)	Intel Celeron 766MHz(66)	Intel Coppermine 800MHz(100)
<b>Memory</b>	64MB X2	128MB*2	128MB X2
<b>Chassis</b>	Data book	Data book	Data book
<b>HDD</b>	20GB	30GB	40GB
<b>CD-ROM</b>	CD-ROM 52X	DVD-ROM 12X	CD- ROM 52X

<b>System</b>	<b>SABRE (# 4)</b>	<b>SABRE (#5)</b>	<b>SABRE (#6)</b>
<b>Process</b>	Intel Coppermine 850MHz(100)	Intel Coppermine 933MHz(133)	Intel Coppermine 1.0 GHz(133)
<b>Memory</b>	384MB/256+128MB	256MB/128MB*2	512MB/256MB*2
<b>Chassis</b>	Data book	Data book	Data book
<b>HDD</b>	40GB	40GB	40GB
<b>CD-ROM</b>	CD-RW 8X4X32X	DVD 12X	COMB (DVD+CD-RW)





### 3. Milestone and Objectives

- **Accept Test: (EVT1 Stage)**

This stage focuses on H/W, EMI pre-test, power supply full loading test, mechanical muck-up checking and signal performance test, H/W function test. We will found any H/W design issue in this stage. If the system's major bug or fatal error above 5 items then R&D product qualification team will reject the system to design team.

- **Stress Test: (EVT2 Stage)**

This stage focuses on system with support option devices test, power supply final test, mechanical with environmental final test; BIOS & driver of compatibility test, Microsoft WHQL Logo Pre-test, verify and fixed bug from accept/stress test stage. If the system's major bug or fatal error above 1 item then R&D product qualification team will reject the system to design team.

- **Full Test: (DVT Stage)**

This stage focuses on final version of Main Board and BIOS functional test, performance test CD-Image test & H/W function test. We will found any H/W, BIOS, CD-IMAGE & Compatibility issue in this stage. If the system's major bug or fatal error above 0 items then R&D product qualification team will reject the system to design team.

**PS :The test result will show as below:**

EXAMPLE:

Product Name	Vendor	Test Configuration										
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		Note
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
UDMA 66 Mode Test	INTEL	F#1	#1	P#2	#2	P#3	#3	P#4	#4			

**P#2:**Means System No.2 passed on this test item.

**F#1:**Means System No.1 Failed on this test item

**#1:**Means this item of test is not finish yet.

**Empty Blank** :Means this item not support or we didn't plan to do the test.



#### 4. System Test Period & H/W Requirements

The system test schedule time is planed with 5 cycle's test from 08/23/2000 to 02/12/2001. It will require 49 working days and minimum 12 machines at test stage to Complete the testing .The schedule time might be need added if there not enough machines, Or the test machine might be need added if there schedule time were shortening it.

We would require enough memory DIMM to fully populate the machines that their maximum memory configuration .We would also need variants of CPUs, and Storage Devices for testing.

Test Stage	Check Point	Milestone
Stress Test	All H/W Feature Test Pass. Major Bug doesn't over 5 items.	12/26/2000
Full Test	All BIOS & H/W Feature Test Pass. Major Bug doesn't over 1 item.	2/12/2001

	Cycle	Starting Day	Target Day	Working Day	Remark
Planned (EVT1)	Accept Test	08/23/2000	09/05/99	10 Days	M/B v1.0
Actually		08/23/2000	09/05/99		
Planned (EVT2)	Stress Test	09/19/2000	12/26/2000	14 Days	M/B v1.4
Actually		09/19/2000	12/26/2000		
Planned (DVT)	Full Test	01/05/2001	02/12/2001	20 Days	M/B v1.5
Actually		02/12/2001	03/16/2001	25 days	



## 5. 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 :

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

The test is to ensure the [AMI](#) 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 (Maximum [2 seconds/day](#)).
5. The Power Management Utility (PMU) Function can work properly in. all support Operating system.
6. The BIOS Function must meet the PC99 & ACPI V1.0 Spec.
7. The Switch/Jumper Setting Function must meet the [FIC](#) Spec

Product Name		Vendor	Test Configuration										Note
			WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		
Test Stage (A =Accept, S=Stress F = Full)			A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
RTC (Real Time Clock)	With AC		P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4		P#5	
	W/O AC										P#5	P#5	
Device Detect function			P#1	P#1	P#1	P#2	P#3	P#3	P#4	P#4			
Clear CMOS Test											P#5	P#5	
Clear Password Test											P#5	P#5	
BIOS Basic Function			P#1	P#1	P#1	P#1							
ACPI V1.0 Function S1 Mode Test			P#1	P#1	P#1	P#1			P#4	P#4			
ACPI V1.0 Function S3 Mode Test			P#1	P#1	P#1	P#1			P#4	P#4			
ACPI V1.0 Function S4 Mode Test			P#1	P#1	P#1	P#1			P#4	P#4			
APM 1.2 Test							P#3	P#3			P#5	P#5	
BIOS Flash Test											P#6	P#6	
Switch /Jumper Setting											P#5	P#5	



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

Product Name	Vendor	Test Configuration										Note
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
Windows 98 keyboard KWD-820	Unikey	P#1		P#2			P#3	P#6			P#6	
Windows 98 keyboard ACK-260a	Silitek		P#1						P#4	P#5		
Windows 98 keyboard 5201	BTC		P#5		P#2	P#3		P#4				
Windows 98 keyboard 5199	BTC		P#1		P#1		P#2		P#2		P#4	
Two button Mouse Lynx99	Qtronix	P#1	P#5	P#2		P#3			P#6			
Scrolling Mouse M-S48a	Logitech	P#5	P#1	P#6	P#2		P#3	P#4	P#4			

## 5.3 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, the devices could work properly.
3. Plug & Play Serial Port Mouse connected in Serial Port, the device can detect and work properly.
4. Plug & Play External FAX/Modem connected in Serial Port, the device can detect and work properly.



Product Name	Vendor	Test Configuration										
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		Note
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
Intelli Serial Mouse	Microsoft	P#1	P#1	P#2				P#4	P#4			
External Plug & Play FAX/MODEM 56K	GVC			P#2	P#2			P#4	P#4			
External Plug & Play FAX/MODEM 56K	Motorola	P#1	P#1									

#### 5.4 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. Printer setting on Bi-direction /ECP Mode and connecting in Parallel port could work properly in all support Operating System.
2. Printer setting on Bi-direction/ECP Mode connecting in Parallel port in all support operating system, the devices could work properly.
3. Floppy Device Drive can work properly in all support operating system when connected to Parallel Port.

Product Name	Vendor	Test Configuration										
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		Note
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
Stylus Color 900	EPSON	P#1	P#1	P#2	P#2							
Laser Jet 1100	HP					P#3	P#3	P#4	P#4			
Universal Direct Cable ECP/EPP mode		P#1	P#1	P#2	P#2							

#### 5.5 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 / WIN 2000 SP1 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										Note
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
USB Keyboard	Microsoft Natural Keyboard	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	P#5	P#5	
USB MOUSE	Logitech (Mouseman wheel)	P#1	P#1	P#2	P#2			P#4	P#4	P#5	P#5	
USB JOYSTICK	Logitech Wingman Force		P#1		P#2							
USB HUB with USB device	Keyboard	P#1	P#1	P#2	P#2			P#4	P#4			
	Mouse	P#1	P#1	P#2	P#2			P#4	P#4			
	Joystick	P#1	P#1	P#2	P#2			P#4	P#4			
	FAX/Modem	P#1	P#1	P#2	P#2			P#4	P#4			
	Printer	P#1	P#1	P#2	P#2			P#4	P#4			
	Scanner	P#1	P#1	P#2	P#2			P#4	P#4			
	Speaker	P#1	P#1	P#2	P#2			P#4	P#4			
USB Printer	EPSON Color 900	P#1	P#1	P#2	P#2				P#4			
USB Scanner	Mustek U 1200	P#1	P#1	P#2	P#2				P#4			
USB Speaker	Speaker Phillips		P#1		P#2				P#4			
USB Video Capture	Logitech	P#1	P#1	P#2	P#2				P#4			
USB Monitor		P#1	P#1	P#2	P#2				P#4			
USB LAN		P#1	P#1	P#2	P#2				P#4			
USB Game Pad		P#1	P#1	P#2	P#2				P#4			
USB ZIP	IOMEGA ZIP 100	P#1	P#1	P#2	P#2				P#4			
USB LS-120	Imation	P#1	P#1	P#2	P#2				P#4			
USB Floppy	Y-E Data			P#2	P#2				P#4			
USB Direct Cable	Link-100	P#1	P#1	P#2	P#2				P#4			



## 5.6 Floppy Controller Test:

The test to ensure the Floppy controller functionality could work properly .The test will describe as follow the table list:

The Floppy controller test process included the list, please see below :

1. All support operating system can install from Floppy drive & the controller could work properly.
2. Floppy device can work properly when it is control by the Floppy controller, (example: access data, format disk, read data, write data).

Product Name	Vendor	Test Configuration										Note
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
1.44MB, FDD	Multiple	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	P#5	P#5	
3 Mode FDD	Multiple			P#2	P#2	P#3	P#3	P#4	P#4			

## 5.7 On-Board IDE Controller Function Test:

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

The south-bridge chipset test process included the list, please see below :

1. The south-bridge chipset of all support Function transfer mode (PIO mode 4, UDMA 4,5) 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										Note
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
PIO Mode Test	INTEL	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	P#5	P#5	
UDMA 66 Mode Test	INTEL	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4			
UDMA 100 Mode Test	INTEL	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4			

## 5.8 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 :

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										
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		Note
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
Resource Change Test	Multiple	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4			
Driver Installation Test	Cirrus	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4			
Record Function Test	Cirrus	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4			
Speaker Output Function Test	Cirrus	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4			
Line-In from Radio	Diamond	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4			
S/PDIF Out	Denon	F#1	P#1	F#2	P#2	F#3	P#3	F#4	P#4			

## 5.9 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.
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 only in 1600x1200 256 & CRT 1024x768 16 bits high colors.
4. The VGA chipset of DPMS function can work properly in all support Operating System.
5. The “Quality and Centering Check and Refresh Rate Check” is using system #4 in win2000 and Philips 109P CRT and Mitsubishi RDT141S RGB LCD panel.





Product Name	Vendor	Test Configuration										
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		Note
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
DDC Function Test	INTEL	P#1	P#1	P#2	P#2			P#4	P#4			
DPMS Function Test		P#1	P#1	P#2	P#2			P#4	P#4			
VGA all support Mode Test	INTEL	P#1	P#1		P#2		P#3	P#4	P#4	P#5	P#5	
Multiple Display Support Test	INTEL	P#1	P#1	P#2	P#2			P#4	P#4			
19” 109P (CRT)	Philips	P#1	P#1					P#4	P#4			
17” 107S (DDC)	Philips	P#1	P#1	P#2	P#2	P#3	P#3					
17” PS775(DDC)	Viewsonic							P#4	P#4	P#5	P#5	
RDT141S(RGB LCD)	Mitsubishi	P#1	P#1					P#4	P#4	P#5	P#5	
DVI Function Test		P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	P#5	P#5	

#### 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 DVI output function

**5.10 PCMCIA Socket Function Test:**

The test to ensure the PCMCIA controller functionality could work properly .The test will describe as follow the table list:

1. PC Card devices (DC 5V, 16 Bits) can hot plug-in to PCMCIA socket & work properly in all support of operating system.
2. The Card Bus device (DC 3.3V, 32B its) can hot plug-in to PCMCIA socket & work properly in all support of operating system.
3. The system can hot swap changed different Card Bus devices (DC 3.3V, 32B its) in PCMCIA socket & work properly in all support of operating system.
4. The system can hot swap changed different PC Card devices (DC 5V, 16 Bits) in PCMCIA socket & work properly in all support of operating system.
5. Full test stage add ACPI complaint test.

Product Name	Vendor	Test Configuration						
		WIN ME		WIN98 SE ACPI		Win2000 SP1		Notes
Test Stage (A/S = Accept / Stress , F = Full)		A/S	F	A/S	F	A/S	F	
PC Card 16Bits								
SlimSCSI AHA-1460D	Adaptec	P#1	P#1	P#2	P#2	P#4	P#4	Driver update by 3Com
Megahertz 56K Fax/Modem	3COM	P#1	P#1	P#2	P#2	P#4	P#4	
CompactSSFDC Smart Media Card	PRETEC	P#1	P#1	P#2	P#2	P#4	P#4	
SmartMedia PC-AD3 64 MB	FUJIFILM	P#1	P#1	P#2	P#2	P#4	P#4	
Toshiba MK2001MPL 2GB HDD	Toshiba		P#1		P#2		P#4	
Microdrive DMDM-10340 340MB	IBM	P#1	P#1	P#2	P#2	P#4	P#4	
Compact Flash Adapter+ SanDisk 40MB CF card	PQI	P#1	P#1	P#2	P#2	P#4	P#4	
VF-1156PV/C3 56K Modem	GVC		P#1		P#2		P#4	
DM560 56K Modem	D-Link		P#1		P#2		P#4	
Card Bus Card 32 Bits								
SlimSCSI AHA-1480A	Adaptec	P#1	P#1	P#2	P#2	P#4	P#4	
SlimSCSI Ultra SCSI	BUFFALO	P#1	P#1	P#2	P#2	P#4	P#4	
1394 I/F IFC-ILCB	BUFFALO	P#1	P#1	P#2	P#2	P#4	P#4	
LPC3-TX-CB	BUFFALO		P#1		P#2		P#4	
REX-CB31	RATOC		P#1		P#2		P#4	



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FNW-3601-T	PCi		P#1		P#2		P#4	
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## 6. 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:

### 6.1 CPU Compatibility Test:

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

Product Name	Vendor	Test Configuration										
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		Note
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
Celeron 700	Intel	P#1	P#1		P#1							
Celeron 766	Intel	P#2	P#2	P#2		P#2			P#2			
Celeron 800 @100Mhz	Intel	P#2	P#2	P#2		P#2			P#2			
Celeron 850 @100Mhz	Intel	P#2	P#2	P#2		P#2			P#2			
Pentium 800E	Intel					P#3						
Pentium 850E	Intel	P#4	P#1	P#4	P#2	P#4	P#3	P#4	P#4		P#5	
Pentium 733	Intel		P#3									
Pentium 800EB	Intel		P#4									
Pentium 866	Intel	P#3		P#3		P#3						
Pentium 933	Intel									P#5		
Pentium 1G	Intel	P#6	P#1	P#6	P#2		P#3	P#6	P#4			
Pentium 1.13G	Intel											

### 6.2 Memory Module Test:

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

Product Name	Vendor	Test Configuration										
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		Note
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
64MB DIMM	Micron MT4LSDT864AG-133B1 PC-133	P#1	P#1									



	Hyundai HYM7V63801BTFG- 75 BA PC-133	P#1	P#1									
	Infineon HYS64V8300GU- 7.5-C PC-133	P#1	P#1									
128MB DIMM	Micron MT8LSDT1664AG- 133B1 PC-133			P#2	P#2	P#3	P#3	P#4	P#4	P\$5	P#5	
	Hyundai HYM7V631601 PC- 133			P#2	P#2	P#3	P#3	P#4	P#4	P\$5	P#5	
	Infineon HYS64V16200GU- 7.5-C PC-133			P#2	P#2	P#3	P#3	P#4	P#4	P\$5	P#5	
256MB DIMM	Micron MT16LSD3264AG- 133B1 PC-133							P#4	P#4	P#6	P#6	
	Hyundai HYM7V651601BTF G-10S PC-133							P#4		P#5		

### 6.3 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

Product Name	Vendor	Test Configuration										Note
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
IDE CD-ROM	Lite-on LTN-526S 52X	P#1	P#1					P#4	P#4			
	BTC BCDF560A 52X			P#2	P#2			P#4	P#4			
	Samsung SC-152C 52X	P#1	P#1									
IED DVD	Pioneer DVD-115	P#5	P#5	P#2	P#2							



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	Pioneer DVD-116	P#5	P#5	P#2	P#2							
	Panasonic SR8586-B	P#5	P#5	P#2	P#2							
	Samsung SD612	P#5	P#5	P#2	P#2							
	BTC BDV212B	P#5	P#5	P#2	P#2							
IDE CD-RW	Philips CDD4801	P#1	P#1					P#4	P#4			
	Samsung SW-208			P#2	P#2			P#4	P#4			
	Panasonic CW-7586-C		P#1						P#4			
COMB	Toshiba SD-R1002	P#6	P#6					P#6	P#6			
	Samsung SM-308B		P#1						P#4			
10 GB	Seagate U5 ST310211A	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	P#5	P#5	
15 GB	Seagate U5 ST315311A			P#2	P#2							
20 GB	Seagate U5 ST320413A	P#1	P#1			P#3	P#3					
	Seagate U5 ST320413A PRC	P#1	P#1			P#3	P#3					
	Fujitsu MPG3204AT-E WD 200			P#1	P#1	P#1	P#1	P#3	P#3			
						P#3	P#3					
	SAMSUNG SV2042H	P#1	P#1							P#5	P#5	
30 GB	Seagate			P#2	P#2			P#4	P#4			
	WD 300					P#3	P#3				P#5	
	SAMSUNG SV3063H			P#2	P#2						P#5	
40 GB	Seagate U5 ST340823A							P#4	P#4	P#4	P#4	
	Fujitsu MPG3409AT			P#1	P#1	P#1	P#1	P#3	P#3			
	WD 400					P#3	P#3				P#5	
60 GB	WD 600		P#1		P#2		P#3		P#4		P#5	



#### 6.4 Add-On Card FAX/Modem Function Test:

The test is to ensure the Add-On Card FAX/Modem 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 :

1. The Add-On Card FAX/MODEM can receive 50 MB data from others computer FAX/MODEM port and could work properly in all support operating system.
2. The Add-On Card FAX/MODEM function 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										Note
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
56k V.90 PCI Modem	Castlenet	P#1	P#1	P#2	P32	P#3	P33	P#4	P#4			
56k v.90 PCI Modem Low Profile Size	TBD											

#### 6.5 SCSI Storage Device:

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

Product Name	Vendor	Test Configuration										Note
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
Cheetah 9.5 GB Ultra SCSI Hard Disk ( ST19101W )	Seagate	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	P#4	P#4	
CD-RW 4X CDE 100II External	YAMAHA	P#1	P#1	P#2	P#2			P#4	P#4	P#4	P#4	
CD-RW 8824S-NB	YAMAHA	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	P#5	P#5	
SCSI AHA 2940 AU	Adaptec	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	P#4	P#4	
SCSI AHA 2940	Adaptec									P#6	P#6	



## 6.6 Multimedia Kits:

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

Product Name	Vendor	Test Configuration										
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		Note
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
Microphone	Multiple	P#1		P#2				P#3				
Speaker	Multiple	P#5		P#2		P#3						
Internal Speaker	Multiple					P#3						
Headphone	Multiple	P#1	P#2	P#2	P#3	P#3			P#3			
Power DVD V3.0	Cyber link	P#1	P#1		P#2			P#4	P#4			
Win DVD 2.3	WIN DVD	P#6	P#1		P#2			P#5	P#4			

## 6.7 System Stress Test

The test is to ensure the system SABRE can be working in multi-task condition for a long period (24Hrs) and have not any error occurred. The test will describe as follow the table list:

Product Name	Vendor	Test Configuration								Note
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	
HCT Stress Test	Microsoft	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	
Copy Compare Delete Test	Multiple	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	
Copy compare delete + VCD(DVD) + Play wave	Multiple	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	
SysMark 2000	Bapco	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	
Winstone 2001	ZD	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	





## 6.8 Power On/Off and Reboot Cycle

The test is to ensure the SABRE 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										Note
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		DOS 7.0		
Test Stage (A =Accept, S=Stress F = Full)		A/S	F	A/S	F	A/S	F	A/S	F	A/S	F	
Reboot Test	FIC	P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4			
Power on/off	FIC									P#5	P#5	

## 6.9 Battery Power Consumption Test

The test is to ensure the SABRE 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 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	0.005ma

2. The battery power consumption test result.  
**190Mah/24hrs/365day/0.005Ma=4.3(Year)**



## 7. Software Test

### 7.1 Windows 98 SE for English Version:

The test is to ensure the support Windows98 Operating System & WHQL HCT9.5 diagnostic test application of functionality could work properly, Let **SABRE** system could get Microsoft of "Design for Windows 98 Logo". The test will describe as follow the table list:

Product Name	Vendor	Test Configuration	Note
Windows98 Installation	Microsoft	P#2	
WHQL HCT 9.502	Microsoft	P#2	
All Driver Installed to Windows98	Microsoft	P#2,	

### 7.2 Windows NT v4.0 + Service Pack 6 for English Version:

The test is to ensure the support WinNT V4.0 Operating System with WinNT HCT 9.5 diagnostic test application of functionality could work properly, Let the **SABRE** system could get Microsoft of WinNT HCT Logo. The test will describe as follow the table list:

Product Name	Vendor	Test Configuration	Note
Windows NT V4.0 Installation	Microsoft	P#3	
Windows NT HCT9.502 Test	Microsoft	P#3	
All Driver Installed to WinNT V4.0	Microsoft	P#3	

### 7.3 DOS + Diagnostic application:

The test is to ensure the support DOS v7.0 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
MS-DOS V7.0	Microsoft	P#5	
Qaplus Test		P#5	



#### 7.4 Windows 2000 Professional +SP1 for English Version:

The test is to ensure the support Windows 2000 *Professional* 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#4	
Windows 2000 HCT 9.502 Test	Microsoft	P#4	
All Driver Installed to Windows 2000	Microsoft	P#4	

#### 7.5 Windows Millennium Edition for English Version:

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

Product Name	Vendor	Test Configuration	Note
Windows ME Installation	Microsoft	P#1	
Windows ME HCT 9.6 Test	Microsoft	P#1	
All Driver Installed to Windows ME	Microsoft	P#1	

#### 7.6 Windows 98 SE for Japanese Version:

The test is to ensure the support Windows98 Japanese version Operating System of functionality could work properly. The test will describe as follow the table list:

Product Name	Vendor	Test Configuration	Note
Windows98 Installation	Microsoft	P#2	
All Driver Installed to Windows98	Microsoft	P#2	

#### 7.7 Windows NT v4.0 + Service Pack 6 for Japanese Version:

The test is to ensure the support WinNT V4.0 Japanese version Operating System of functionality could work properly. The test will describe as follow the table list:

Product Name	Vendor	Test Configuration	Note
Windows NT V4.0 Installation	Microsoft	P#3	



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All Driver Installed to WinNT V4.0	Microsoft	P#3	
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### 7.8 Windows 2000 Professional for Japanese Version:

The test is to ensure the support Windows 2000 Japanese version Operating System 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#4	
All Driver Installed to Windows 2000	Microsoft	P#4	

### 7.9 Windows Millennium Edition for Japanese Version:

The test is to ensure the support Windows Millennium Edition Japanese version Operating System of functionality could work properly. The test will describe as follow the table list:

Product Name	Vendor	Test Configuration	Note
Windows ME Installation	Microsoft	P#1	
All Driver Installed to Windows ME	Microsoft	P#1	

### 7.10 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:

Product Name	Vendor	Test Configuration				Note
		WIN ME	WIN98S E	NT4.0 +sp6	WIN 2000 SP1	
Netscape Navigator Gold V4.7	Netscape	P#1	P#1			
Real Player Plus for Win98	RealNetworks		P#1			
Internet Explorer	Microsoft	P#1	P#2	P#2	P#6	
Office 2000 Pro Edition +SR1	Microsoft		P#5			
Win Fax Pro v9.0	SYMANTEC		P#5			
PhotoShop v6.0	Adobe		P#5			
Riven (DVD Version)			P#4			



Half Life		P#4	P#4		P#5	
TOMB RAIDER III		P#4	P#4			
Flight Simulator 2000	Microsoft	P#4	P#4			
QUAKE III		P#4	P#4		P#5	
Need for Speed 2000		P#4	P#4		P#5	
Heavy Gear II		P#4	P#4		P#5	
Mech Warrior III		P#5	P#5			
Moto Racer II		P#5	P#5	P#4		
Easy CD Creator 4.02e	adaptec			P#4		
Video Wave 4	MGI			P#4		
WinDVD 2000	InterVideo	P#1	P#5	P#4	P#5	
Power DVD	Cyber Link	P#1	P#5	P#4	P#5	
Clone CD	Elaborate Byte			P#6	P#6	

#### 7.11 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
		WIN ME	WIN98 ACPI	NT4.0+ SP6	WIN 2000 SP1	
Winbench99	ZDBench	P#1	P#2	P#3	P#4	
Winstone 2000	ZDBench	P#1	P#2	P#3	P#4	
3D Winbench99	ZDBench	P#1	P#2	P#3	P#4	
CD WinBench99	ZDBench	P#1	P#2	P#3	P#4	
Audio WinBench99	ZDBench	P#1	P#2	P#3	P#4	
3D Mark 2000	MadOnion	P#1	P#2	N/A	P#4	
Fogcity		P#1	P#2	N/A	P#4	



## 8. PC 99 Function Test

### 8.1 PC99 Basic Function Test:

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

Product Name	Vendor	Test Configuration								
		WIN ME		WIN98 ACPI		NT4.0+ SP6		WIN 2000 SP1		Note
Test Stage (A = Accept, F = Full)		A	F	A	F	A	F	A	F	
On-board Resource Dynamic Function Test		P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	
Boot & Installation from CD-ROM		P#1	P#1	P#2	P#2	P#3	P#3	P#4	P#4	

### 8.2 ACPI V1.0b Function Test:

The test is to ensure the System Power management Utility (PMU) can meet ACPI V1.0b Spec. & System could work properly in Windows98 Operating System. The test will describe as follow the table list:

Product Name	Vendor	Test Configuration			Note
		Win 98 ACPI	Win ME	WIN 2000 SP1	
PC99 WHQL HCT9.502 & 9.6	Microsoft	P#2	P#1	P#4	
Resume from K/B & Mouse, Check On-Board Device Function	Multi Vender	P#2	P#1	P#4	

### 8.3 PCI V2.2 Function Test:

The test is to ensure the System PCI Device can meet PCI V2.2 & PC99 Spec. & system could work properly in Windows98 Operating System. The test will describe as follow the table list:

Product Name	Vendor	Test Configuration				Note
		Win ME	Win 98 ACPI	WinNT 4.0sp6	WIN 2000 SP1	
PCI Device Share IRQ Test		P#1	P#2	P#3	P#4	
PC99 WHQL 9.502 & 9.6	Microsoft	P#1	P#2	P#3	P#4	



#### 8.4 On-board Resource Dynamic Function Test:

The test is to ensure the System of resource can be dynamic enable / disable & change to the PC99 Spec. Recommend list in IRQ,DMA ,IO Rang and the System device could work properly in Windows98 Operating System. The test will describe as follow the table list:

Product Name	Vendor	Test Configuration				Note
		Win ME	Win 98 ACPI	WinNT 4.0sp6	WIN 2000 SP1	
Serial Port Dynamic test		P#1	P#1	P#2	P#2	
Parallel Port Dynamic Test		P#1	P#1	P#2	P#2	
Audio resource Dynamic Test		P#1	P#1	P#2	P#2	
VGA Dynamic Test		P#1	P#1	P#2	P#2	
IDE channel Dynamic Test		P#1	P#1	P#2	P#2	
PS/2 Port Dynamic Test		P#1	P#1	P#2	P#2	
LAN Dynamic Test		P#1	P#1	P#2	P#2	

#### 8.5 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
		Win ME	Win 98 ACPI	WinNT 4.0sp6	WIN 2000 SP1	
Install from ATAPI CD-ROM		P#1	P#2	P#3	P#4	



## **9. Failure Handling**

In the event of any hardware/software failure during testing, will try to reproduce the problem on other SABRE system & the system of other vendors. If it also failed on all the system, the error will be skipped. If it work on anyone of the systems, the problem will be show to the test reported.

## **10. Reporting**

The test report must include all basic configuration, operating system, support option, device & driver, application, diagnostic on all the system, If found anyone error, known limitation will be report to designer & project manager at the end of final test cycle.





## Appendix A: Process Benchmarks Performance

### A1. System Tests Configuration:

<b>System</b>	SABRE 1815 1.5
<b>Process</b>	Intel Pentium 1 GHz
<b>Memory</b>	WD601G
<b>Chassis</b>	128MBX1
<b>BackPlane</b>	Intel 82815 E Integrated Graphics
<b>HDD</b>	IDE WD 600 60GB
<b>CD-ROM</b>	IDE Samsung COMBO
<b>OS</b>	Windows ME with DX8a English

### A2. Benchmarks Performance

The table below provides more detailed benchmark testing data about the "SABRE1815". The system was configured with 1024X768X16 bit colors.

Benchmarks	Weighted Suite	WIN98
WinStone 2001 1.01	Business Winstone 2001	37.8
WinBench 99 1.2	CC WinStone 2001	34.9
	Business Disk WinMark	5300
	H/E Disk WinMark 99	16700
	Business Graphics WinMark 99	231
	H/E Graphics WinMark 99	896
3D WinBench2000 1.1	3D Winmark 2000	22

## Appendix B: Driver Version List

Chipset	Operating System	Version	Notes
Intel 815E	Windows 98	V 2.80.008a	
	Windows 2000	V 2.80.008a	
	Windows NT 4.0	N/A	
	Windows ME	N/A	
CS 4299 Audio	Windows 98	Crystal WDM Audio Codec 5.12.01.4029	
	Windows 2000	Crystal WDM Audio Codec 5.12.01.4029	
	Windows NT 4.0	Crystal WDM Audio	Will be updated

		Codec 5.12.01.4027	
	Windows ME	Crystal WDM Audio Codec 5.12.01.4029	
Intel 815E VGA	Windows 98	4.12.1.2687	
	Windows 2000	5.12.01.2687	
	Windows NT 4.0	4.03.1381.2687	
	Windows ME	4.12.1.2687	
Intel 82562 Lan	Windows 98	4.03.18.0000	
	Windows 2000	4.03.18.0000	
	Windows NT 4.0	4.03.18.0000	
	Windows ME	4.03.18.0000	
Intel Ultra ATA	Windows 98	6.03.009	
	Windows 2000	6.03.009	
	Windows NT 4.0	6.03.009	
	Windows ME	6.03.009	

## Appendix C: Special Device Test

### C1. Riser Card

PART NO.	Description	O.S.	Result
51-40839-00	RISER-C PCI Slot V1.2 FOR Sabre1815	98/ME/NT/2000	PASS



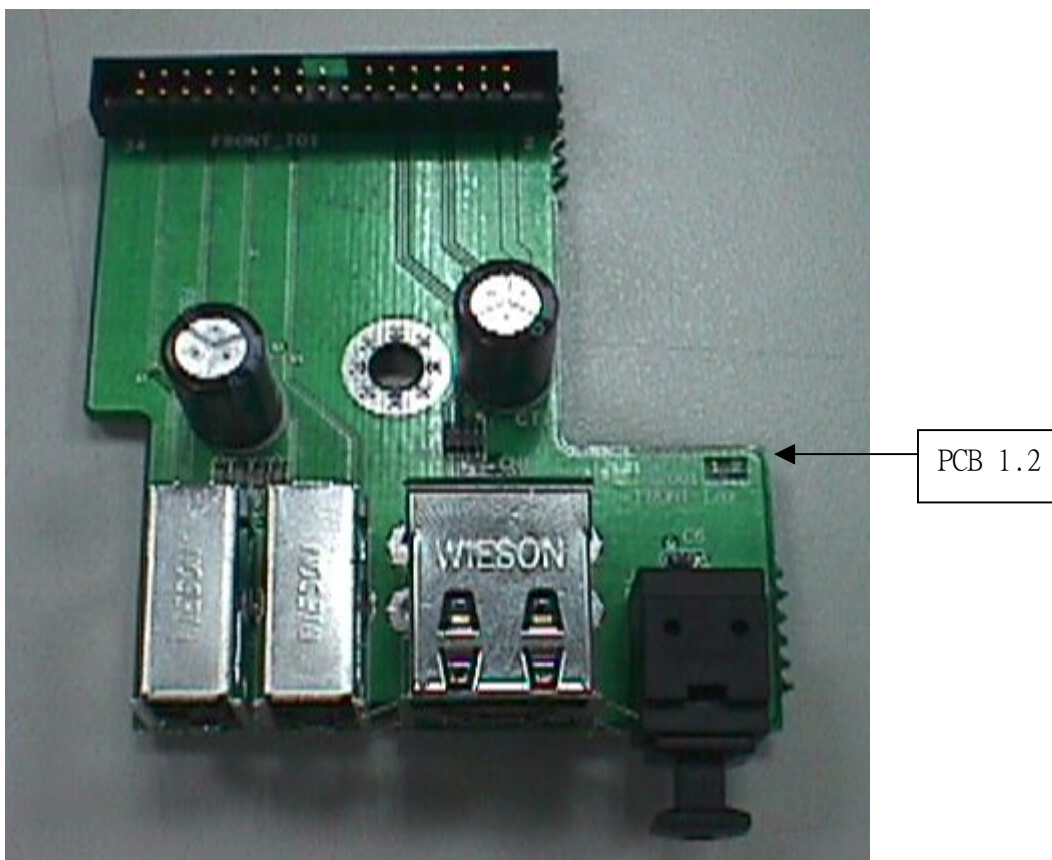
## C2. LED Board

PART NO.	Description	O.S.	Resault
51-40829-00	LED Board V1.1 FOR Sabre	98/ME/NT/2000	PASS



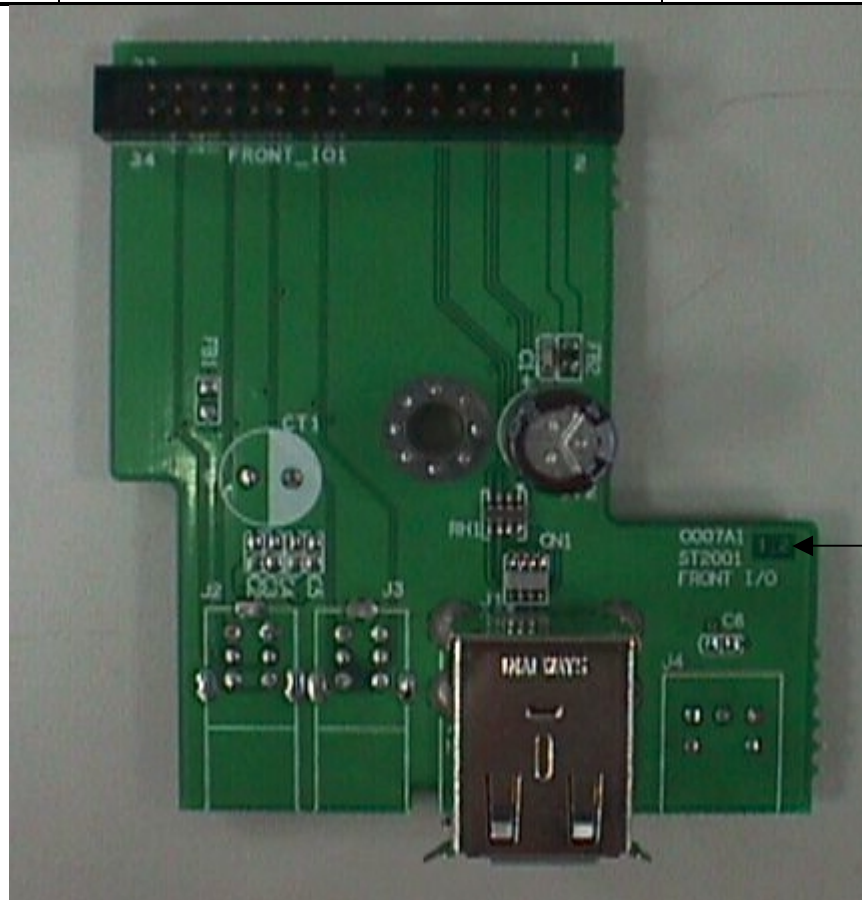
## C3. Front I/O Board

PART NO.	Description	O.S.	Resault
51-40841-00	FRONT I/O USB+1394+SPDIF V1.2 For Sabre1815 SDT B/C	98/ME/NT/2000	PASS



**C4. Front I/O Board**

PART NO.	Description	O.S.	Result
51-40840-00	FRONT I/O USB V1.2 For Sabre1815SDTA	98/ME/NT/2000	PASS



PCB 1.2