SDIAG (FUJITSU SCSI DIAGNOSTICS TOOL)

<<SDIAG.EXE Program History>>

V1.0 16/10/2000 1. Formal Release
V1.1 21/11/2000 1. Supported Target id for up to 15.
                  2. Others (indication) Fujitsu Limited

This ReadMe covers the installation and operating instructions for SDIAG(Fujitsu SCSI Diagnostics Tool) program for Microsoft Windows.

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SDIAG.EXE

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Installed compiler for Y2K fix version. (This does not affect the actual drives)

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LIABILITY DISCLAIMER

To enable use of SDIAG you must read and Accept the LIABILITY DISCLAIMER, which appears after execution of the SDIAG software.

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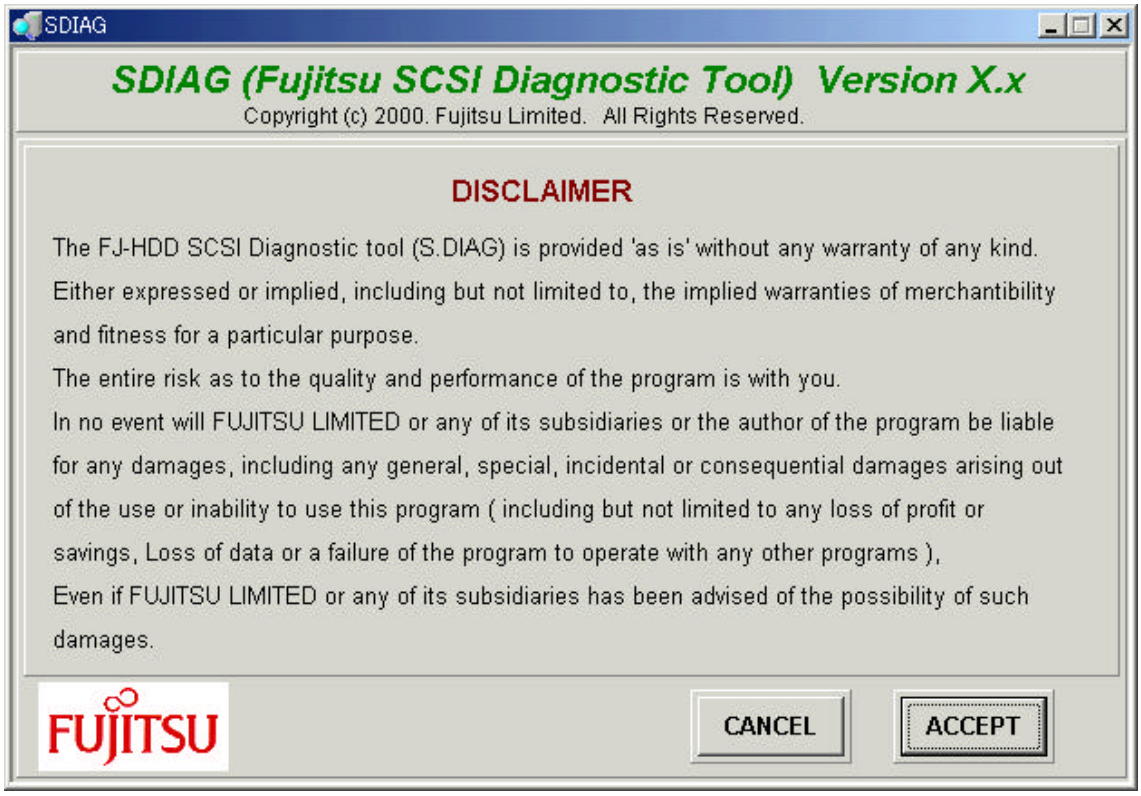

System Configuration

1. Supported Operating Systems: Windows NT/9x/2000 or later.
2. Supported PC: AT Compatible machine, except some specific PC system, please refer to the item "**Known problems**".
3. SCSI Card: SCSI Card can be operated under ASPI Manager. (Not confirmed other than Adaptec SCSI card)
4. FC Card: FC Card can be operated under ASPI Manager (Not confirmed other than Qlogic FC card)

Installation of SDIAG for Microsoft Windows

SDIAG.EXE is operated under WindowsNT/9x/2000 environment.
This program uses ASPI32 for SCSI control and it is necessary to install **"wnaspi32.dll"** to execute this program.
(This **"wnaspi32.dll"** is installed by Windows9x as standard)

1. **SCSI/FC card confirmation**
   Before testing, to confirm Windows can recognize the "SCSI Card" or "FC Card" connected to the test drive(s).
   a) Open "**Control Panel**" then select "**System**" and then open "**Device Manager**".
   b) Open **SCSI Controllers** to confirm that the SCSI card has been recognized correctly

   If the SCSI card is not recognized by your PC system please consult your PC Manual or SCSI controller installation booklet.

2. **Installation of "wnaspi32.dll"**
   a) If "**wnaspi32.dll**" file is not installed, you can obtain this file ("**wnaspi32.dll**") from Adaptec's Home page and install it before using SDIAG. (URL:"http://www.adaptec.com")

   b) Alternatively by installing Adaptec EZ-SCSI (V4.5 or above) the "**wnaspi32.dll**" will be installed automatically. After installing EZ-SCSI, please execute "SCSI explorer" to confirm whether the application has been installed correctly or not.

   **** We highly recommend the installation of EZ-SCSI, instead of other SCSI tools for your convenience.****

3. **To install the "SDIAG Program"**
   First create a directory SDIAG and then copy "SDIAG.EXE" to the SDIAG directory.

4. **SCSI Select Utility** (Please set up your FC Card according to the Board instructions.)
   If "SCSI Select Utility" appears during start up for Windows.
   (Recommended for PCI-SCSI cards installed)
   Please execute "SCSI Select Utility". The following is an example for "AHA-2940UW" SCSI Card connection.

   Screen (1)
   --------AHA-2940 Ultra/Ultra W at BUS: Device 00:14h--------
   Configuration
   SCSI Bus Interface Definitions
   Host Adapter SCSI ID ---------- 7
   SCSI Parity Checking ----------Enabled
   Host Adapter SCSI Termination ---------- Automatic

   Additional Options
   Boot Device Options ----------Press<Enter>
   SCSI Device Configuration ---------- Press<Enter>
   Advanced Configuration Options ----------Press<Enter>

   Please configure the **"SCSI Bus Interface Definitions"** as shown above and you must set the "SCSI ID"(s) for the test drive(s) to "ID"(s) other than the "SCSI ID" for the Host Adapter. We recommend that within SCSI Device configuration the "**Initiate Sync Negotiation**" should be "**Disabled**", if you connect more than 4 drives for testing.

Next, please confirm the following configuration of the Advanced Configuration Options as shown below.

Screen (2)
--------Advanced Configuration Options--------
Plug and Play Scam Support ----------Disabled
Host Adapter BIOS (Configuration utility Reserves BIOS Space) ----- Disabled
Support Removable Disks Under BIOS as Fixed Disks ---------- Boot Only
Extended BIOS Translation for DOS Drives > 1 G Byte ---------- Enabled
Display<Ctrl-A> Message During BIOS Initialization ---------- Enabled
Multiple Lun Support ----------Disabled
BIOS Support for Bootable CD-ROM ---------- Disabled
BIOS Support for Int13 Extensions ----------Enabled
Support for Ultra SCSI Speed ----------Disabled
Please Save and Close the "SCSI Select Utility".

Total Connectable drives
SDIAG is able to test up to seven (7) drives connected. If the SCSI Controller is an ISA card, it will only be able to connect up to three (3) drives.

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Execution of SDIAG.EXE

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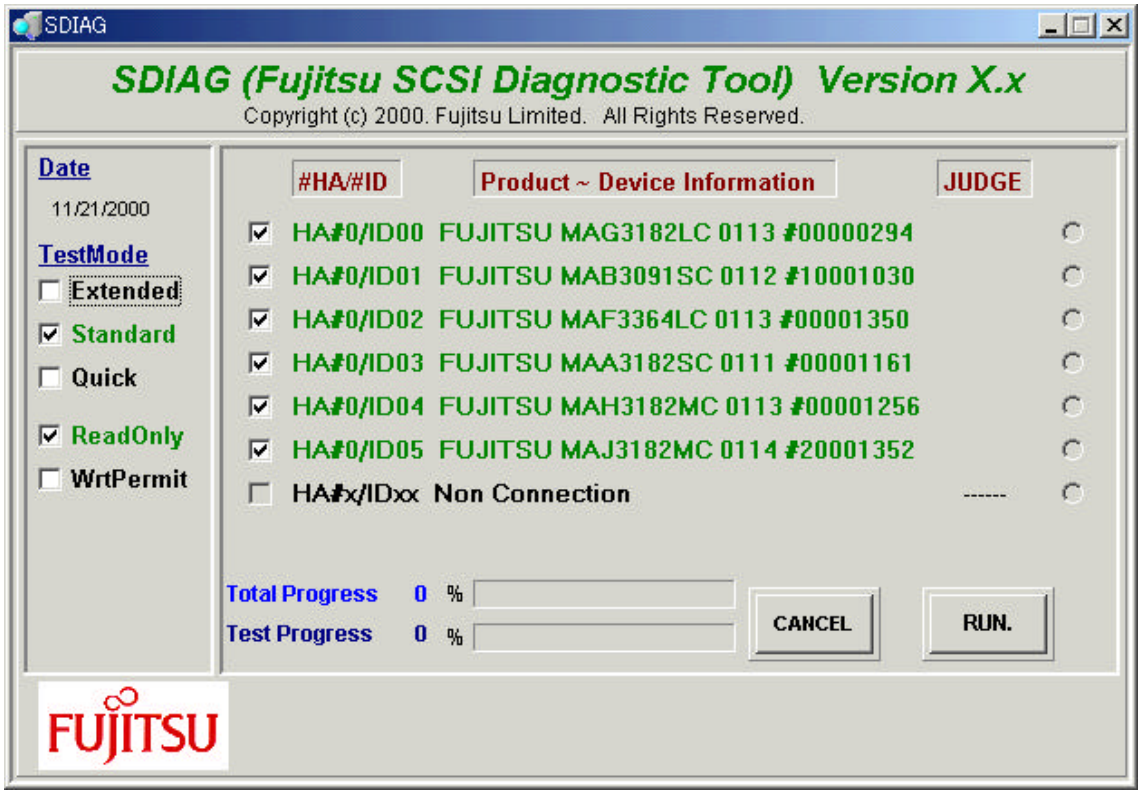
During the running of "SDIAG.EXE", please do not activate any application that will invoke ASPI Manager, such as Virus Checker, Fragmentation Tool, etc. It may cause your system to hang . For best results it is recommended to close down these types of resident programs before executing this program.

Please execute "SDIAG.EXE". The initial screen will display a "DISCLAIMER".

*** DISCLAIMER***
If you agree to the LIABILITY DISCLAIMER of the SDIAG software, please press "ACCEPT" button, otherwise please press "CANCEL" button. If you press "ACCEPT" button", then the following screen will appear.



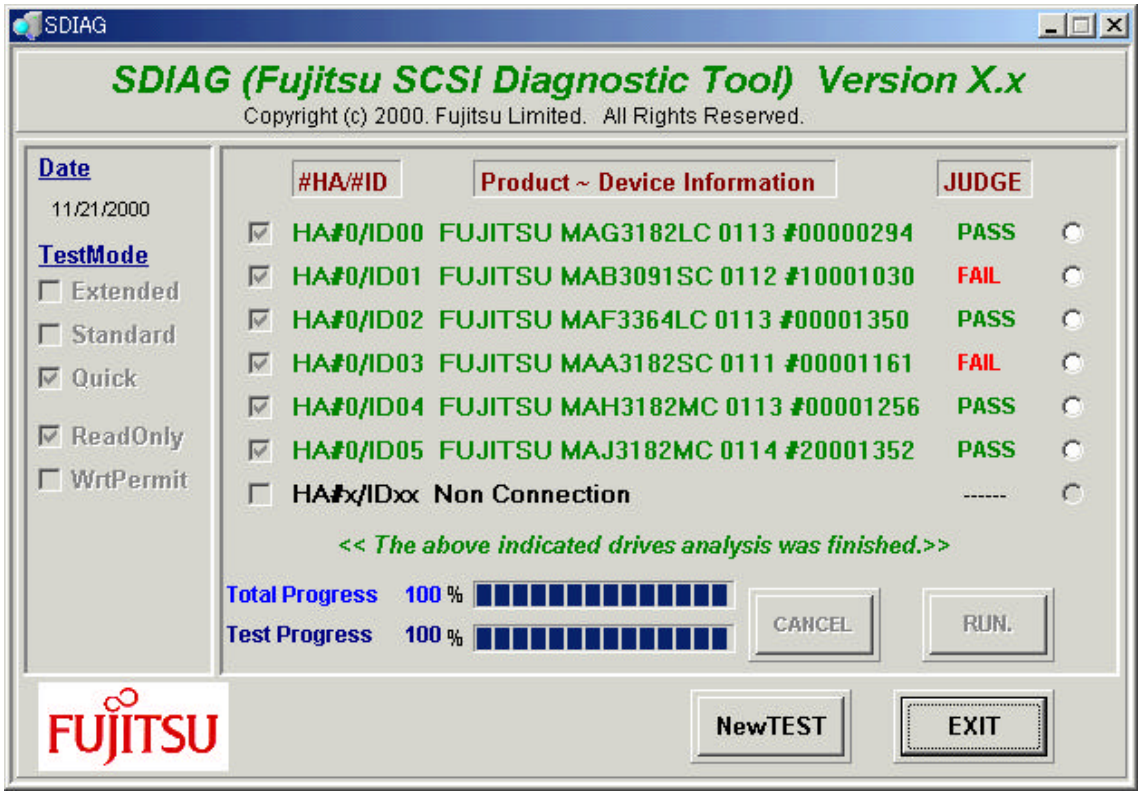
Test Modes and Drive Selection
Please choose (Tick) the check box of the drive(s) you would like to test (in case of default, please choose all) then select your Test Modes. Press the "RUN" button after Test Modes and drives for testing have been selected. To quit at any stage press the "CANCEL" button.

*** Test Mode***
a) **Quick**; To perform duplication test by reading the drive's SMART information. This will take about 1 to 3 minutes to complete. (Per Drive)
b**) Standard**; Perform Random Read (Write), Seek test, instead of duplication test in a) test. This takes about 20 to 25 minutes to complete. (Per Drive)
c) **Extended**; Perform Start / Stop testing, Seq. Verify test, instead of Random Read (Write), Seek test in b) test. This takes about 30 to 70 minutes to complete (Per Drive). The overall test time depends on the Capacity of the drive).

*** Write permission***
Please tick WrtPermit if you want to perform destructive testing on all drives selected for testing.

WARNING ALL DATA WILL BE LOST IF WRTPERMIT IS SELECTED

SDIAG will perform diagnostics on the drives selected for testing.
Whilst the diagnostics are running there are two progress bars indicating how far the test has progressed. The Test Progress bar indicates how far each individual test has progressed and the Total Progress bar indicates how far the whole test has progressed.
Whilst diagnostics are being performed it is possible to quit the diagnostic by pressing the "EXIT" key.



When the diagnostics test has been completed, SDIAG issues a Stop Unit Command to spin down the drive(s) and the screen above will be displayed.. Under the Header JUDGE a PASS or FAIL will appear. All Test result(s) are stored in the directory file where SDIAG resides. You can also check the result(s) by clicking the circle box near the Judge message as well.
For adding new drives for testing, unplug tested drives and replace with new drives (See Notes 2 & 3 **"Known Problems"**) and press "New TEST" button. If you would like to quit, press "EXIT" button.

Diagnostics Contents

1. Check the Inquiry Data
2. Check the number of Primary Defects
3. Check the number of Grown Defects
4. To confirm duplication of Logged (SMART) errors (If any)
5. 5 times CSS test ---------- Extended Test Mode Only
6. All surface Read Verify test ---- Extended Test Mode Only
7. Random Seek Read 40,000 cycles (In Extended Mode 20,000 cycles)
8. Random Seek Write 20,000 cycles (Only If WrtPermit is selected)
9. Random Seek 45,000 cycles
10. To perform Over Write on 100 MB area in Outer/Inner Zone (Only in Extended Test if WrtPermit is selected)
11. Pass/Fail determination.

Failure Criteria

1. If the error(s) in the SMART log duplicated,
2. If Read error rate is out of the specification (10 errors per 10E+11bits),
3. If Media errors occurred,
4. If Hardware errors occurred,
5. If Other errors occurred,

Diagnostics Results

The diagnostic results will be stored in the SDIAG directory as "serial number. LOG". If serial number is not valid, file name will be"HA#xIDxx.LOG". HA#x means SCSI Card #. IDxx means test drive ID #.

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Known Problems

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1. Test Device Recognition
During "Power up" sequence the Operating System will recognize the drives connected and will make a System Device Map. If the drives are not connected during the Power up sequence, then the SDIAG software will indicate "Non Device" due to a limitation of the ASPI within Windows 9x

2.Adding drives after power up

a)Exit SDIAG
b)Open Device Manager,
c)Open SCSI controllers
d)Select the SCSI controller
e)Click Refresh
f)Execute SDIAG

Now SDIAG will see the New drives added.

3.Changing Quantity or SCSI ID of Test drives
You must restart (Power OFF/ON) your PC system, if you change the quantity or SCSI ID of the test drive(s). Or alternatively use the procedure above **Adding drives after Power up**.
You do not need to "Restart" your system if you replace the same drive(s) quantity and same SCSI ID.
However, Fujitsu Limited has no responsibility for damage to the PC system due to this operation.

4. As mentioned in Section 1, Windows will not recognize the PCI SCSI card under the "Compaq PC system". In this case, you cannot use this configuration. If you would like to use Compaq PC system, please use "Adaptec Mini SCSI Plus" instead of others.

5. If a drive has been formatted more than 512 bytes/sector, this program cannot recognize the drive correctly due to the limitation of Operating system. If you would like to test the drive which has been formatted to other than 512 bytes/ sector, first test drive a drive which has been formatted to 512 bytes/sector, then connect the drive, which has been formatted to other than 512 bytes/sector.

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End of Readme