Drive Master 2006 Professional

Installation Guide

Revision 1.1

ULINK Technology Inc.

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1 Introduction

- Drive Master 2006 Professional supports Hard Disk, CD-ROM, CD-RW, DVD-ROM, and DVD±RW testing. It complies with SATA1.0, SATA II, ATA/ATAPI-7 and Mt. Fuji–5.5 specifications.

- Drive Master is a script driven software test tool. Its major function is to test SATA interface on device and host. It can be used for protocol debugging, specification verification, compatible testing and performance measurements.

2 System Requirements

- Windows 2000, XP, or 2003 Operating System
- 256MB RAM or higher
- Motherboard with IDE Controller based on the Intel ICH5/6/7 chipset
- One PCI to ATA or PCI to SATA (Depends on the system drive) add-on card (Promise TX2 plus or equivalent)
- Minimum 16 MB video card. 64MB is recommended.
- At least 100MB hard drive free space

3 Add-on Controller Installation

The system hard drive needs to be connected to the motherboard through an add-on IDE/SATA controller. The Device Under Test (DUT) needs to be connected to the motherboard's SATA port or a SATA Controller Card.

3.1 Add-on IDE/SATA Controller Installation

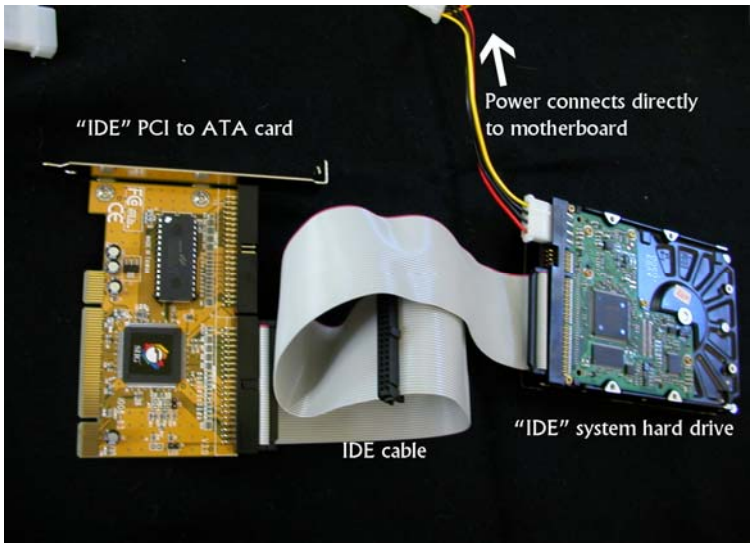
1) Remove the cover of your system.
2) Find an available 32-bit PCI Slot on the motherboard.
3) Insert the add-on IDE/SATA controller card into the available slot.
4) Fasten the controller card bracket to the system case.

3.2 IDE/SATA Controller Driver Installation

1) After installing the add-on controller card and rebooting your system, Window XP setup will show a "Found New Hardware" dialog box. Under Windows XP, "Mass Storage Controller" will be displayed.
2) Insert the add-on controller driver diskette into the A:\drive.
3) Select "Install the software automatically" and press the "Enter" key. If you are using a driver that has not been digitally signed by Microsoft, you will be asked if you want to continue the installation. Click on "Continue anyway".
4) After the "New Hardware Wizard" has finished installing the add-on controller driver, click on "Finish".

4 Assembly for add-on IDE/SATA card and system hard drive

1) Use an IDE cable to connect the system hard drive to the add-on IDE/SATA controller card installed on the motherboard.
2) Connect the system hard drive directly to the system power supply.



Assembly for card and IDE system hard drive

5 Host Test System Setup

5.1 ICH7/6 Host System Setup

5.1.1 System Setup

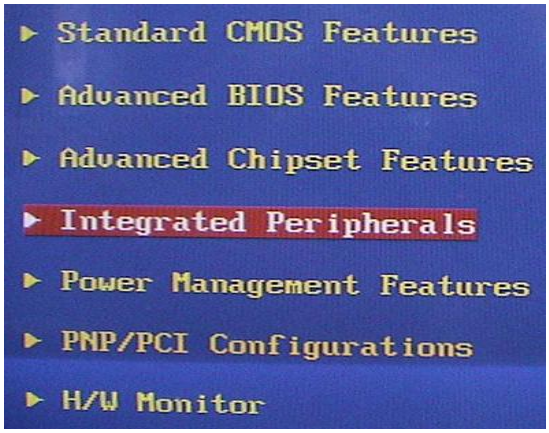
1) Connect system drive to motherboard PATA IDE port (if the system drive interface is IDE) or Serial ATA port (if the system drive interface is Serial ATA)
2) Follow the instruction Connect system drive to motherboard PATA IDE port (if the system drive interface is IDE) or Serial ATA port (if the system drive interface is Serial ATA).
3) Install all necessary drivers for the test system. The driver CD usually comes with the system motherboard.
4) Shut down the computer and insert an add-on IDE/SATA controller card into the last PCI slot. Boot up and install the add-on IDE/SATA controller driver.
5) Shut down computer, switch system drive to the add-on IDE/SATA controller.
6) Start computer, go to BIOS and change the first boot device to the add-on IDE/SATA controller, save the setting and reboot.

5.1.2 System BIOS SATA AHCI Mode Setup

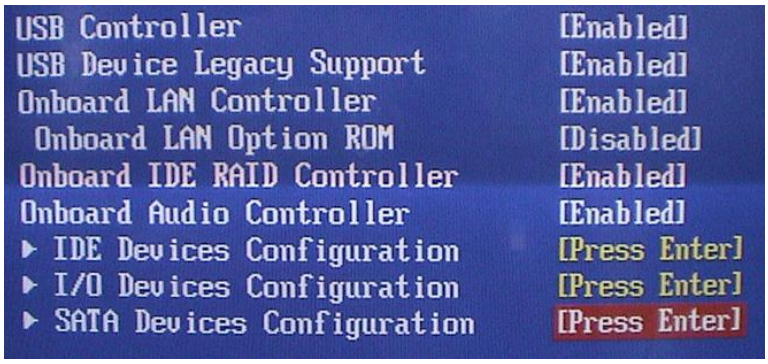
Many of the ICH7/6 motherboards use either American Bios system or Phoenix Award BIOS systems. The following sections describe the setup example for these BIOS'.

5.1.2.1 American Bios ICH7/6 AHCI Setup

1) Power on the computer.
2) Press Del (or F2) when the initial boot screen appears.
3) Once in the BIOS select Integrated Peripherals. *(The screen should look similar to the image below.)*



4) Select SATA Devices Configuration and press enter. (*The screen should look similar to the image below.)*

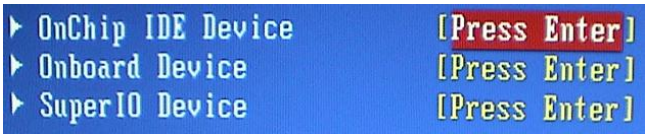


5) Scroll down to Configure SATA as and Select AHCI. (*The screen should look similar to the image below.)*

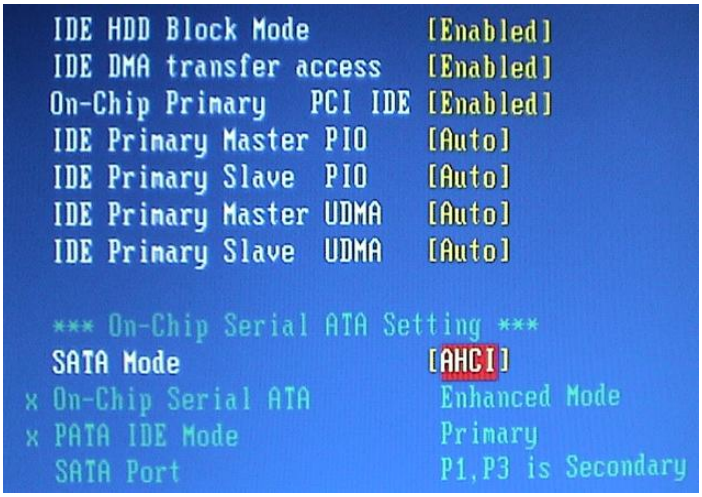
5.1.2.2 Phoenix Award BIOS ICH7/6 AHCI Setup

1) Power on the PC.
2) Press F2 when the initial boot screen appears.
3) Once in the bios select Integrated Peripherals. *(The screen should look similar to the image below.)*

4) Select On-Chip IDE Device and press enter. (*The screen should look similar to the image below.)*

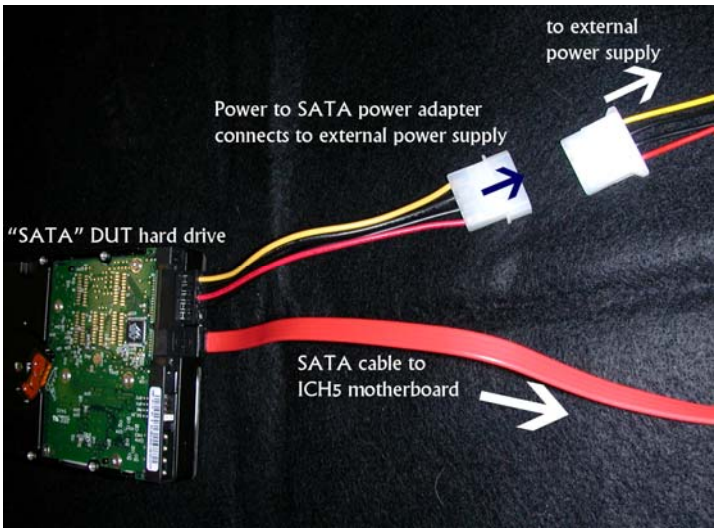


5) Scroll down to SATA Mode and Select AHCI. (*The screen should look similar to the image below.)*



5.1.3 External Assembly for ICH7/6 and SATA DUT hard drive

1) Use a SATA cable to connect the DUT directly to SATA port0 of the motherboard.



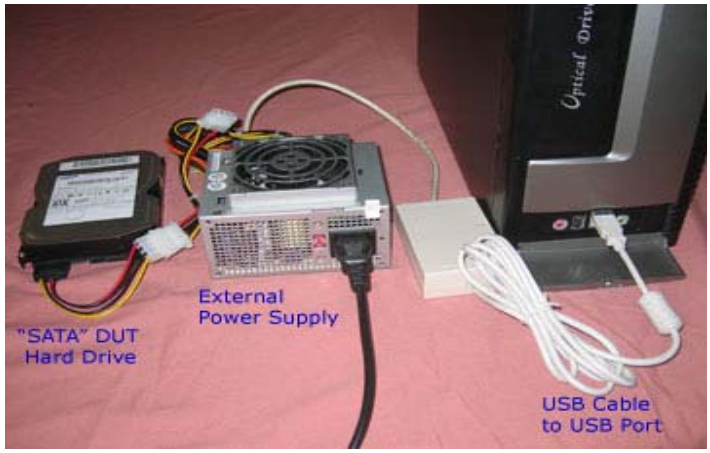
Assembly for ICH7/6 and "SATA" DUT hard drive

5.1.4 External Power Supply Installation

(Note: A USB or a parallel printer cable external power supply will be provided with the purchase of Drive Master 2006.)

5.1.4.1 USB External Power Supply

1) Connect the USB cable of the external power supply to the PC's USB port.
2) Connect power cord to the external power supply.
3) Connect SATA power adapter from "SATA" DUT Hard Drive to SATA power adapter from external power supply.



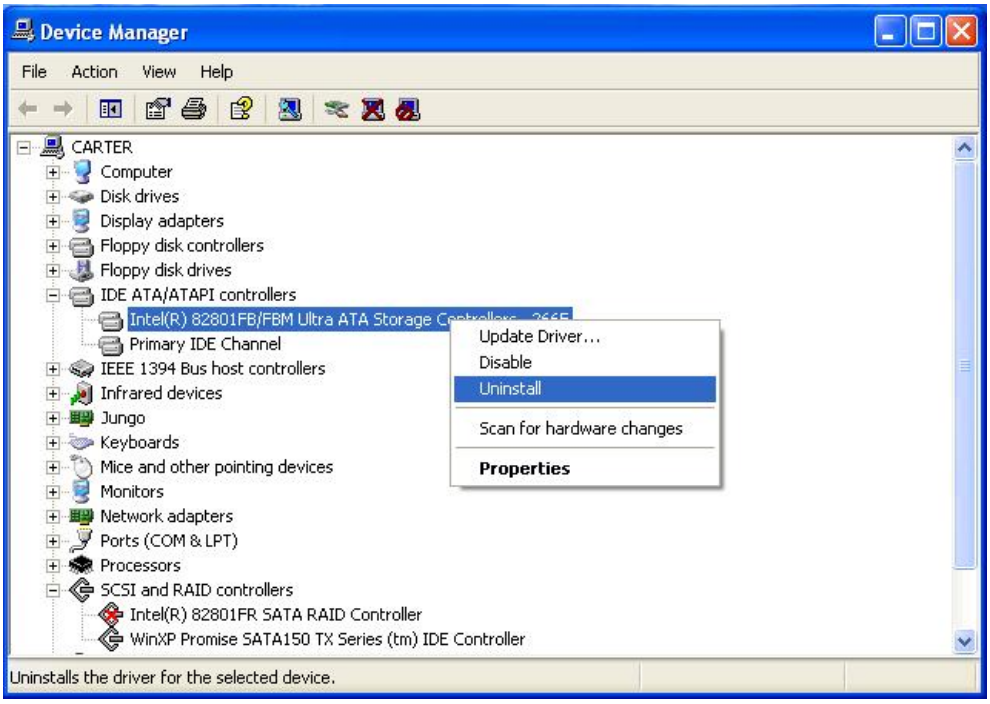
5.1.4.2 Parallel Printer Cable External Power Supply

1) Connect the parallel printer cable of the external power supply to the PC's parallel printer port.
2) Connect power cord to the external power supply.
3) Connect SATA power adapter from "SATA" DUT Hard Drive to SATA power adapter from external power supply.

5.1.5 IDE or SATA configuration mode Switching on ICH6 Only

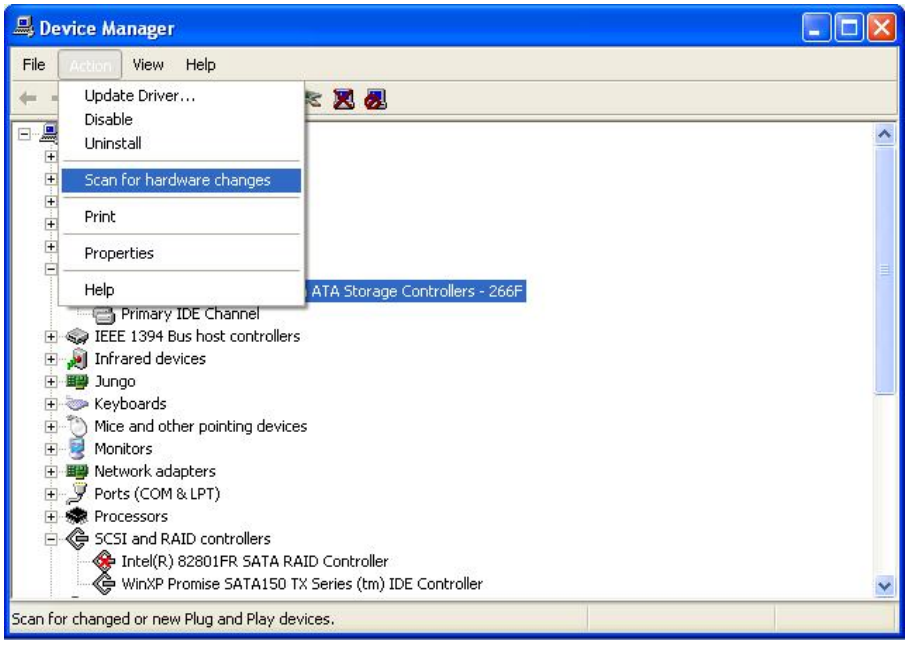
Whenever the IDE mode or SATA mode needs to be changed, please execute the following steps.

1) Reboot system, go to BIOS, and switch to the appropriate configuration mode you wish to use. (e.g. IDE, RAID, AHCI). Please double check if your first boot device is still pointed to the add-on PCI controller. Then save the setting.
2) Boot into Windows XP and right click on My Computer > Properties > click on the Hardware tab > Device Manager
3) Select the controller from "IDE ATA/ATAPI Controllers" or "SCSI and RAID Controllers" depending on the previous selection.
   If your previous selection is AHCI mode, uninstall "Intel(R) 82801FR SATA AHCI Controller" which is under "IDE ATA/ATAPI Controllers".
   If your previous selection is IDE mode, uninstall "Intel(R) 82801FB Ultra ATA Storage Controller 2652" which is under "IDE ATA/ATAPI Controllers".
   If your previous selection is RAID mode, uninstall "Intel(R) 82801FR SATA RAID Controller" which is under "SCSI and RAID Controllers"



4) Click OK at the "Confirm Device Removal" window if it prompts.

5) Once particular controller has have been uninstalled, click on the Action menu and click on Scan for Hardware Changes.



6) After the system finishes scan, please make sure the driver has been correctly installed.
   If your current selection is AHCI mode, you should see “Intel(R) 82801FR SATA AHCI Controller” which is under “IDE ATA/ATAPI Controllers”.
   If your current selection is IDE mode, you should see “Intel(R) 82801FB Ultra ATA Storage Controller 2652” which is under “IDE ATA/ATAPI Controllers”.
   If your current selection is RAID mode, you should see “Intel(R) 82801FR SATA RAID Controller” which is under “SCSI and RAID Controllers”

5.2 ICH5 Host System Setup

(Note: A second power supply will be provided with the purchase of Drive Master 2006. Drive Master can test Power Management features with the second power supply.)

5.2.1 ICH5 Chipset Driver Installation

1) Drivers may be downloaded from Intel’s website http://developer.intel.com/design/motherbd/rl/rl_drive.htm#XP
2) Download the “INF: Intel 82801ER ICH5-R or 82801EB ICH5” driver.
3) Follow the instructions to install the driver.

5.2.2 Assembly for ICH5 and “SATA” DUT hard drive:

1) Use a SATA cable to connect the DUT directly to SATA port0 of the motherboard.

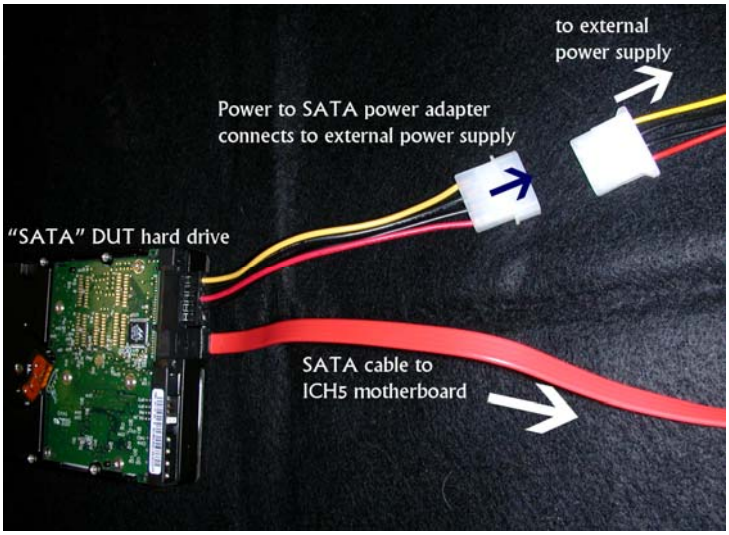


Figure 2 Assembly for ICH5 and "SATA" DUT hard drive

5.2.3 External Power Supply Installation

Please go to section 5.1.4

5.2.4 Bios Setup

1) Turn on the System.
2) Press F2 or the Del key to enter bios setup.
3) Set the system's drive configuration to enhanced mode.
   For example: Intel 865 series motherboards, go to Advanced>Drive Configuration->Set ATA/IDE Configuration to Enhanced.
4) Press F10 to save your settings.
5) Reboot the system.

5.3 Marvell 6081 Host System Setup

(Note: The Marvell 6081 controller card fits into any available 32-bit PCI slot on the system's motherboard.)

5.3.1 Controller Card Installation

1) Remove the cover of your system.
2) Find an available 32-bit PCI Slot on the motherboard.
3) Insert the Marvell 6081 controller card into the open slot on the motherboard.
4) Fasten the controller card bracket to the system case.

5.3.2 Driver Installation

After installing the Marvell 6081 card and rebooting your system, a "Found New Hardware" dialog box will appear under Windows XP.

1) Insert the Marvell 6081 driver diskette into the systems A:\drive.
2) Choose Install the software automatically and press the Enter key.
3) If using a driver that has not been digitally signed by Microsoft, you will be asked if you want to continue the installation. Click on Continue anyway.

4) When the New Hardware Wizard has finished installing the Marvell 6081 driver, click on Finish.

5.3.3 Confirming Driver Installation on Windows XP

1) From Windows XP, open the Control Panel from My Computer.
2) Click on the System icon.
3) Choose the Hardware tab, and then click the Device Manager tab.
4) Click the + in front of "SCSI and RAID controllers". "Marvell Serial ATA PCI-X Adapter" should appear.

5.3.4 External Power Supply Installation

Please go to section 5.1.4

5.3.5 Device under Test (DUT) Installation

1) Connect 1x4-pin conventional power connector to External Power Supply.
2) Connect SATA 15-pin power connector to DUT power port.
3) Use a SATA cable to connect the DUT to PORT 0 on the Marvell 6081 controller.

5.4 Silicon Image 3124 Host System Setup

(Note: The SI3124 controller card fits into any available 32-bit PCI slot on the system's motherboard.)

5.4.1 Controller Card Installation

1) Remove the cover of your system.
2) Find an available 32-bit PCI Slot on the motherboard.
3) Insert the SI 3124 controller card into the open slot on the motherboard.
4) Fasten the controller card bracket to the system case.

5.4.2 Driver Installation

After installing the SI 3124 card and rebooting your system, a "Found New Hardware" dialog box will appear under Windows XP.

1) Insert the SI 3124 driver diskette into the systems A:\drive.
2) Choose Install the software automatically and press the Enter key.
3) If using a driver that has not been digitally signed by Microsoft, you will be asked if you want to continue the installation. Click on Continue anyway.
4) After the "New Hardware Wizard" has finished installing the SI 3124 driver, click on Finish.

5.4.3 Confirming Driver Installation on Windows XP

1) From Windows XP, open the Control Panel from My Computer.
2) Click on the System icon.
3) Choose the Hardware tab, and then click on Device Manager.
4) Click the + in front of "SCSI and RAID controllers". "Silicon Image SiI 3124 SATALink Controller" should appear.

5.4.4 External Power Supply Installation

Please go to section 5.1.4

5.4.5 Device Under Test (DUT) Installation

1) Connect 1x4-pin conventional power connector to External Power Supply.
2) Connect SATA 15-pin power connector to DUT power port.
3) Use a SATA cable to connect the DUT to PORT 0 on the SI 3124 controller.

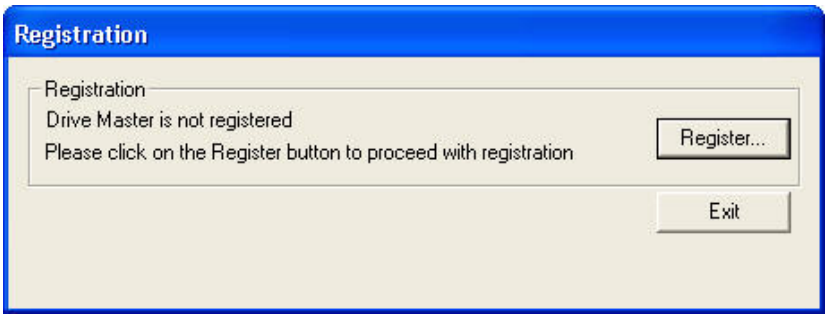
6 Install Drive Master 2006 Professional

1) When using the retail version of Drive Master 2006, insert the USB key into a USB port.
2) Insert the Drive Master 2006 Professional CD into your CD-ROM drive. If installation does not start automatically, run AUTORUN.EXE from the root directory of the CD.
3) Follow the screen instruction to install Drive Master 2006 Professional.

7 Run Drive Master 2006 Professional

7.1 Drive Master 2006 Professional

1) Check to make sure your USB key is in the USB port all the time while running Drive Master 2006. If you unplug it, Drive Master will automatically close.
2) When launching Drive Master 2006 Professional without USB key, you will see the following “Registration” dialog box:



3) Click on Exit. Insert USB key before restarting Drive Master 2006 Professional.

7.2 Running Drive Master 2006

1) When Drive Master 2006 is invoked, the “Drive Master HBA Configuration” window will appear. A list of available HBAs will show up in the window. Select the “Intel …. Device ID 2652” and click OK
2) If it is the first time invoking Drive Master 2006, a “Setup ICH Port” dialog window will appear. Select the appropriate SATA port in the Enhanced Mode column and click OK button.

3) If you see something like the following, the DUT is ready.
   RTF: XX XX XX XX XX XX 50 50 XX XX XX XX XX
4) If you see something like the following, it means Drive Master 2006 fails to find the DUT at the SATA port you have selected. You can always go to Tools -> Setup ICH Ports to bring up the Setup ICH Port dialog window and select the correct testing SATA port.
   RTF: XX XX XX XX XX XX 7f 7f XX XX XX XX XX
5) Check the RTF button on the DM Toolbar, RTF data will display in the Log window. If the seventh and eighth data on screen both indicate "50" (refer to figure 4), then the communication between host and DUT is established correctly.
6) On the "DM Command Bar", you will find "PwOn" and "PwOff" buttons. These two buttons will not work until you use the second power supply we supplied. All related script commands will not work without the second power supply.

8 Sample Test Scripts

You can find all the sample scripts under %Installation Drive%/Program Files/ULINK Technology Inc/DriveMaster 2006 Pro/Scripts directory.

9 Help

With Drive Master 2006 open, press F1 key or go to Help menu to select Contents command to bring up the Help file.

10 Customer Support

If you have any questions about the installation of Drive Master 2006 Pro, please contact ULINK either by email or phone:

ULINK TECHNOLOGY, INC.
Email: support@ulinktech.com
Phone: (408) 446-8455