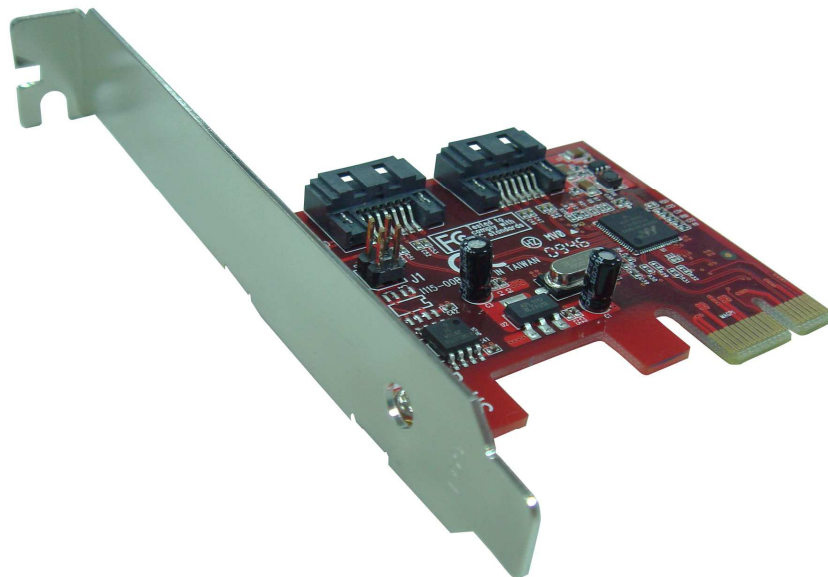# LINDY®

COMPUTER CONNECTION TECHNOLOGY

Hybrid Drives SATA III - 6Gbps Low Profile PCIe 2.0 Host Adapter

User Manual *English*

LINDY No. 51403

www.lindy.com

1. Introduction

2Ports 6Gbps SATA III PCI Express 2.0 host board to support, Hardware RAID0, RAID1, NCQ & Port Multiplier!

1.1. Features

- o 6Gbps SATA III 2 Ports PCIe Gen2 1 Lane Host Adapter
- o Supports PCIe 1.0 and PCIe 2.0 motherboard
- o Compliant with 5Gbps PCI Express 2.0
- o Fully compliant with Serial ATA specifications 3.0
- o Supports SATA III transfer rate of 6.0Gbps, 3.0Gbps, 1.5Gbps
- o Support Hardware RAID0, RAID1, HyperDuo (optional)
- o Supports ATA and ATAPI commands
- o Supports Native Command Queuing (NCQ)
- o Supports one Port Multiplier FIS-based or Command-based switching and max two RAID groups
- o Low Profile PCIe Form Factor
- o Includes Low Profile and regular size two Brackets
- o SATA Hot-plug capability
- o Two Pin headers on board for LED connection
- o Completely with drivers for 64bit / 32bit Windows 7, Vista, XP, 2003 and 2008
- o Fully RoHS compliant

1.2. Package Contents

- Low Profile PCIe Host Adapter
- Users Manual
- Driver CD

2. BIOS Utility

1. Power up the system.
2. During the Power-on-Self Test (POST), press "**CTRL-M**" to launch BIOS Utility.
3. Check the screen with "**Topology**" pane at the left hand side and "**Information**" pane at the right hand side.

2.1. Creating RAID & HyperDuo* Virtual Disk

* Note: HyperDuo is an advanced technology for specially equipped PCBA, your PCBA may not have this kind of function built inside.

1. In the "**Topology**" pane (left hand side of screen) , scroll to "**HBA0: Marvell 0**" and press "**Enter**".

2. A menu pops up, select "**Configuration Wizard**" and press "**Enter**" to begin.
3. Use the arrow keys to scroll through the list of "**Free Physcal Disks**" / or select ("**SSD**" and "**HDD**"). When a disk is selected by "**Space**" key, an asterisk(*) appears beside it. Then press "**Enter**".
4. The "**Create Virtual Disk**" / or "**HyperDuo**" configuration title appear in the "**Information**" pane (right hand side of screen).
5. Highlight "**RAID Level**" / or "**HyperDuo**" and press "**Enter**".
6. A pop-up menu appears. Select your preferred **RAID / HyperDuo** modes from the list (**Safe, Capacity, RAID 0, RAID 1**) and press "**Enter**".
7. Highlight "**Stripe Size**" / or "**Keep original data**" and press "**Enter**".
8. A menu pops-up, select your prefered stripe size for the selected RAID level and press "**Enter**" / or ("**Yes**" or "**No**" to keep/destroy the original data)
9. Highlight "**Name**" then type a new name and press "**Enter**".
10. Highlight "**Next**", press "**Enter**" to create the Virtual Disk. Press "**Y**" to confirm.

2.2. Erasing RAID Configuration Data

1. In the "**Topology**" pane, select "**Physical Disk**" and press "**Enter**".
2. A menu pops-up, select "**Erase RAID Config Data**".
3. Select "**Yes**" to confirm the operation.

2.3. Rebuilding in RAID1 & HyperDuo* Safe Modes

*Note: HyperDuo is an advanced technology for specially equipped PCB, your PCB may not have this kind of function built inside.
1. When a virtual disk is degraded, the "**Status**" of a virtual disk is changed from "**Functional**" to "**Degrade**". HyperDuo virtual disks created in SafeMode can be partially rebuilt if the SSD fails.
2. Replace the faulty physical disk with an "**Identical**" physical disk.
3. In the "**Topology**" pane, scroll to "**Virtual Disks**" and press "**Enter**".
4. A menu pops-up, scroll to "**Rebuild**" and press "**Enter**" to configure the rebuild process.
5. Scroll through the list of free disks, and select Replacement Disk by pressing "**Space**" key. Then press "**Enter**" to continue.
6. Press "**Y**" when prompted to confirm the rebuild process then check status in the properties of the virtual disk.

2.4. Deleting Virtual Disk

1. In the "**Topology**" pane, select "**Virtual Disk**" and press "**Enter**".
2. A menu pops-up, select "**Delete**" to delete the virtual disk.
3. Press "**Y**" when prompted "**Do you want to delete this virtual disk?**" to confirm your request.
4. Press "**Y**" when prompted "**Do you want to delete MBR from this virtual disk?**" to confirm your request.

3. Driver Installation

3.1. Windows 7, Vista, XP Fresh OS installation

1. If Win XP, copy all files under Driver CD folder "**SATA6G_M9128\Fresh\ Floppy32** (for 32bit OS) or **\Floppy64** (for 64bit OS)" to a blank diskette.
2. Power off the system. Insert SATA Card into an available PCIe slot. Connect serial

ATA cable between the SATA port and SATA device (Fresh). Put your Windows OS Setup CD into the CD-ROM/DVD drive. Power up the system.

3. If Win XP, insert Step **1** driver diskette into floppy drive. Press "**F6**" for third party SCSI or driver installation at the beginning of XP text mode installation. Press "**S**" when screen "**Select**" & "**Enter**" "**Marvell shared library for 32/64**" bit **(install first)**". Then press "**S**" when screen "**Select**" & "**Enter**" "**Marvell 91XX SATA Controller 32/64 bit Driver**". Press "**Enter**" again to continue the XP text mode setup and select disk partition and other setup operations.

4. If Win 7 and Vista, follow the setup procedure and load driver file "**mv91xx.inf**" by browsing files from driver CD folder "**SATA6G_M9128\Fresh\amd64** (for 64bit OS) or **i386** (for 32bit OS)". Continue the Windows setup and select disk partition and other setup operations.

5. The Fresh Installation has completed, go to Section **3.3**. to verify if the installation correct.

3.2. Adding HBA to existing Windows 7 / Vista / XP

1. Power off the system. Insert SATA Card into an available PCIe slot. Power up the system.
2. During system boot-up, Windows will display the messages such as "**Found New Hardware Wizard**" (XP), "**Windows needs to install.. **". (Vista), or "**Device driver software was not successfully installed**" (Windows 7).
3. "**Cancel**" and go to auto driver installation by browsing the driver CD.
4. Run installer "**drvSetup.exe**" on driver CD folder "**E:\SATA6G_M9128**" to have the latest driver for 32bit /64bit Windows until "**Finish**".
5. If Windows display message again for RAID driver installation, "**Cancel**" and Run installer "**consoleSetup.exe**" on driver CD folder "**E:\SATA6G_M9128 \CONFIG**" until "**Finish**".
6. The Adding Installation has completed, go to Section **3.3**. to verify if the installation correct.

3.3. Verifying Windows 7 / Vista / XP Installation

1. "Right" click "**My Computer**", select "**Manage**", then select "**Device Manager**".
2. Double click "**SCSI and RAID Controllers**" or "**Storage Controllers**" or "**Other devices**" to check if any "**!**" or "**?**" or other colored marks in front of "**Marvell 91XX SATA 6G Controller**" & "**Marvell 91XX Config ATA Device**".
3. If yes, please repeat Steps **4 ~ 5** of Section **3.2**. If not, the installation is completed.

4. GUI* installation

*Note: HyperDuo is an advanced technology for specially equipped PCB, your PCB may not have this kind of function built inside.

1. **Find MSU_User_Guide.pdf on driver CD folder "\SATA6G_M9128\GUI"** to get information about **RAID, HyperDuo, and GUI function.**
2. Go to the driver CD folder "**\SATA6G_M9128\GUI**", run "**MSUSetup**" for RAID GUI utility installation to get the **MSU shortcut icon** on the screen.
3. Double-click the **MSU shortcut icon** to open the MSU and take you to a login page.
4. Use your Windows username and password to log into the MSU. If you have a username but no password, leave the password field blank and click "**Login**".

5. "**MSU User Interface**" shows up. Find three "**Marvell Storage Management, Property, Event Logs**" panes inside there.
6. Marvell Storage Management pane uses a tree view to list and show the following five devices and services: "**Adapter, Physical Disk, Virtual Disk, HyperDuo Service, Email Notify Setting**".
7. Property pane lists the properties of the device selected in the System pane and contains the following tabs: "**Property, Operation, Programs, Schedule**".
8. Event Logs pane lists adapter events which are categorized into **informational**, **warning**, and **error** events.
9. For **RAID Mode**, please refer to **Chapter 3** of MSU_User_Guide.pdf for the detail steps about:
   (1) **Creating** (Optimizing & Customerizing) **Virtua**l Disk.
   (2) **Managing** (Viewing Properties and Renaming) **Virtual Disk**.
   (3) **Managing** (Viewing Properties and Erasing RAID Configuration Data on Foreign Physical Disk) **Physical Disks**.
   (4) **Monitoring** (Receiving Email Event Notification, Viewing Events using Windows Event Viewer, Enabling Alarm for Critical Events) **Virtual Disk**.
   (5) **Deleting Virtual Disk** by Operation Tab.
   (6) **Rebuilding Degraded Virtual Disk**: Please follow Section **2.4.**
10. For **HyperDuo Mode**, please refer to **Chapter 4** of MSU_User_Guide.pdf for the detail steps about:
(1) **Creating HyperDuo Virtual Disk** with best Read/Write performance or best fault tolerance (reliability).
   (2) **Managing HyperDuo Virtual Disk** by Customize Wizard and Optimization Methods.
   (3) **Monitoring** (Receiving Email Event Notification, Viewing Events using Windows Event Viewer, Enabling Alarm for Critical Events) **HyperDuo Virtual Disk**.
   (4) **Deleting Virtual Disk** by Operation Tab.
   (5) **Rebuilding Degraded Virtual Disk**: Please follow Section **2.4.**

WEEE (Waste of Electrical and Electronic Equipment), Recycling of Electronic Products

United Kingdom
In 2006 the European Union introduced regulations (WEEE) for the collection and recycling of all waste electrical and electronic equipment. It is no longer allowable to simply throw away electrical and electronic equipment. Instead, these products must enter the recycling process.
Each individual EU member state has implemented the WEEE regulations into national law in slightly different ways. Please follow your national law when you want to dispose of any electrical or electronic products.
More details can be obtained from your national WEEE recycling agency.

Germany / Deutschland
Die Europäische Union hat mit der WEEE Direktive umfassende Regelungen für die Verschrottung und das Recycling von Elektro- und Elektronikprodukten geschaffen. Diese wurden von der Bundesregierung im Elektro- und Elektronikgerätegesetz – ElektroG in deutsches Recht umgesetzt.
Dieses Gesetz verbietet vom 24.März 2006 an das Entsorgen von entsprechenden, auch alten, Elektro- und Elektronikgeräten über die Hausmülltonne! Diese Geräte müssen den lokalen Sammelsystemen bzw. örtlichen Sammelstellen zugeführt werden! Dort werden sie kostenlos entgegen genommen. Die Kosten für den weiteren Recyclingprozess übernimmt die Gesamtheit der Gerätehersteller.

France
En 2006, l'union Européenne a introduit la nouvelle réglementation (WEEE) pour le recyclage de tout équipement électrique et électronique.
Chaque Etat membre de l' Union Européenne a mis en application la nouvelle réglementation WEEE de manières légèrement différentes. Veuillez suivre le décret d'application correspondant à l'élimination des déchets électriques ou électroniques de votre pays.

Italy
Nel 2006 l'unione europea ha introdotto regolamentazioni (WEEE) per la raccolta e il riciclo di apparecchi elettrici ed elettronici. Non è più consentito semplicemente gettare queste apparecchiature, devono essere riciclate.
Ogni stato membro dell' EU ha tramutato le direttive WEEE in leggi statali in varie misure. Fare riferimento alle leggi del proprio Stato quando si dispone di un apparecchio elettrico o elettronico.
Per ulteriori dettagli fare riferimento alla direttiva WEEE sul riciclaggio del proprio Stato.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operations.