

# ARS-2037 1-to-7 PCI-Based Copy Controller

**User's Manual**

— Ver: 1.2 —

**Attention:**

It takes over 5 seconds to power on after shutdown otherwise the system may operate abnormally.



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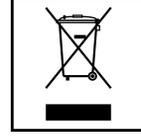
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ACARD's ARS-2037 Copy Controller is used for copying and editing personal audio and video data. Violating Copy Right is a criminal act. ACARD's Copy Controller only supports legal backup operation.

ACARD Technology Corp. is not responsible for the user's illegal actions.

**WEEE Statement****English**

In order to cope with the increasing waste electrical and electronic equipment, reduce the use of landfill and incinerator, and prevent the harmful matter of waste equipment from entering the environment, the European Union (EU) has set the Directive on Waste Electrical and Electronic Equipment (WEEE) asking manufacturers to collect, recycle and treat waste electrical and electronic equipment properly. Member nations already established their free of charge recycle systems of WEEE before August 13, 2005. Accordingly, ACARD has to be responsible for recycling all products exported to Germany. You can return your ACARD product that needs recycling to a local collector.

**WEEE Erklärung****German**

Mit dem Ziel die steigende Menge elektrischer und elektronischer Altgeräte zu bewältigen ohne hierzu unnötig Mülldeponien und Verbrennungsanlagen zu belasten und um die Verschmutzung der Umwelt durch freiwerdende Stoffe aus den Altgeräten zu vermeiden, hat die Europäische Union (EU) die Richtlinie über Elektro- und Elektronik-Altgeräte erlassen. Die Richtlinie verpflichtet Hersteller, elektrische und elektronische Altgeräte umweltgerecht einzusammeln, zu recyceln und zu entsorgen. Die Mitgliedsstaaten der EU haben bereits ihre kostenfreien Recyclesysteme konform der WEEE vor dem 13. August 2005 eingerichtet. Entsprechend der Richtlinie ist ACARD verantwortlich für die umweltgerechte Entsorgung aller nach Deutschland exportierten ACARD Produkte. Sie können Ihr zu entsorgendes ACARD Produkt zu Ihrer örtlichen Sammelstelle bringen.

**AEEA verklaring****Dutch**

Met het doel de stijgende hoeveelheid afgedankte elektrische en elektronische apparatuur te beheersen zonder hiervoor onnodig stortplaatsen en verbrandingsovens te belasten en om de vervuiling van het milieu door vrijkomende stoffen uit de afgedankte apparatuur te voorkomen, heeft de Europese Unie (EU) de richtlijn betreffende afgedankte elektrische en elektronische apparatuur besloten. Deze richtlijn verplicht fabrikanten afgedankte elektrische en elektronische apparatuur in te zamelen, te recycelen en te verwijderen. De lidstaten van de EU hebben reeds de kosteloze recyclesystemen volgens de AEEA vóór de 13 augustus 2005 ingericht. Conform de richtlijn is ACARD verantwoordelijk voor de verwijdering van alle naar Nederland geëxporteerde ACARD producten. U kunt uw afgedankt ACARD product naar uw locale inzamelplaats brengen.

**Elektrik ve Elektronik Madde Atıkları Demeci****Turkish**

Elektrik ve elektronik madde atıklarının yükselmesiyle basedebilmek ,arazi doldurma ve cop yakma fırını kullanımını azaltmak,atık madde zararlarının cevreye yayılmasını onlemek icin Avrupa Birliği (AB),ureticilerden elektrik ve elektronik madde atıklarını gerektiği gibi toplamalarını,geri donusturmelerini ve kimyasal isleme tabi tutmalarını talep etmek icin Elektrik ve Elektronik Madde Atıkları uzerine bir direktif hazırladı.Topluluk uyeleri,13 Agustos 2005' ten once elektrik ve elektronik madde atıklarının ucretsiz geri donusum sistemlerini coktan olusturmuslardı.Bundan dolayı, ACARD, Almanya'ya ihrac ettigi butun urunlerin geri donusumunden sorumludur. ACARD urunleri geri donusum gerektirirse yerel toplayıcılara geri verebilirsiniz.

## **WEEE бюлетень**

**Russian**

Чтобы справиться с увеличивающимся ненужным электрическим и электронным оборудованием, уменьшите использование закапывания мусора и использования установки для сжигания отходов, препятствуйте вредному выбросам загрязнять окружающую среду, Европейский союз (ЕС) установил Директиву по Ненужному Электрическому и Электронному Оборудованию (WEEE) для того, чтобы изготовителей собрали, перерабатывали и вообще проявили внимание к ненужному электрическому и электронному оборудованию должным образом. Члены нации установили бесплатную систему переработки WEEE до 13 августа 2005. Соответственно, ACARD обязан быть ответственным за то, что переработал все продукты, экспортируемые в Германию. Вы можете вернуть ваш продукт ACARD, который нуждается в рециркуляции местному сборщику.

## **WEEE Statement**

**French**

Afin de gérer la quantité croissante de déchets électriques et électroniques, de réduire l'utilisation des décharges et des incinérateurs et d'éviter que des déchets nocifs ne polluent l'environnement, l'Union Européenne a publié la directive WEEE sur les déchets électriques et électroniques. Celle-ci spécifie que les fabricants doivent collecter, recycler et traiter l'équipement électronique et électrique usagé. Depuis le 13 août 2005, les pays membres ont mis en place un système de recyclage gratuit selon le WEEE.

De ce fait, Acard est responsable du recyclage de tous les produits exportés vers l'Allemagne. Vous pouvez mettre au rebut votre équipement ACARD usagé dans votre centre local de recyclage.

Pour plus d'informations sur les lieux de mise au rebut des équipements usagés destinés au recyclage, veuillez contacter votre mairie, votre service de traitement des déchets ménagers ou le magasin où vous avez acheté le produit.

## **RAEE**

**Spanish**

Con la finalidad de reducir el incremento de residuos eléctricos y de material electrónico, reduciendo el uso de los vertederos e incineradoras y prevenir el preocupante aumento del contacto de estos residuos con el medio ambiente. Por este motivo la Unión Europea ha fijado la Directiva de Residuos de Aparatos Eléctricos y Electrónicos (RAEE) solicitando a los fabricantes la recolección, reciclaje y tratamiento de estos residuos correctamente. Los países miembros ya han establecido su sistema de reciclaje gratuito de RAEE antes del 13 de Agosto del 2005. Por este motivo ACARD es el responsable del reciclaje de todos los productos exportados a Alemania. Usted puede devolver su producto ACARD a un punto de recogida local cuando desee reciclarlo.

## **Dichiarazione WEEE**

**Italian**

Per far fronte all'aumento dei residui delle apparecchiature elettriche ed elettroniche, ridurre l'uso di materiale di riporto e degli inceneritori, ed impedire che il materiale nocivo delle apparecchiature residue entri a contatto con l'ambiente, l'Unione Europea (UE) ha stabilito le Direttive sui Residui delle apparecchiature Elettriche ed Elettroniche (WEEE) chiedendo ai fornitori di raccogliere correttamente, riciclare e trattare le apparecchiature elettriche ed elettroniche residue. Le nazioni facenti parte dell'Unione Europea hanno già stabilito il loro sistema gratuito di riciclaggio di questo materiale (WEEE) prima del 13 agosto 2005. Di conseguenza, ACARD è responsabile del riciclaggio di tutti i prodotti esportati in Germania. Potete restituire il vostro prodotto acquistato da ACARD che deve essere riciclato da un'azienda specifica locale.

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## Chapter 1 Introduction

### 1.1 Overview

ARS-2037 is a 1-to-7, PCI-based copy controller that supports high-speed CD writers. It doesn't need connecting to a computer. Simply through its LCD and 4 buttons on the panel, you can copy data, audio or video CD easily and quickly. It is fit for companies to do a small amount of production.

Usually if you want to back up a lot of CDs, you have to boot the computer, and do the job via a burning program. It takes time to learn how to use the software and more time to execute the copying. In view of this, ACARD has launched ARS-2037, a copy controller that is easy to operate and can copy 7 discs at the same time.

ARS-2037 is a valuable product of technology. You can use it alone. Besides, if you have purchased ACARD's AEC-4420P/PB USB Link (see Appendix A), you can connect it to the computer, to ARS-2037, and to one of the CD writers that are connected with ARS-2037. Thus, ARS-2037 becomes an external writer for the computer. When the hardware is used together with ACARD's burning software, Ha! DVD Burner, the combination will be the best solution.

### 1.2 Features

- Standalone IDE to IDE CD copy controller
- Totally independent without installing hardware or software
- Supports a 3.5" hard drive
- Supports 52X 1-to-7 CD copying
- User-friendly interface with LCD showing message
- Provides optional functions to extend application

### 1.3 Specifications

- ACARD ATP-865 IDE processor
- IDT central processing unit
- 32 MB DDR memory
- 8 independent IDE channels
- 2 × 16 LCD
- 4 membraned buttons on the panel
- 512 KB flash memory for boot loader
- 2 MB flash memory for copy code
- Firmware update by CD-ROM
- Power            Voltage: 5VB±5%, Current: 1.5A Max
- Environment    Operation: 0°C to 60°C  
                         Nonoperation: -20°C to 85°C
- Humidity        15% to 90%
- Dimension      D: 225 mm   W: 150 mm   H: 42 mm

### 1.4 System Requirement

- Upright external case 9/10 × 5.25"
- Minimum power supply of 250W
- ATA133 cable (35cm)
- CD-ROM × 1
- CD writer × 7
- Hard drive (optional)
- AEC-4420P (optional)

## Chapter 2 Hardware Installation

Before installing ARS-2037, note that there are three kinds of packages: the copy controller only, a whole copying system and a system without CD writers.

### 2.1 Copy Controller Only

- Unpack the package, and examine if there is any defect or discrepancy.
- Prepare a CD-ROM.
- Prepare 7 CD writers.
- Prepare a 3.5" hard drive (optional).
- All IDE devices are in Master mode (but when a hard drive is connected, CD-ROM is set as Slave while hard drive as Master).

### 2.2 A Whole System

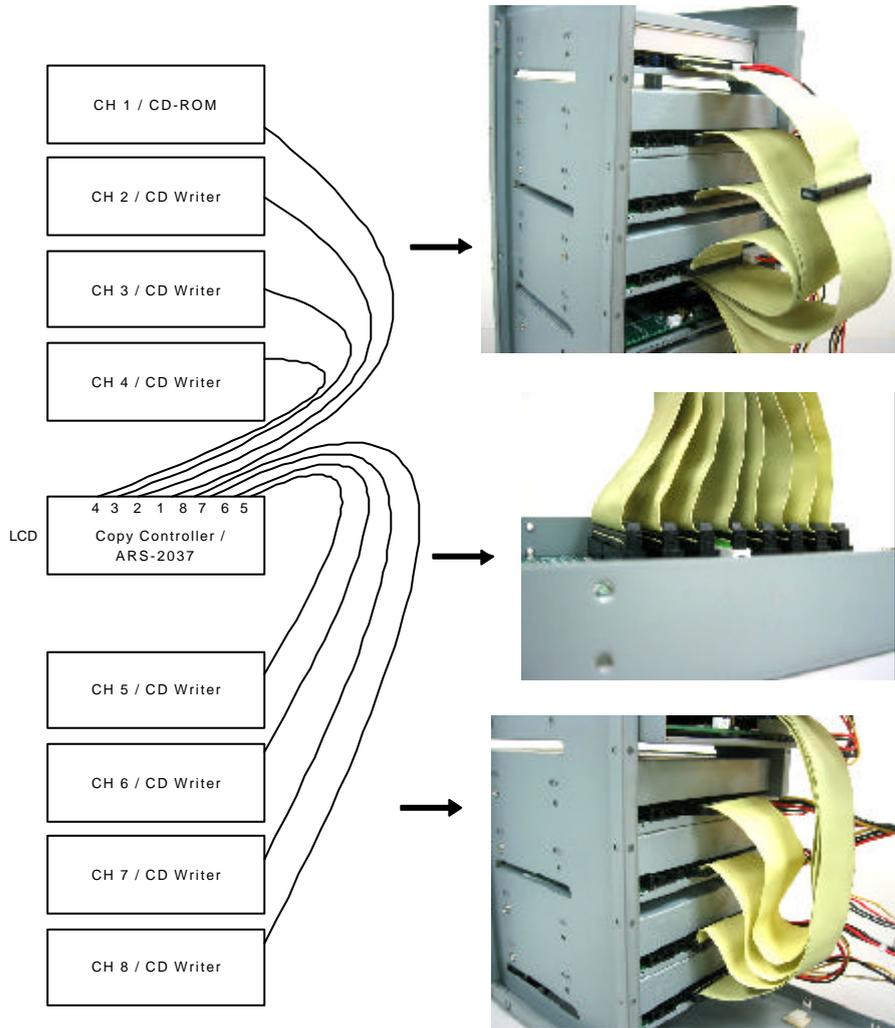
- Unpack the package, and examine if there is any defect or discrepancy.
- Prepare a 3.5" hard drive (optional).
- Be sure that the wattage of power supply is sufficient.

### 2.3 A System without CD Writers

- Unpack the package, and examine if there is any defect or discrepancy.
- Prepare a CD-ROM (if there is one, you don't need to prepare).
- Prepare 7 CD writers.
- Prepare a 3.5" hard drive (optional).
- Be sure that the wattage of power supply is sufficient.

## 2.4 How to Install

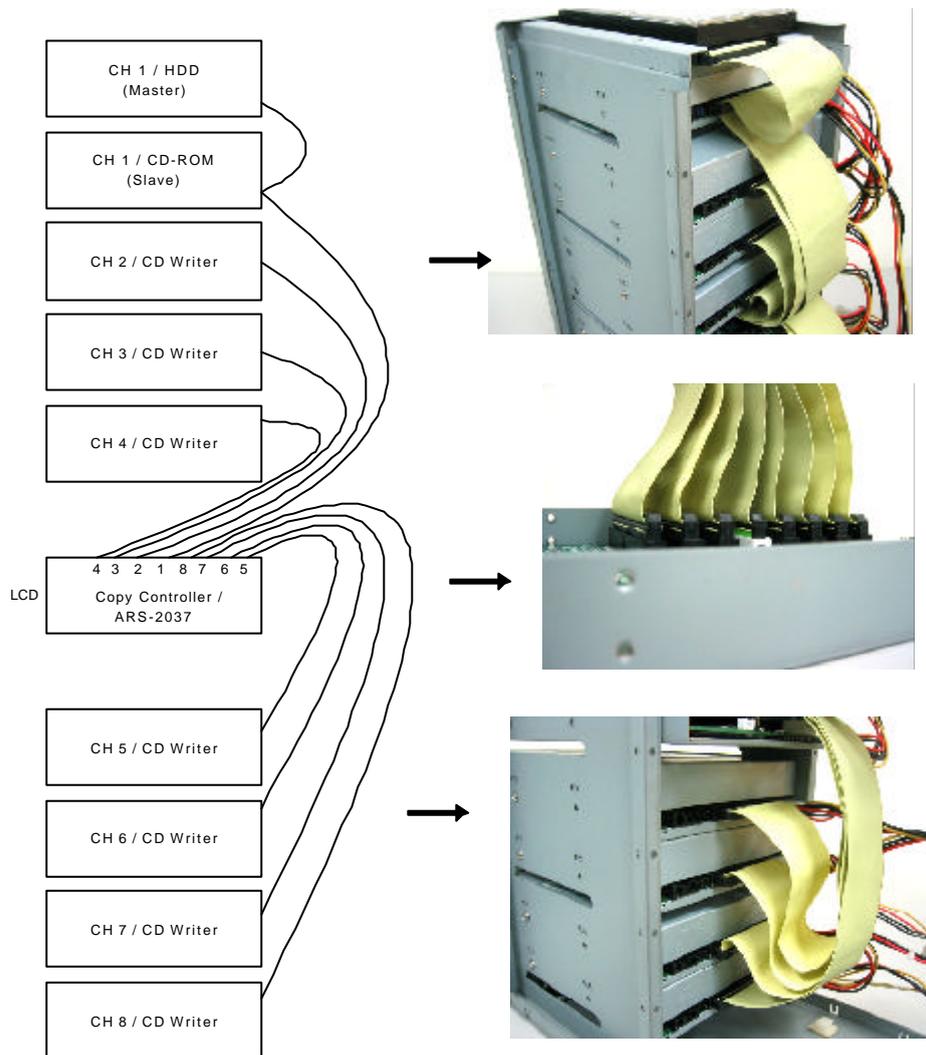
The following diagram and photos indicate the installation of ARS-2037 copy controller with a CD-ROM and 7 CD writers.



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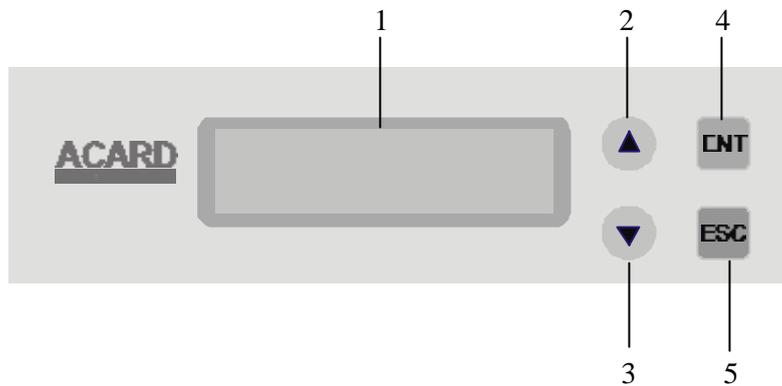
The following diagram and photos indicate the installation of ARS-2037 copy controller with an HDD, a CD-ROM and 7 CD writers.



## Chapter 3 Basic Instructions

### 3.1 Buttons and LCD

There are four buttons and one LCD on the panel of ARS-2037.



1. It shows all functions and messages.
2. It is used to scroll up through functions or menus.
3. It is used to scroll down through functions or menus.
4. It is used to execute a selected function.
5. It is used to cancel a selected function.

Figure 1.



Figure 2.



Figure 1 shows the firmware version of ARS-2037. Figure 2 shows that OS booting takes 20 seconds or so. It depends on how many writers you have installed.

Figure 3.



Figure 3 shows the first function Copy. There are 12 functions. You can press ▼ to see other functions.

## 3.2 About HDD Installation

HDD installation is not necessary, but with a hard disk you can use the function of Image. In other words, you have one more choice to reproduce a CD from an image file stored in the hard disk. The following two subsections are about installing a 3.5" hard disk and not installing respectively.

### 3.2.1 With a HDD

If you have connected a 3.5" hard disk to your copy controller, you need to operate according to the following procedures.

- Once your copy controller detects the hard disk, it will ask if you want to format. A 30GB of hard disk can be divided into 30 partitions, and each partition occupies 1GB.
- Use function 8 Select Source to set the hard disk as the source.
- In function 9 Image, select a partition to store the data.
- If there is no data in a selected partition, place a source CD into CD-ROM, and use function 9-01 Load to transmit data from CD into the selected partition by pressing **ENT**. Different data can be stored in different partitions.
- Switch to function 1 Copy by pressing ▲. Place blank CD discs into CD writers, and press **ENT** to start copying.

- When copying comes to an end, the passed CDs will eject automatically. The default is ejecting automatically, but you can change it.
- The failed CDs will remain in the writers. The default is keeping failed CDs in the writers, but you can change it. To take the failed CDs you need to press the “eject” buttons on the writers.
- During operation do not press any button on your copy controller, because interruption will harm the device, and CDs will be damaged, too.

### 3.2.2 Without a HDD

If you haven't connected a 3.5" hard disk to your copy controller, you need to operate according to the following procedures.

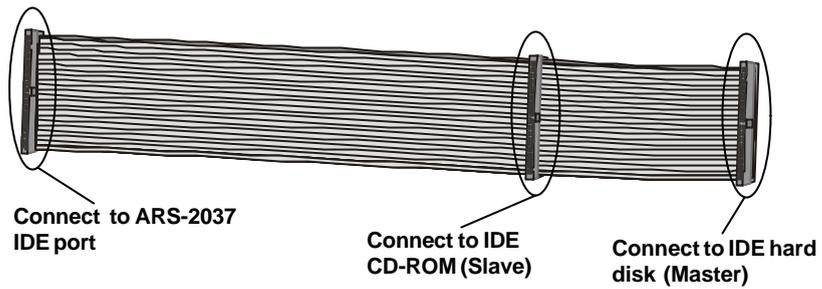
- Place a source CD into CD-ROM.
- Switch to function 1 Copy by pressing ▲ . Place blank CD discs into CD writers, and press **ENT** to start copying.
- When copying comes to an end, the passed CDs will eject automatically. The default is ejecting automatically, but you can change it.
- The failed CDs will remain in the writers. The default is keeping failed CDs in the writers, but you can change it. To take the failed CDs you need to press the “eject” buttons on the writers.

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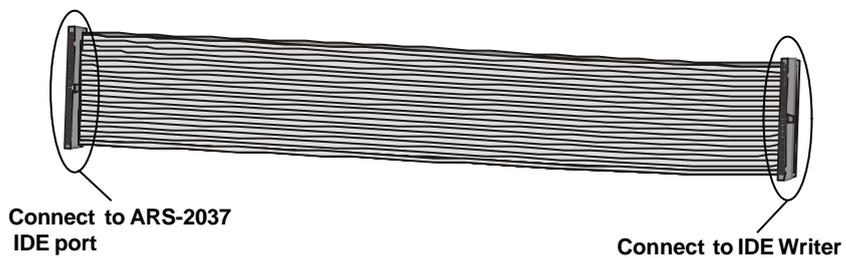
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Identify two different cables before hardware installation.

1. Three connectors for CD-ROM or optional HDD

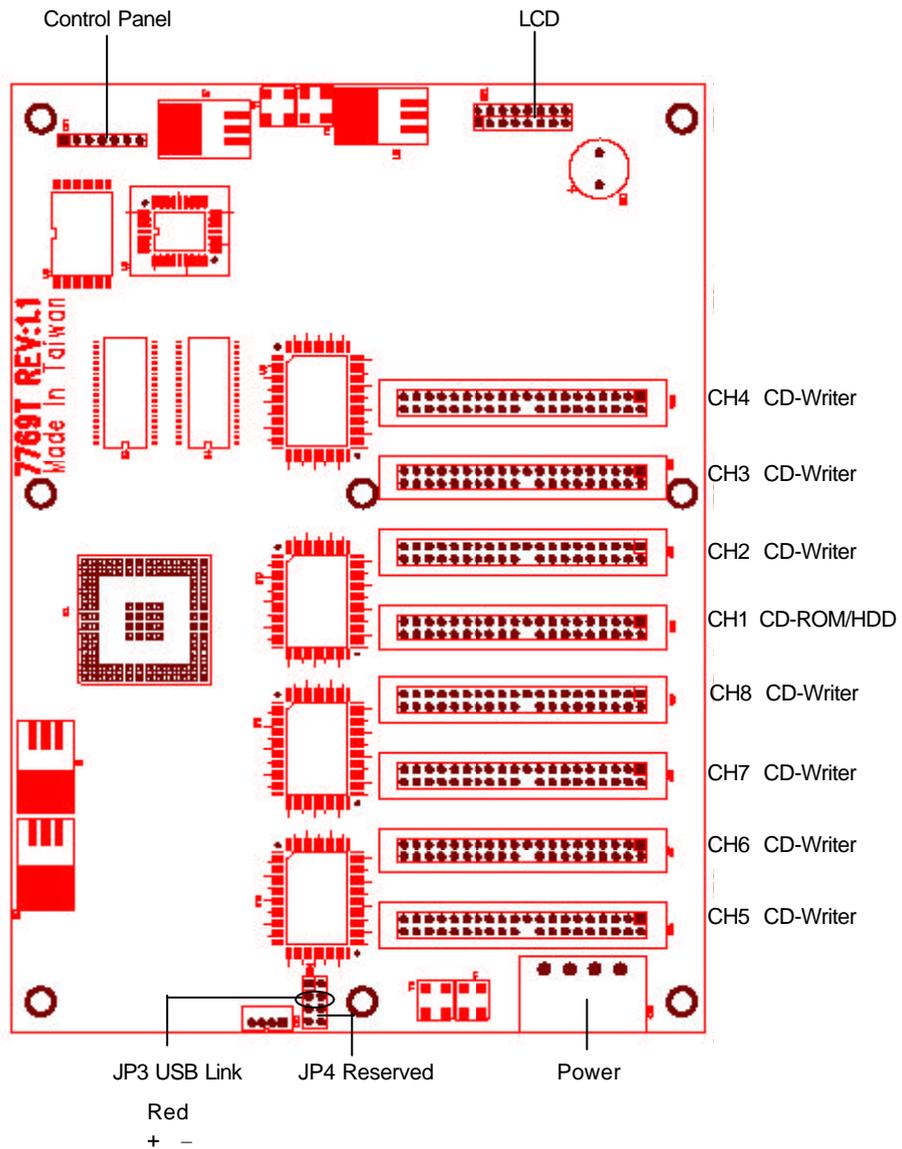


2. Two connectors for CD writers



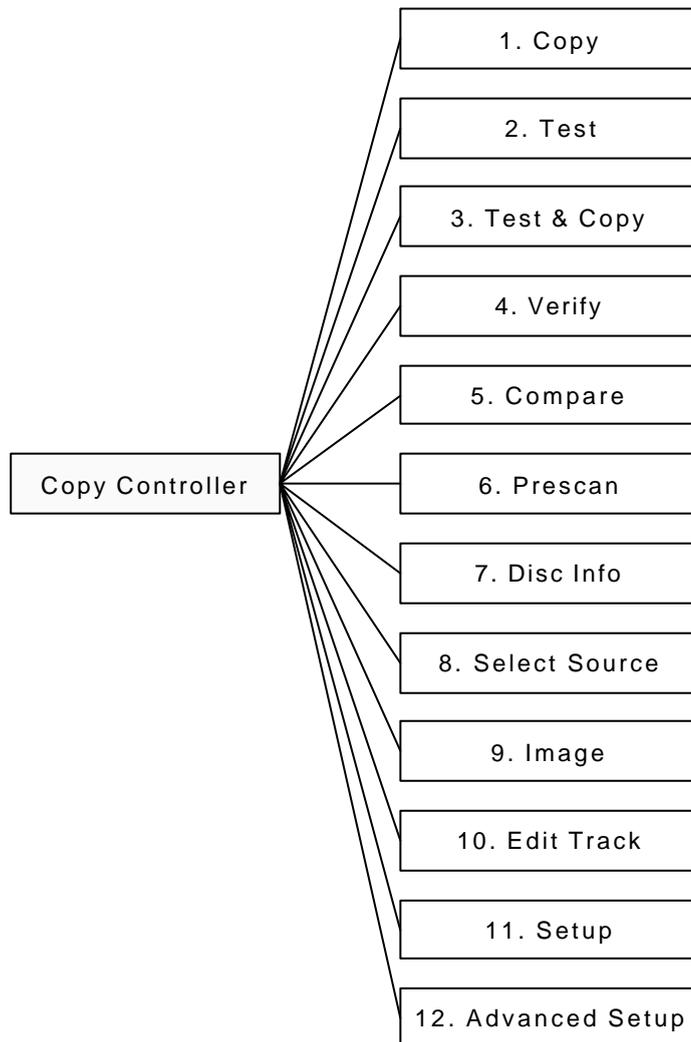
## Chapter 4 Board Layout

The board layout of ARS-2037 is shown as follows.

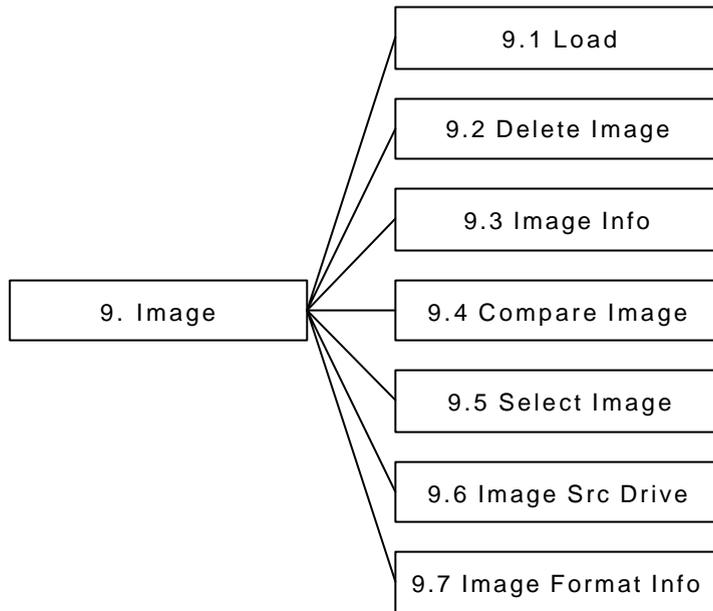


## Chapter 5 Functions

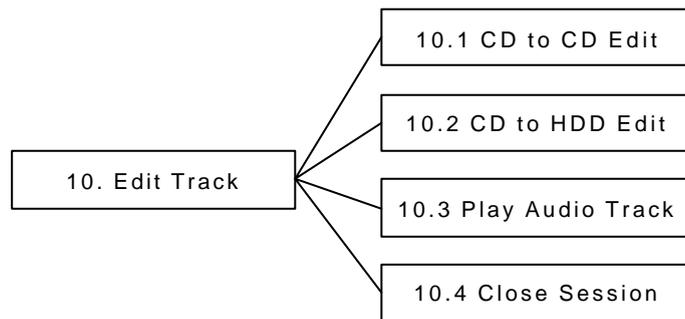
There are 12 major functions in the copy controller, and there are subfunctions in Function 9, 10, 11, and 12 as the following figures show.



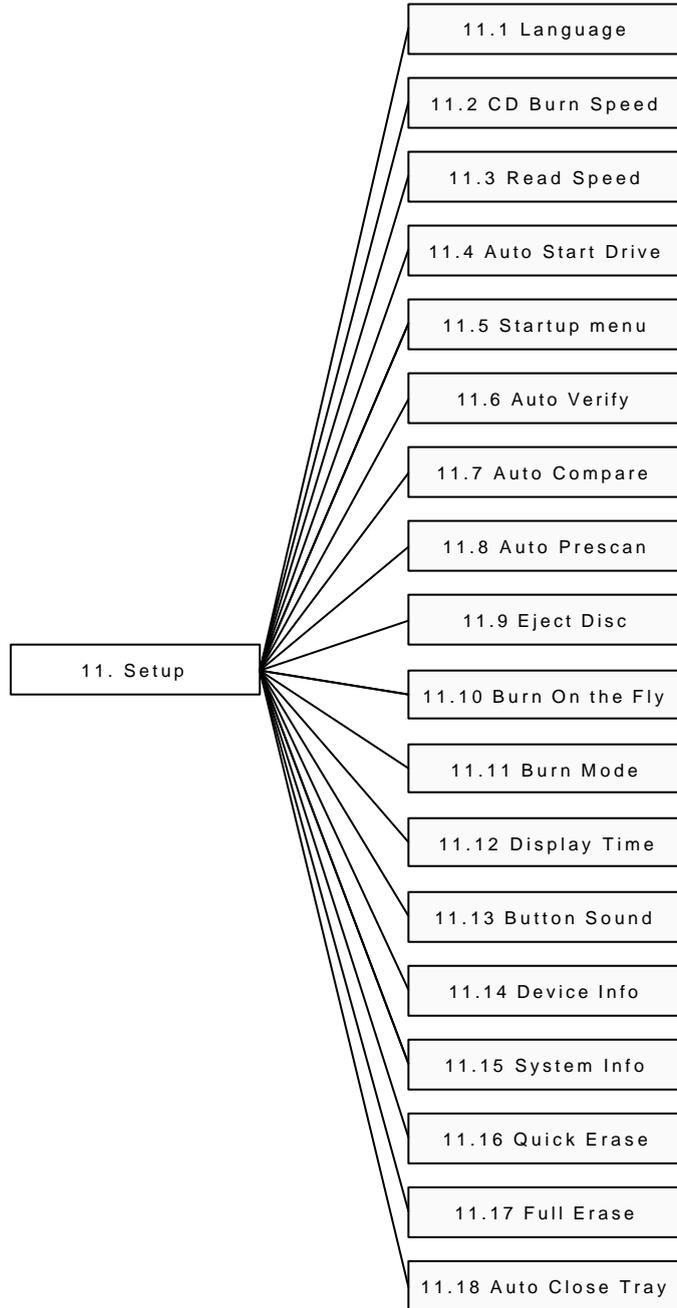
In Function 9 there are 7 subfunctions.



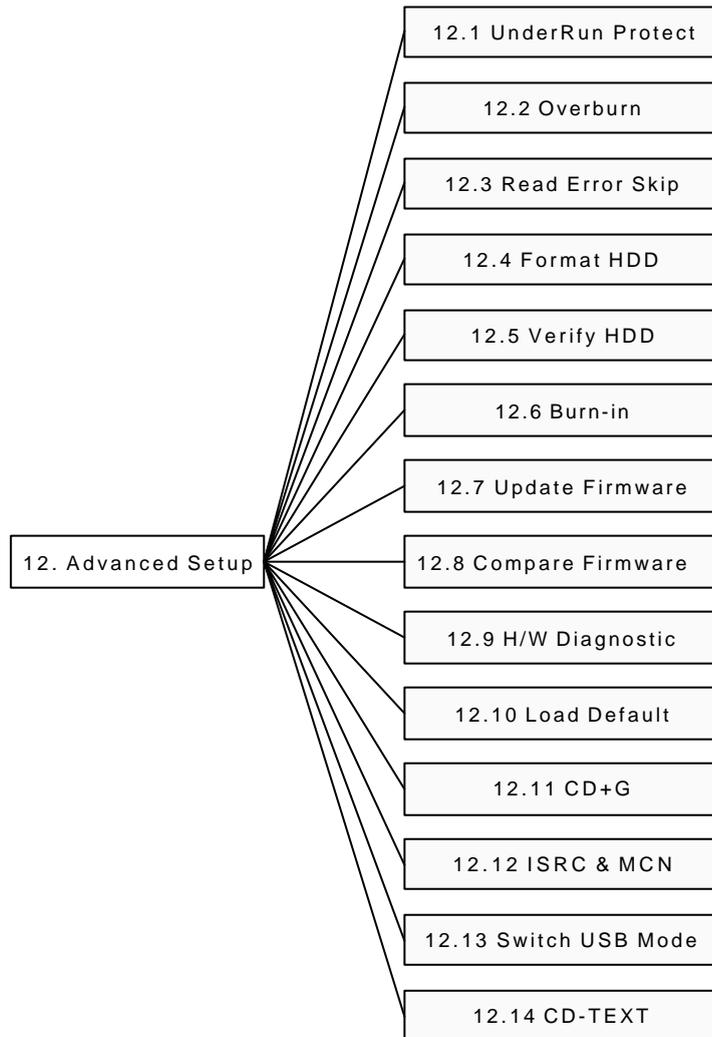
In Function 10 there are 4 subfunctions.



In Function 11 there are 18 subfunctions.



In Function 12 there are 14 subfunctions.

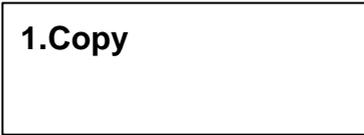


During operation if you don't understand an LCD message, see Appendix 2 .

## **5.1 Copy**

Function 1 Copy is to copy data from a source CD or an image file directly into blank CD discs. Before copying be sure that the source CD is placed into CD-ROM, or there are data in a certain HDD partition if you have installed a hard disk. If you are not so sure of copying, use Function 2 Test to simulate first.

Select function 1. Put a source CD into CD-ROM and blank CD discs into the CD writers. CD rewriteable discs containing old data are usable, too.



**1.Copy**

After the CD-ROM and CD writers detect CDs, press **ENT** to start copying. LCD will show the copying information as follows.



**Copying- CD 0%**  
**650MB 3:00**

When copying is in progress, MB and time will decrease while the percentage of completion will increase. "MB" means the size of data that you want to copy.

When copying comes to an end, LCD will show the results as follows. The passed CDs will eject automatically.



**1.Copy**  
**OK: 07**

## **5.2 Test**

Function 2 Test is to simulate the copying progress. When simulation finishes, there will be no data really written into CD discs.

Select function 2. Put a source CD into CD-ROM and blank CD discs into the CD writers.



**2.Test**

Press **ENT** to start simulation. If you use CD rewriteable discs that contain data, the old data will be quickly erased before simulation as shown below.



**Erasing disc**

LCD will show the testing information as follows.

<b>Testing- CD</b>	<b>0%</b>
<b>650MB</b>	<b>3:00</b>

When the test comes to an end, LCD will show the results as follows.

<b>2.Test</b>
<b>OK: 07</b>

Stopping the test halfway does not affect the CD discs, but if the CD-rewriteable discs contain important data, they may be destroyed.

### **5.3 Test & Copy**

Function 3 Test & Copy is to test first and then copy actually.

Select function 3. Put a source CD into CD-ROM and blank CD discs into the CD writers.

<b>3.Test &amp; Copy</b>
--------------------------

Press **ENT** to start simulation. LCD will show the testing information as follows.

<b>Testing- CD</b>	<b>0%</b>
<b>650MB</b>	<b>3:00</b>

When the test finishes, actual copying will begin as shown below.

**Copying- CD 0%**  
**650MB 3:00**

When the whole process finishes, LCD will show the results as follows.

**3.Test & Copy**  
**OK: 07**

Note that those discs that have passed the test will be copied right away while those that haven't won't be.

## 5.4 Verify

Function 4 Verify is to examine if the target CDs can be read correctly after copying.

Select function 4.

**4.Verify**

Press **ENT** to verify. LCD will show the verification information as follows.

**Verify- CD 0%**  
**650MB 3:00**

When verification comes to an end, LCD will show the results as follows.

<b>4.Verify</b> <b>OK: 07</b>
----------------------------------

## **5.5 Compare**

Function 5 Compare is to make a comparison between the source CD and the target CDs after copying.

Select function 5. Put the source CD into CD-ROM and the target CDs into CD writers.

<b>5.Compare</b>
------------------

Press **ENT** to compare. LCD will show the comparison information as follows.

<b>Compare- CD 0%</b> <b>650MB      3:00</b>
---

When comparison comes to an end, LCD will show the results as follows.

<b>Compare    OK: 7</b> <b>Fail: 0     Diff: 0</b>
---

Press **ENT** to see the details of source 1 as shown below.

<b>Src: 01</b>	<b>CD-ROM</b>
<b>Total:</b>	<b>650MB</b>

Press **ENT** to see the details of source 2. If the comparison is identical, LCD will show the message as follows.

<b>Src: 02</b>	<b>CD-RW</b>
<b>Identical</b>	

If comparison fails, LCD will show the failure. By pressing **ENT** twice, LCD will show that the contents of source 1 and those of source 2 do not match as follows.

<b>Src: 02</b>	<b>CD-RW</b>
<b>TOC not match</b>	

## 5.6 Prescan

Function 6 Prescan is to scan if the source CD can be read correctly, and by the way to test the reading speed.

Select function 6. Put the source CD into CD-ROM.

<b>6.Prescan</b>
------------------

Press **ENT** to prescan. LCD will show the scanning information as follows.

<b>Scanning- CD 0%</b> <b>650MB 3:00</b>
---

When scanning finishes, and the source CD can be read correctly, LCD will show the results as follows.

<b>PreScan OK!</b>
--------------------

## **5.7 Disc Info**

Function 7 Disc Info is to show the basic information of source CD.

Select function 7. Put the source CD into CD-ROM.

<b>7.Disc Info</b>
--------------------

Press **ENT**, and LCD will show the CD information as follows.

<b>Disc Type: CD-ROM</b> <b>Capacity: 650MB</b>
--

## 5.8 Select Source

Function 8 Select Source is to select the data on CD-ROM, CD writers or HDD as the source from which copying will be done.

Select function 8.



**8.Select Source**

Press **ENT**, and then press **▲ ▼** to select the source as shown below.



**Src: CD-ROM**  
**01 IDE1 Master**

After selecting the source such as CD-ROM, you can press **ENT**, and LCD will show the message as follows.



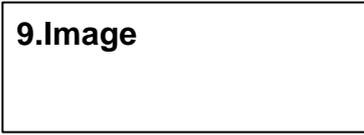
**CD-ROM selected!**

Suppose you select HDD as the source and try to copy from one of its partitions, but the partition contains no data, an error message will appear on LCD. At this moment, you can switch to another partition that contains data, or use function 9 Image to load data into the chosen partition first.

## 5.9 Image

Function 9 Image is valid only when you have connected a hard disk. This function includes 7 subfunctions: Load, Delete Image, Image Info, Compare Image, Select Image, Select Src Drive, and Image Format Info as the figure on page 17 shows. The loaded data is called an image file.

Select function 9.



9.Image

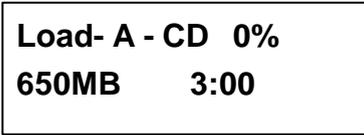
### 5.9.1 Load

Now press **ENT** to enter the following figure. Here the function Load is to let you load data from CD-ROM or any one of the CD writers into the current partition of the hard disk. "P:A" means partition A.



9-01. Image P: A  
Load

Press **ENT** to load. LCD will show the loading information as follows.



Load- A - CD 0%  
650MB 3:00

After the image file is successfully loaded, LCD will show the results as follows.

**Image load OK**

If there is an image file existing in the current partition, the system will ask you whether to overwrite it or not. Please use ▲ ▼ to confirm Yes or No.

**Image Exists  
Overwrite?Yes**

### 5.9.2 Delete Image

If you want to delete an image file stored in a certain partition, you can use the function Delete Image to do so. First, select the function by pressing ▼.

**9-02. Image      P: A  
Delete Image**

The system will ask if you are sure to delete. Use ▲ ▼ to confirm Yes or No.

**Delete Image in  
Partition A?Yes**

After the image file is deleted, LCD will show the results as follows.

**Partition A:  
Image is deleted**

### **5.9.3 Image Info**

This function is to show the basic information of an image file stored in a certain partition. First, select the function by pressing ▼.

**9-03. Image      P: A  
Image Info**

Press **ENT**, and LCD will show the information of the image file as follows.

**Disc Type: CD-ROM  
Capacity: 650MB**

### **5.9.4 Compare Image**

This function is to compare the contents of the source CD and those of the image file in the partition. First, select the function by pressing ▼.

**9-04. Image      P: A  
Compare Image**

Press **ENT**, and LCD will show the comparison information as follows.

<b>Compare- CD 0%</b> <b>650MB 3:00</b>
--

When comparison comes to an end, LCD will show the results as follows.

<b>Compare OK: 1</b> <b>Fail: 0 Diff: 0</b>
--

Press **ENT** to see the details of source as shown below.

<b>Src: 01 CD-ROM</b> <b>Total: 650MB</b>
--

Press **ENT** to see the details of target. If the comparison is identical, LCD will show the message as follows.

<b>Tgt: 00 HDD P: A</b> <b>Identical</b>
---

If comparison fails, LCD will show the failure. By pressing **ENT** twice, LCD will show that the contents of source and those of target do not match as follows.

<b>Tgt: 00 HDD P: A</b> <b>TOC not match</b>
---

### 5.9.5 Select Image

This function is to select a partition in the hard disk. First, select the function by pressing ▼.

<b>9-05. Image P: A</b> <b>Select Image</b>
--

After installing a hard disk, your copy controller will format it automatically. Each partition occupies 1GB. The number of partitions is dependent on the hard disk's capacity. The partitions are alphabetically arranged. Select a partition by pressing ▲ ▼, and LCD will show the message as follows.

<b>Select</b>	<b>Partition</b>
<b>A: CD</b>	<b>650MB</b>

After the partition is selected, LCD will show the results as follows.

<b>Set Partition to</b> <b>A</b>
-------------------------------------

### 5.9.6 Image Src Drive

This function is to select CD-ROM or any of the CD writers as the source from which you can load data into a certain partition as an image file.

First, select the function by pressing ▼.

**9-06. Image    P: A**  
**Image Src Drive**

Then, use ▲ ▼ to select CD-ROM or any of the CD writers as the source.

**Select Img Src:**  
**01 IDE1 CD-ROM**

After selecting CD-ROM as the source, you can press **ENT**, and LCD will show the message as follows.

**Load image from**  
**Drive ID-01**

### 5.9.7 Image Format Info

This function is to see how you have formatted your hard disk.

Now press **ESC** and ▼ to enter the following figure.

**9-07. Image    P: A**  
**Image Format Info**

Press **ENT** to see the following figure.

**Image Format Info  
CD**

If your hard disk is a new one and not formatted yet, LCD will show the message as follows after powering on.

**HD00 not Format!  
Format HDD? Yes**

## **5.10 Edit Track**

Function 10 Edit Track is exclusively designed for editing a collection of favorite songs from CDs. In other words, it can collect different tracks (songs) on a number of CDs and merge them into a single CD. This function includes 4 subfunctions: CD to CD, CD to HDD, Play Audio Track and Close Session as the figure on page 17 shows.

Select function 10.

**10.Edit Track**

### 5.10.1 CD to CD

Now press **ENT**, and you will enter the following figure. Here the function CD to CD is to let you select a track or more from CD-ROM, and then copy into blank CD-R/RWs.

**10-01. Edit Track**  
**CD to CD Edit**

Now press **ENT**, and you will enter the following figure. Here 1/10 means the number one of the 10 tracks, and 03:25 means the length of track.

**Select Track:**  
**1/10      03:25**

You can press ▼ to see the second track and so on. Suppose we decide to select the first track, then press **ENT**. A “+” will appear beside 1/10 as shown below. But pressing **ENT** again may cancel the selection.

**Select Track:**  
**+1/10      03:25**

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After selecting, please use ▲ to move to the “End” menu as shown below.

**Select Track:  
End 1Trk03:25**

Press **ENT** to finish the CD editing, and use ▲ ▼ to confirm Yes or No.

**End edit disc  
and burn?Yes**

LCD will show the copying information as follows.

**Copying- 24X Edit  
1/10 - > 1/1**

“1/1” means the first track of all tracks we have selected, and here we have just selected one track. When copying comes to an end, LCD will show the message as follows.

**Burn Complete!  
OK: 07**

The system will ask if you want to keep editing. Please use ▲ ▼ to confirm Yes or No as shown below.

**Continue edit  
next Disc?Yes**

If you want to keep editing, the current source CD will eject automatically, and the system will ask you to insert another new CD as shown below.

**Insert next disc**

After inserting the new CD, press **ENT** to edit as before. Suppose we decide to select the second track, then press **ENT**. A “+” will appear beside 2/10 as shown below.

**Select Track:  
+2/10 04:25**

After selecting, please use ▲ to move to the “End” menu as shown below.

**Select Track:  
End 1Trk04:25**

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Press **ENT** to finish the CD editing, and use **▲ ▼** to confirm Yes or No.

**End edit disc  
and burn?Yes**

LCD will show the copying information as follows.

**Copying- 24X Edit  
2/10 -> 2/2**

“2/2” means the second track of all tracks we have selected, and so far we have selected two tracks from two different CDs. When copying comes to an end, LCD will show the message as follows.

**Burn Complete!  
OK: 07**

The system will ask if you want to keep editing. Suppose we don't like to continue, then press **▼** to confirm No.

**Continue edit  
next Disc?No**

Now press **ENT**. The system will ask if you want to close all CDs' sessions. Please use **▲ ▼** to confirm Yes or No as shown below.

**Close all disc's  
session? Yes**

After deciding to close, LCD will show the message as follows. Note that you cannot listen to the music before closing sessions.

**Closing Session  
Please wait---**

### 5.10.2 CD to HDD

After closing sessions, press **ESC** and **▼** to enter the following figure. Here the function CD to HDD is to let you select a track or more from CD-ROM, and then copy into a certain partition of HDD.

**10-02. Edit Track  
CD to HDD Edit**

Now press **ENT**, and you will enter the following figure. Here 1/10 means the number one of the 10 tracks, and 03:25 means the playing time.

**Select Track:  
1/10      03:25**

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Suppose we decide to select the first track, then press **ENT**. A “+” will appear beside 1/10 as shown below. But pressing **ENT** again may cancel the selection.

**Select Track:**  
**+1/10 03:25**

After selecting, please use ▲ to move to the “End” menu as shown below.

**Select Track:**  
**End 1Trk03:25**

Press **ENT** to finish the CD editing, and use ▲ ▼ to confirm Yes or No.

**End edit disc**  
**and burn?Yes**

Then, the track as an image file will be loaded into HDD. LCD will show the loading information as follows.

**Load- P0 -24X Edit**  
**1/10 -> 1/1**

When loading comes to an end, LCD will show the message as follows.

**Image load OK**

The system will ask if you want to keep editing. Please use ▲ ▼ to confirm Yes or No as shown below.

**Continue edit  
next Disc?Yes**

If you want to keep editing, the current source CD will eject automatically, and the system will ask you to insert another new CD as shown below.

**Insert next disc**

After inserting the new CD, press **ENT** to edit as before. Suppose we select the second track, then press **ENT**. A “+” will appear beside 2/10 as shown below.

**Select Track:  
+2/10 04:25**

After selecting, please use ▲ to move to the “End” menu as shown below.

**Select Track:  
End 1Trk04:25**

Press **ENT** to finish the CD editing, and use ▲ ▼ to confirm Yes or No.

**End edit disc  
and burn?Yes**

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Then, the track as an image file will be loaded into HDD. LCD will show the loading information as follows.

**Load- P0 -24X Edit**  
**2/10 - > 2/2**

When loading comes to an end, LCD will show the message as follows.

**Image load OK**

The system will ask if you want to keep editing. This time use ▼ to confirm No as shown below.

**Continue edit**  
**next Disc?No**

Then, the system will ask if you want to burn from HDD into CD-R/RW or move into a partition. Use ▲ to confirm Burn as shown below.

**Burn or Move to**  
**partition?Burn**

After pressing ▲ , LCD will show the copying information as follows.

**Copy- P0 -24X 0%**  
**1/2 Trk03:25**

When burning finishes, LCD will show the results as follows.

**Burn Complete !**  
**OK: 07**

Now press **ESC** to enter the following figure. And press ▼ to move the data from HDD template into a certain partition.

**Burn or Move to  
partition? Move**

After pressing ▼, you need to select a partition into which the data will be moved. Suppose we select A as shown below.

**Select Partition**  
**A**

After pressing **ENT**, LCD will show the moving information as follows.

**Moving to P: A**  
**0%**

When moving finishes, LCD will show the results as follows.

**Moving to P: A**  
**OK!**

If the chosen partition has contained image data, the system will ask to overwrite or keep the data. Here use ▲ to overwrite.

**Image Exists  
Overwrite?Yes**

After pressing ▲ , LCD will show the moving information as follows.

**Moving to P: A  
0%**

When moving finishes, LCD will show the results as follows.

**Moving to P: A  
OK!**

### **5.10.3 Play Audio Track**

This function is to make the copy controller act as a music player. You can connect a headphone to the headphone jack on the source, and enjoy the music.

Now press **ESC** and ▼ to select the function.

**10-03. Edit Track  
Play Audio Track**

Use ▲ ▼ to select the track you want to play.

**Select Track:**  
**1/10 03:25**

After selecting and pressing **ENT**, LCD will show the playing information below.

**Playing Track-1**  
**00:00 / 03:25**

#### **5.10.4 Close Session**

This function is to close CDs and let no data written into. After closing, you can put the CDs on any normal player and listen.

Now press **ESC** and ▼ to select the function.

**10-04. Edit Track**  
**Close Session**

After pressing **ENT**, the system will ask if you are sure to close.

**Close all disc's**  
**session? Yes**

After pressing **ENT**, LCD will show the message as follows.

**Closing Session**  
**Please wait---**

When closing finishes, LCD will show the results as follows.

**Closing Complete**  
**OK :7      Fail :0**

## **5.11 Setup**

Function 11 Setup lets you change the default settings. Once you change a setting, remember to press **ENT** to save it. However, it is suggested to use the defaults for the optimal operation. This function includes 18 subfunctions: Language, CD Burn Speed, Read Speed, Auto Start Drive, Startup Menu, Auto Verify, Auto Compare, Auto Prescan, Eject Disc, Burn On The Fly, Burn Mode, Display Time, Button Sound, Device Info, System Info, Quick Erase, Full Erase, and Auto Close Tray as the figure on page 18 shows.

Select function 11.

**11.Setup**

### 5.11.1 Language

Now press **ENT**, and you will enter the following figure. The function Language lets you select a language in which messages can be shown on LCD.

**11-01. Setup  
Language**

Press **ENT** to enter the following figure. The default is English. Spanish, Japanese, Traditional Chinese and Simplified Chinese are made to order.

**Language  
English**

### 5.11.2 CD Burn Speed

On the above figure press **ESC** and ▼ to enter the following figure. This function lets you control the burning speed of CD writers.

**11-02. Setup  
CD Burn Speed**

Press **ENT** to enter the following figure. The default is auto.

**CD Burn Speed  
Auto**

### 5.11.3 Read Speed

Now press **ESC** and ▼ to enter the following figure. The function Read Speed lets you control the reading speed of target CDs.

**11-03. Setup  
Read Speed**

Press **ENT** to enter the following figure. The default is maximum, but there are still other choices: 32X, 16X and 8X.

**Read Speed  
Maximum**

### 5.11.4 Auto Start Drive

Now press **ESC** and ▼ to enter the following figure. Auto Start Drive is to copy or test automatically once you put blank CDs into the writers.

**11-04. Setup  
Auto Start Drive**

Press **ENT** to enter the following figure. The default is Off. Press ▼ to select 1 (one blank CD).

**Auto Start Drive  
Off**

### 5.11.5 Startup Menu

Now press **ESC** and ▼ to enter the following figure. Startup Menu lets you select any one of the functions except Adv Setup as the first item appearing on the menu whenever you turn on the copy controller.

**11-05. Setup  
Startup Menu**

Press **ENT** to enter the following figure. The default is Copy. You can certainly select any other function as the first item, but remember to press **ENT** to confirm.

**Startup Menu  
1.Copy**

### 5.11.6 Auto Verify

Now press **ESC** and ▼ to enter the following figure. Auto Verify is to verify automatically if the target CDs can be read after copying.

**11-06. Setup  
Auto Verify**

Press **ENT** to enter the following figure. The default is Off. Press ▼ to select On.

**Auto Verify  
Off**

### 5.11.7 Auto Compare

Now press **ESC** and ▼ to enter the following figure. Auto Compare is to compare automatically the source CD and the target CDs after copying.

**11-07. Setup  
Auto Compare**

Press **ENT** to enter the following figure. The default is Off. Press ▼ to select On.

**Auto Compare  
Off**

### 5.11.8 Auto Prescan

Now press **ESC** and ▼ to enter the following figure. Auto Prescan is to scan automatically if the source CD can be read correctly, and by the way to test the reading speed.

**11-08. Setup  
Auto Prescan**

Press **ENT** to enter the following figure. The default is Off. Press ▼ to select On.

**Auto Prescan  
Off**

### 5.11.9 Eject Disc

Now press **ESC** and ▼ to enter the following figure. Eject Disc provides three choices. They are Eject Good Only, Eject All Disc, and Do Not Eject. Eject Good Only means that the CDs will eject automatically only when they are copied successfully. Eject All Disc means that the CDs will eject automatically no matter they are copied successfully or not. Do Not Eject means that you need to eject the CDs manually when copying finishes.

**11-09. Setup**  
**Eject Disc**

Press **ENT** to enter the following figure. The default is Eject Good Only. Press ▼ to select Eject All Disc or Do Not Eject.

**Eject Disc**  
**Eject Good Only**

### 5.11.10 Burn On The Fly

Now press **ESC** and ▼ to enter the following figure. Burn On The Fly lets you control the copying methods. When the setting is On, the data will be copied directly from the source CD to the target CDs. When the setting is Off, the data will be loaded into a partition of HDD first, and hence copying will be done.

**11-10. Setup**  
**Burn On The Fly**

Press **ENT** to enter the following figure. The default is On. Press **▼** to select Off.

**Burn On The Fly**  
**On**

If your copy controller didn't connect with a hard disk, LCD will show the message as follows.

**No Valid HDD !**

#### **5.11.11 Burn Mode**

Now press **ESC** to return to Function 11, and then select part 11 Burn Mode as the following figure shows. Burn Mode lets you control the burning modes. There are two modes: DAO (Disc At Once) and TAO (Track At Once).

**11-11. Setup**  
**Burn Mode**

Press **ENT** to enter the following figure. The default is DAO. Press **▼** to select TAO.

**Burn Mode**  
**DAO**

### 5.11.12 Display Time

Now press **ESC** and ▼ to enter the following figure. Display Time is to show the copying time.

**11-12. Setup  
Display Time**

Press **ENT** to enter the following figure. The default is On. Press ▼ to select Off.

**Display Time  
On**

### 5.11.13 Button Sound

Now press **ESC** and ▼ to enter the following figure. Button Sound lets you control the sound of a button when you press it.

**11-13. Setup  
Button Sound**

Press **ENT** to enter the following figure. The default is On. Press ▼ to select Off.

**Button Sound  
On**

#### 5.11.14 Device Info

Now press **ESC** and **▼** to enter the following figure. Device Info shows the information of the CD-ROM and any of the CD writers you have installed.

**11-14. Setup  
Device Info**

Press **ENT** to enter the following figure.

**01 IDE1 Master  
CD-ROM : TEAC**

Press **ENT** to enter the following figure.

**CD- 540E  
3.0A**

Press **▼** twice to enter the following figure.

**02 IDE2 Master  
CD-RW : PLEXTOR**

Press **ENT** to enter the following figure.

**CD-RW PX- W2410A  
1.01**

### 5.11.15 System Info

Now press **ESC** and ▼ to enter the following figure. System Info shows the information of the system.

**11-15. Setup  
System Info**

Press **ENT** to enter the following figure.

**CD Duplicator  
1-7 ver: 1.00A**

Press **ENT** to enter the following figure.

**Fujitsu 29LV320B  
2004/10/15 ACARD**

### 5.11.16 Quick Erase

Now press **ESC** and ▼ to enter the following figure. Quick Erase is to erase the data on the CD rewriteable discs quickly.

**11-16. Setup  
Quick Erase**

Press **ENT** to enter the following figure. Use **▲ ▼** to confirm Yes or No.

**All data will be  
lost, erase?Yes**

After confirming Yes and pressing **ENT**, LCD will show the message as follows.

**Erasing disc  
00:25 (Quick)**

When erasing finishes, LCD will show the results as follows.

**Quick Erase  
OK:07 Fail:00**

### **5.11.17 Full Erase**

Now press **ESC** and **▼** to enter the following figure. Full Erase is to erase the data on the CD rewriteable discs completely. Compared with Quick Erase, Full Erase takes longer time to do the job.

**11-17. Setup  
Full Erase**

Press **ENT** to enter the following figure. Use **▲ ▼** to confirm Yes or No.

**All data will be  
lost, erase?Yes**

After confirming Yes and pressing **ENT**, LCD will show the message as follows.

**Erasing disc  
45:00 (Full)**

When erasing finishes, LCD will show the results as follows.

**Full Erase  
OK:07 Fail:00**

#### **5.11.18 Auto Close Tray**

Now press **ESC** and **▼** to enter the following figure. Auto Close Tray is to close the writer's tray automatically. It is related to function 11.4 Auto Start Drive. If you haven't set any writer to copy in function 11.4, this function will be invalid.

**11-18. Setup  
Auto Close Tray**

Press **ENT** to see the following figure.



Here 5 means that it will take 5 seconds to close the writer's tray automatically after copying finishes and the tray is ejected. Besides 5 seconds, there are 10, 15, 20, 25, 30, 35, 40, 45, and 50 seconds for choice. If you have set one or all seven writers in function 11.4, and choose 10 seconds here, then one writer's tray or all seven writers' trays will be closed in 10 seconds after copying finishes.

## **5.12 Adv Setup**

Function 12 Adv Setup lets you change the system configuration. This function includes 14 subfunctions: UnderRun Protect, Overburn, Read Error Skip, Format HDD, Verify HDD, Burn-in, Update Firmware, Compare Firmware, H/W Diagnostic, Load Default, CD+G, ISRC & MCN, Switch USB Mode, and CD-TEXT as the figure on page 19 shows.

Now press **ESC** to return to Function 11. Then, **press ESC for 2 seconds** to enter Function 12-01 as the following figure shows.



### 5.12.1 UnderRun Protect

Now if you press **ESC**, you can enter Function 12 as the following figure shows.

**12.Adv Setup**

UnderRun Protect lets you control On and Off of Buffer Under Run Protection. Press **ENT** to enter the following figure. The default is On. Press **▼** to select Off.

**UnderRun Protect**  
**On**

### 5.12.2 Overburn

Now press **ESC** and **▼** to enter the following figure. Overburn lets you decide whether to copy beyond the limit of the CD or not.

**12-02. Adv Setup**  
**Overburn**

Press **ENT** to enter the following figure. The default is Off. Press **▼** to select On. Overburn may cause a CD writer to be damaged and data incomplete.

**Overburn**  
**Off**

### 5.12.3 Read Error Skip

Now press **ESC** and **▼** to enter the following figure. Read Error Skip is to ignore any error that occurs during copying. Under normal circumstances, when an error occurs during copying, a message will appear on LCD. Yet, you can use Read Error Skip to copy some defective CDs.

**12-03. Adv Setup**  
**Read Error Skip**

Press **ENT** to enter the following figure. The default is Off. Press **▼** to select On.

**Read Error Skip**  
**Off**

### 5.12.4 Format HDD

Now press **ESC** and **▼** to enter the following figure. Format HDD is to partition the hard disk. But before formatting, all data on the hard disk will be deleted.

**12-04. Adv Setup**  
**Format HDD**

Press **ENT** to get the next figure. In CD a partition occupies 1GB. If you format once more, the old data will be lost.

**HD Partition**  
**FormatSelect? CD**

If your copy controller doesn't connect with a hard disk, LCD will show the message as follows.

**There is no HDD!**

### 5.12.5 Verify HDD

Now press **ESC** to return to Function 12, and then select part 5 Verify HDD as the following figure shows. Verify HDD is to verify if the hard disk or any of its partitions can work well.

**12-05. Adv Setup**  
**Verify HDD**

Press **ENT** to enter the next figure. Use **▲ ▼** to confirm Disk or Parti.

**Verify Disk or**  
**Partition? Disk**

Press **ENT** to verify. After verification LCD will show the results as follows.

**Verify Hard Disk**  
**OK!**

### 5.12.6 Burn-in

Now press **ESC** and **▼** to enter the following figure. Burn-in is to simulate the copying progress many times. The time can be from 1 to 1000. After each cycle of simulation, the CDs on the CD writers will eject automatically and recede for the next bout of simulation.

**12-06. Adv Setup**  
**Burn-in**

Press **ENT** to enter the next figure. Test is simply a simulation.

**Burn-in**  
**Test**

Press **ENT** and use **▲ ▼** to select the time of simulation such as 1, 2, 3...1000 or Run Continuous. The figure below shows Run Continuous.

**Sel burn-in num:**  
**Run Continuous**

Press **ESC, ENT, ▼** to select Erase & Copy as the following figure shows. Erase & Copy is to erase and write repeatedly. It is only for CD rewriteable discs.

**Burn-in**  
**Erase&Copy**

Press **ENT** and use **▲ ▼** to select the time of simulation such as 1, 2, 3...1000 or Run Continuous. The figure below shows Run Continuous.

**Sel burn-in num:  
Run Continuous**

### 5.12.7 Update Firmware

Now press **ESC** and **▼** to enter the following figure. Update Firmware is to update firmware to the latest version. But you should get the version first.

**12-07. Adv Setup  
Update Firmware**

You can get the newest firmware version from ACARD by e-mail, or download it directly from the web site: <http://www.acard.com> Then, unzip the file "cdxxx.bin" and copy it into a blank CD.

After placing the CD into the CD-ROM , press **ENT**. The system will begin searching the new firmware and show the message on LCD as follows after it finds the new firmware. Then press **ENT** to update.

**Searching F/W---  
XXX/XXXXX**

### **5.12.8 Compare Firmware**

Now press **ESC** and ▼ to enter the following figure. Compare Firmware is to compare the current firmware version and the newly downloaded version. It can prove if the downloaded version is the newest one.

**12-08. Adv Setup  
Compare Firmware**

### **5.12.9 H/W Diagnostic**

Press **ESC** and ▼ to enter the next figure. H/W Diagnostic is to test the system.

**12-09. Adv Setup  
H/W Diagnostic**

Press **ENT** to enter the next figure, and begin the LCD test. After that, the system will do the button test, self-test of SDRAM, the hardware connection test and flash test. All test results will be shown on LCD. It is the easiest way to know if the system can work well.

**LCD Test Start**

When all tests finishes, LCD will show the message as follows.

**Test finished**

### **5.12.10 Load Default**

Now press **ESC** and **▼** to enter the next figure. Load Default is to make all changed settings return to defaults.

**12-10. Adv Setup  
Load Default**

Press **ENT** to enter the next figure. Use **▲ ▼** to confirm Yes or No.

**Load Default  
Config? Yes**

When default loading finishes, LCD will show the results as follows.

**Load Default  
OK**

### **5.12.11 CD+G**

Now press **ESC** and ▼ to enter the following figure. CD+G is a kind of special copying format. This function supports it.

**12-11. Adv Setup**  
**CD+G**

Press **ENT** to enter the next figure. The default is Off. Press ▼ to select On.

**CD+G**  
**Off**

### **5.12.12 ISRC & MCN**

Now press **ESC** and ▼ to enter the following figure. ISRC and MCN are special copying formats. This function supports them.

**12-12. Adv Setup**  
**ISRC & MCN**

Press **ENT** to enter the next figure. The default is Off. Press ▼ to select On.

**ISRC & MCN**  
**Off**

### 5.12.13 Switch USB Mode (optional)

Now press **ESC** and **▼** to enter the next figure. Switch USB Mode lets you switch to the USB mode if your copy controller has connected with a PC.

**12-13. Adv Setup**  
**Switch USB Mode**

Press **ENT** to enter the following figure. "LH" means link host.

**USB L.H Mode**

Now press **▲** to enter the following figure. Pressing **ENT** lets you return to standalone mode. "SA" means standalone.

**Back to SA-Mode?**  
**Yes**

### 5.12.14 CD-TEXT

Now press **ESC** and **▼** to enter the following figure. CD-TEXT is a kind of special copying format. This function supports it.

**12-14. Adv Setup**  
**CD-TEXT**

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Press **ENT** to enter the next figure. The default is Off. Press ▼ to select On.

<b>CD-TEXT</b> <b>Off</b>
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## **Chapter 6 Troubleshooting**

### **6.1 About LCD**

After you power on, if there is no display on the LCD, check if the connection of power cord is firm and the environment of power outlet is normal.

### **6.2 About Error Messages**

During Copy, Test, Compare and Verify, etc. if you press **ESC** to abort, an error message will appear on LCD. Abortion may cause the copy controller to hang up, therefore you have to power on again.

If reading fails, an error message will appear on LCD. Get a new source CD to try again. If the copy controller hasn't detected any device after powering on, an error message will appear on LCD.

### **6.3 About CD-ROM/CD Writers**

If a CD-ROM or a CD writer cannot read, confirm the format of the source CD and check if it is damaged. Use any CD writer to read the source CD. If it works, the CD-ROM is probably defective or not compatible with the source CD.

### **6.4 About Buttons**

If you press any of the four buttons on the panel, but there is no response, it is perhaps that the button cannot function well. Inspect the jumper setting.

## 6.5 About CD Writer Not Readable

After copying if the CD writer is not readable, use Compare to examine, or get another CD-ROM to test.

## 6.6 About High Failure Rate

If the failure rate of copying is high, do the following things to improve.

- Lower the speed of CD writer.
- Inspect the blank disc's quality.
- Update the firmware.
- Inspect the CD writer's maximum writing speed. If the speed is over 8X, copy the data to a hard disk first, and then transmit to CD.

## 6.7 About Firmware Update

If you cannot update the firmware, inspect it. Perhaps you have downloaded a wrong file. Failure in firmware update may cause the copy controller to fail in booting. Under the circumstance, return the control board to distributor for repair.

## 6.8 About Function 12 and Cancellation

If you want to execute function 12 Advanced Setup, press **ESC** for 2 seconds. And during operation if you want to cancel a function like Copy, Test, Verify and so on, press **ESC** for 2 seconds, too.

## Appendix A About AEC-4420P/PB

### 1 Overview

ACARD AEC-4420P and 4420PB are converters that turn internal IDE interfaces into external USB ones. They are chiefly used together with ACARD Copy Controller series. AEC-4420P can easily connect a CD/DVD writer or a hard drive that is connected to a standalone copy controller to PC through the USB interface, but AEC-4420PB can only connect a CD/DVD writer to PC. Then, you can control the CD/DVD writer or the hard drive through PC.

### 2 Features

- Turns IDE interface to USB one.
- Has a user-friendly interface, easy for installation and operation.
- Has a switch between standalone and link host.
- Compatible with ACARD Ha! DVD Burner.
- Can be a bridge between PC and a writer connected to a copy controller for external recording.
- Manages image files in the hard drive connected to a copy controller through ACARD Image Manager software.
- Optional for a copy controller to extend functions.
- Supports Windows 98/ME/NT/2000/XP/Server 2003.

### 3 Specifications

- Has a USB controller and an IDE interface
- Supports Ultra DMA 33/66/100/133 IDE interface
- The data transfer rate is up to 480Mb/Sec (60MB/Sec) with USB 2.0
- Copy controller can be standalone or link host via the digital switch
- Signal control switch through external control signals

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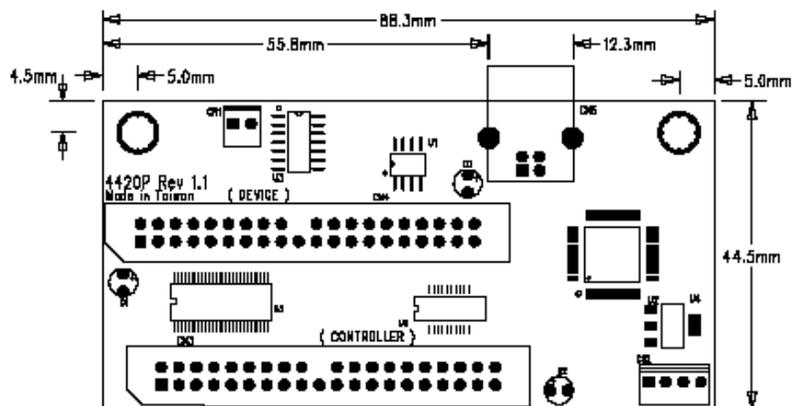
- Can be used together with a copy controller (ACARD or other brands)
- Power requirement: 5V
- Size: 4420P – 8.8 cm (L) 4.5 cm (W) 1.5 cm (H)  
4420PB – 12.2 cm (L) 3.5 cm (W) 2.5 cm (H)

### 4 Layout

(a) AEC-4420P

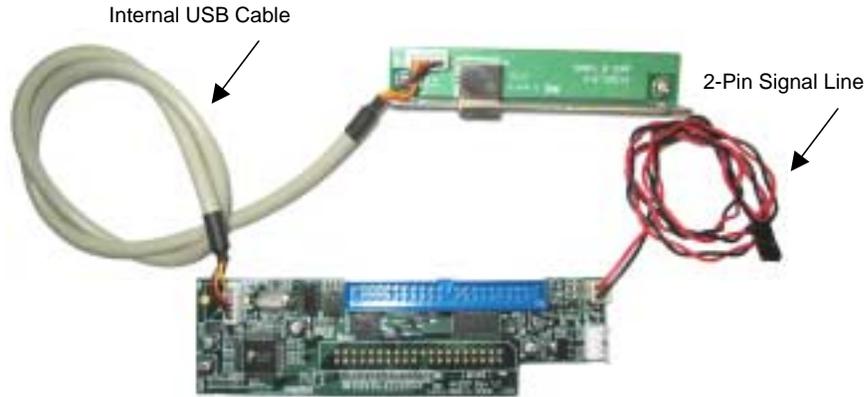


The actual product of 4420P

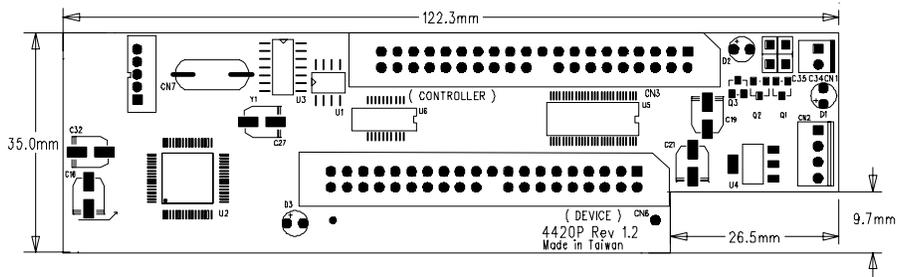


The floor plan of 4420P

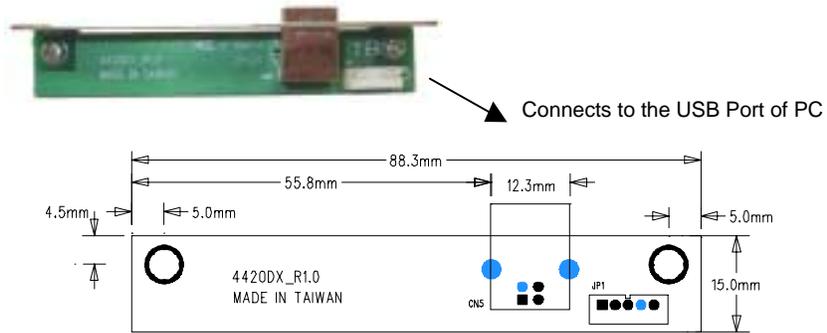
(b) AEC-4420PB



The actual product of 4420PB

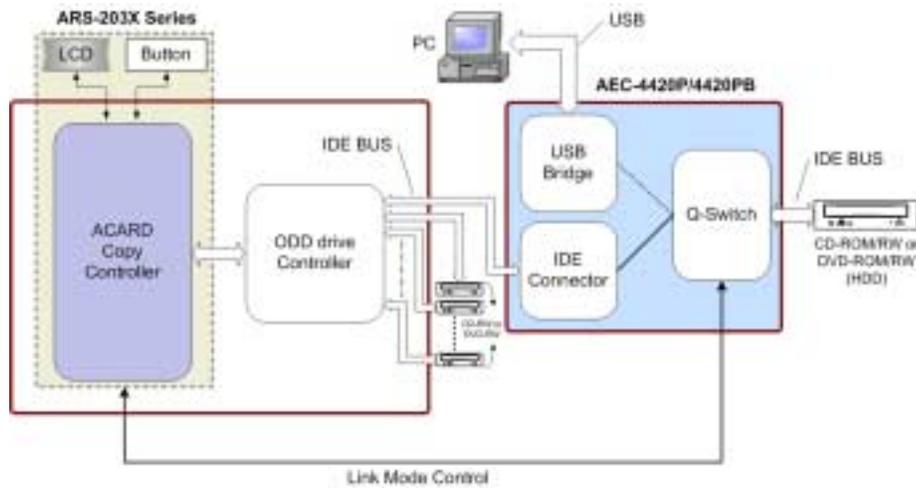


The floor plan of 4420PB



The USB extend board and floor plan of 4420DX

## 5 Function



As indicated above, AEC-4420P/4420PB is connected to an ACARD copy controller via link mode control. Generally, when the copy controller is standalone, Q-Switch is connected to IDE connector. But when the copy controller is to be link host, Q-Switch will be switched to USB Bridge through link mode control, and thus 4420P/4420PB will be connected to PC. In link host mode, the device that PC controls is either a CD/DVD writer or a hard drive connected to the IDE bus on Q-Switch.



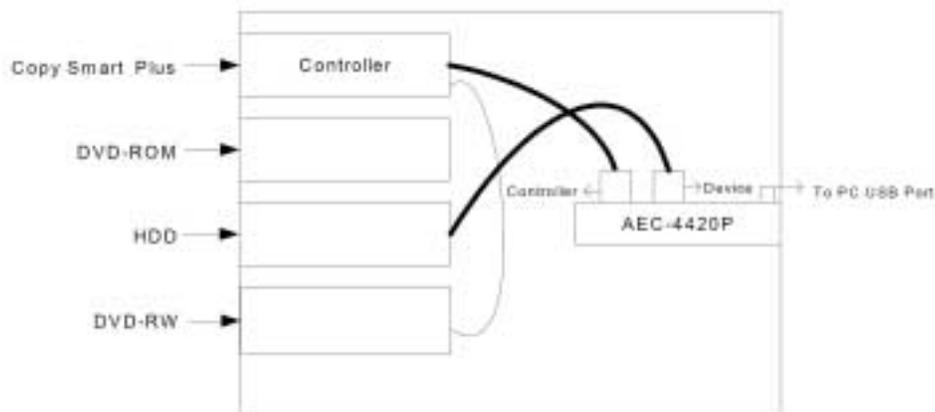
After connection and linking to the computer, you can press ESC on the copy controller's panel for 2 seconds, enter Function 12. Adv Setup, and select Switch USB Mode. Press ENT to see **"USB L.H Mode"** display on the LCD. You can also click "My Computer" to check if there is a new DVD writer appearing. Now you may use some recording software like ACARD Ha! DVD Burner to copy.

If you want to stop linking host, you can press ▲ on the copy controller's panel and see **"Back to SA-Mode? Yes"** display on the LCD. Press ENT to return to standalone mode.

Visit ACARD's Web site for the compatibility list of writers.

## **7 Connect 4420P to HDD**

The picture below shows the connection of 4420P with a hard drive. It is similar to the connection of 4420P with a writer. When the copy controller is in link host mode, the data stored in PC can be transferred to the hard drive on the copy controller in the form of image files. After transfer, the copy controller can be switched back to standalone for data recording. See page 15 for the connection of the 2-pin signal line.



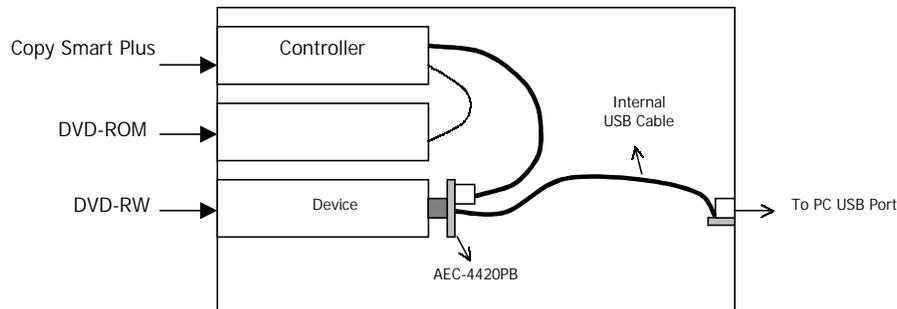
After connection and linking to the computer, once the copy controller detects the hard drive, it will ask if you want to format. Then, you can press ESC on the copy controller's panel for 2 seconds, enter Function 12. Adv Setup, and select Switch USB Mode. Press ENT to see "USB L.H Mode" display on the LCD. You can also click "My Computer" to check if there is a hard drive appearing.

Connection with a hard drive means transmitting those image files stored in the system's hard drive to the newly connected hard drive via the software Image Manager, and then copying the files to the target writer. See Part 10.

Visit ACARD's Web site for the compatibility list of hard drives.

## 8 Connect 4420PB to Writer

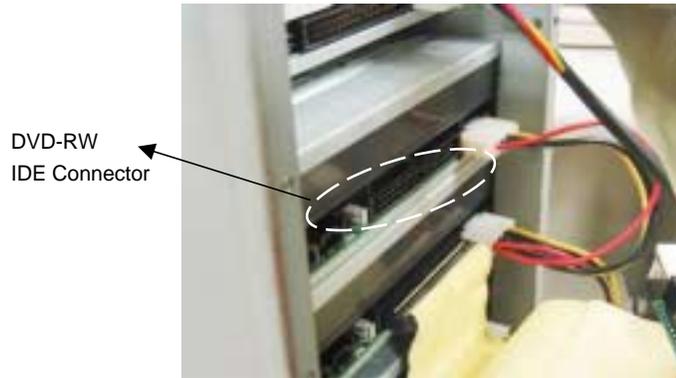
The picture below shows the connection of 4420PB with a writer. 4420PB cannot connect with a hard drive. Its function is the same as that of 4420P. See page 15 for the connection of the 2-pin signal line.



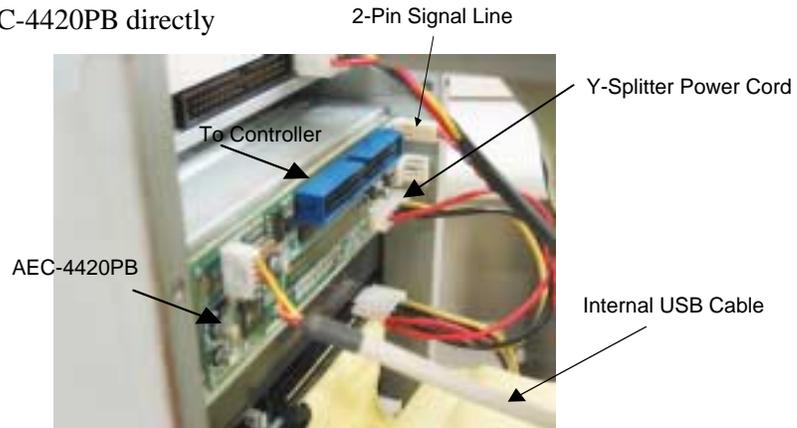
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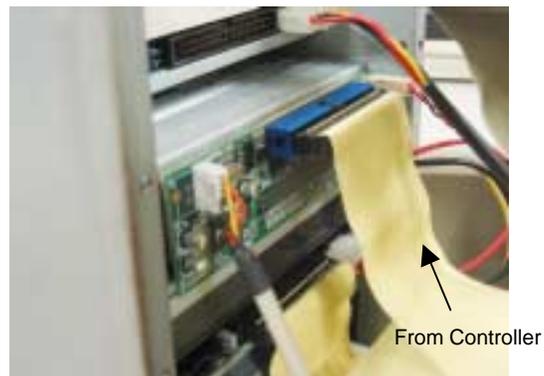
### 1. Find the IDE connector



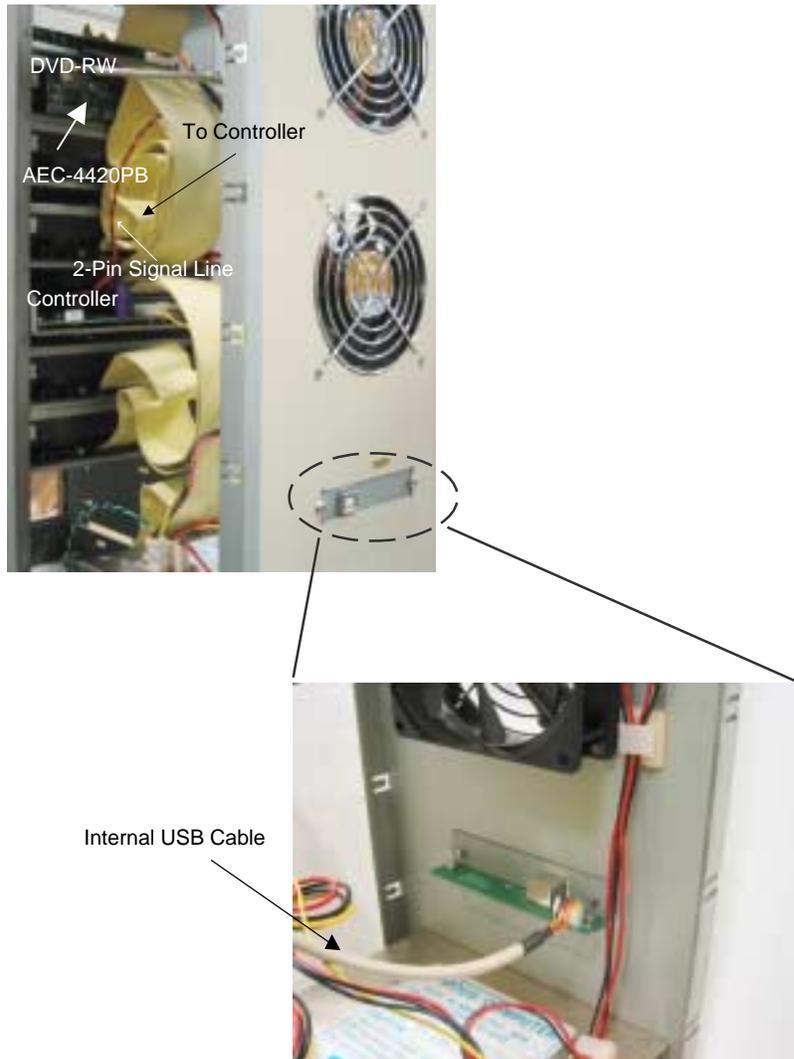
### 2. Inset AEC-4420PB directly



### 3. Connect the IDE cable that links with 4420PB



The actual connection



## 9 Connect to the Signal Line

See page 15 for the connection of the 2-pin signal line.

## 10 Image Manager

Install the software Image Manager that is in the support CD. Image Manager helps you manage those image files transmitted from PC to the hard drive connected with AEC-4420P.

In Windows Vista when using Image Manager, both 32-bit and 64-bit versions, you have to turn off UAC at first. The steps are described as follows:

- a. Click "Control Panel".
- b. Click "User Accounts".
- c. Click "Turn User Account Control On or Off".
- d. Uncheck "Use User Account Control (UAC) to help protect your computer".
- e. Power up the PC again.

Thus, you can use Image Manager normally.



Now use Image Manager according to the following steps.

- (1) Click the icon of the last host card to see the newly connected hard drive. The last host card has no title, but it represents AEC-4420P.

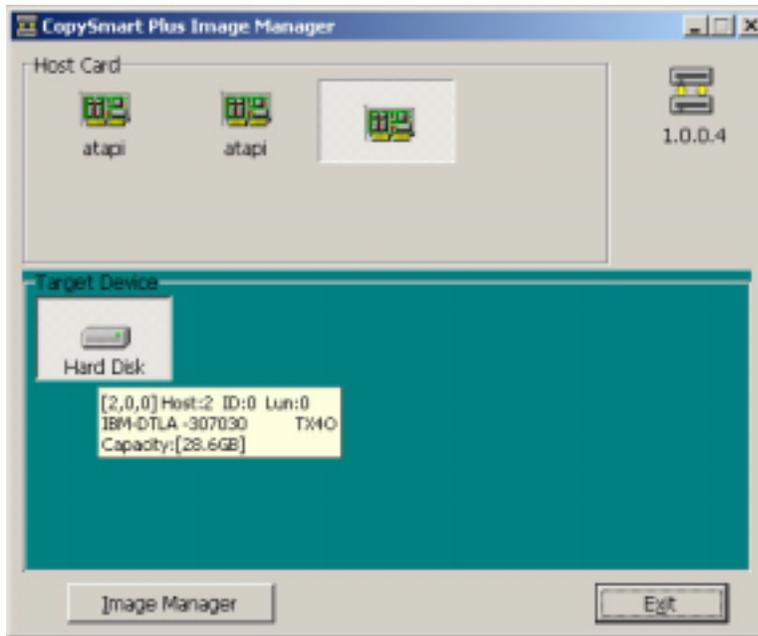


Figure 1

- (2) On Figure 1 move the cursor to the hard drive to see its capacity and so on. Now click [Image Manager] to enter Figure 2.

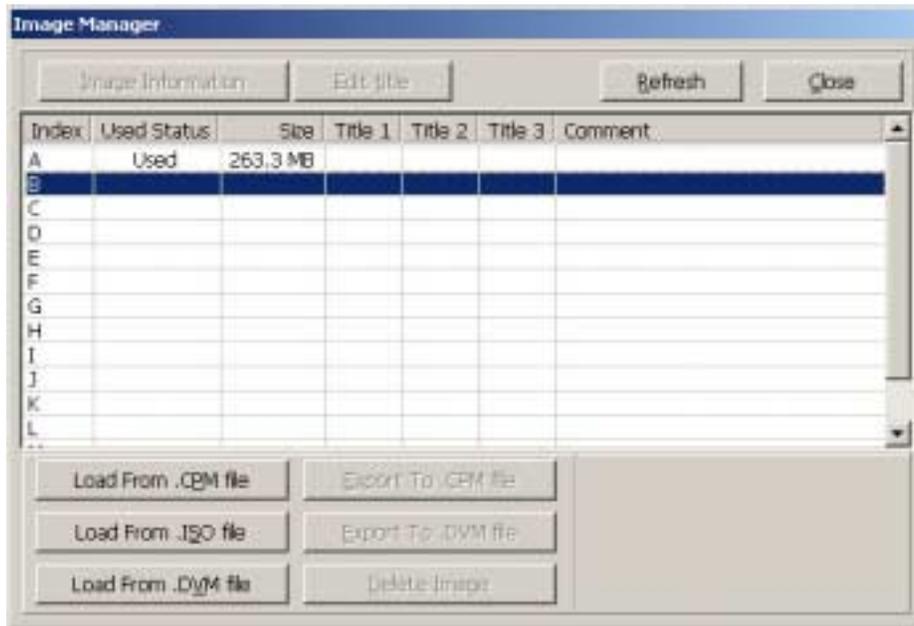


Figure 2

- (3) On Figure 2 choose a partition of the hard drive like B where you want to put the image file transmitted from the system's hard drive. And also choose the form of the file such as .CPM, .ISO or .DVM.
- (4) Now suppose you want to choose an image file of 1.ISO and click [Open].

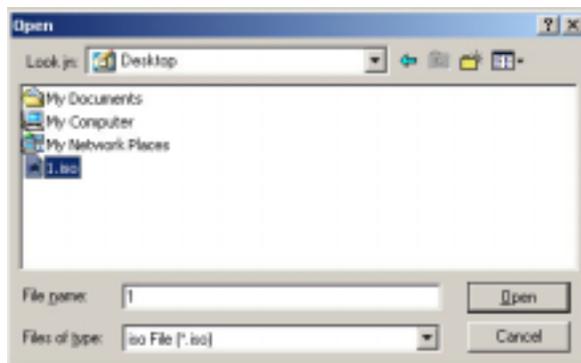


Figure 3

(5) After opening the file, you will enter Figure 4 and see the information.

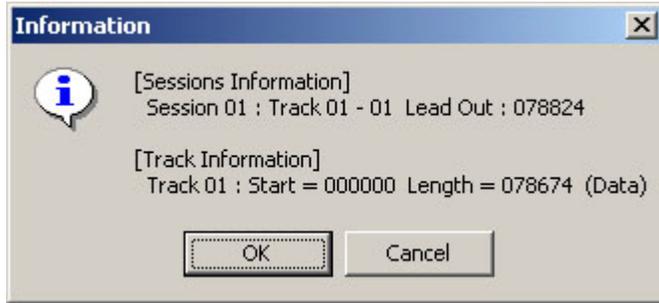


Figure 4

(6) Click [OK] to transmit the image file as Figure 5 shows.

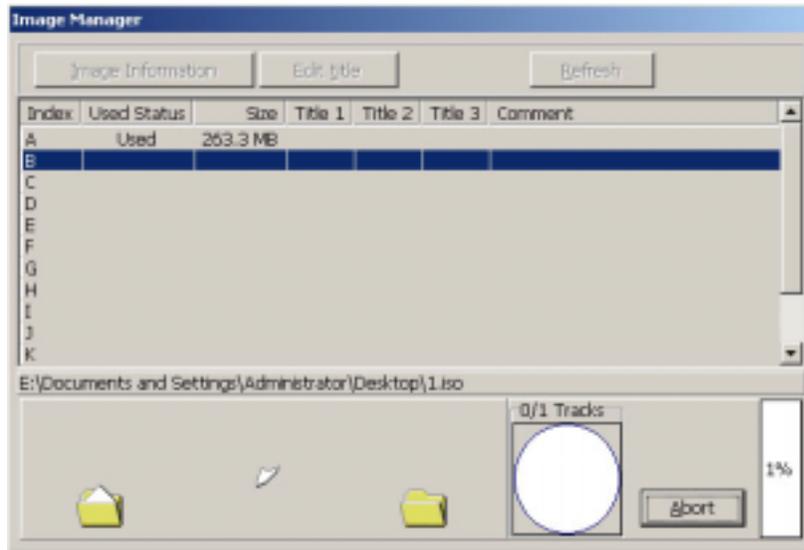


Figure 5

(7) After transmission, if it is successful, there will be a message showing so.

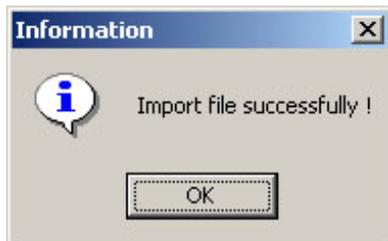


Figure 6

(8) You can see the newly transmitted file appear in partition B as Figure 7 shows.

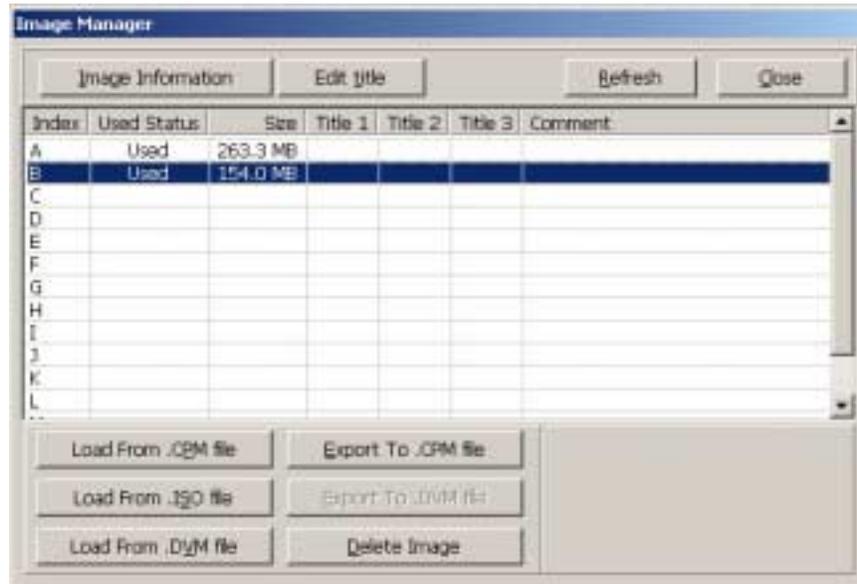


Figure 7

(9) On Figure 7 click [Image Information] to see the file's information as Figure 8 shows.

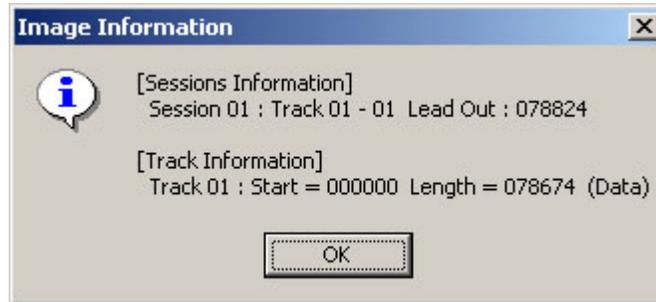


Figure 8

- (10) On Figure 8 click [OK] to return to Figure 7. Then click [Edit title] to edit the title of the file. You can edit three titles at most, and decide whether to give a comment or not.

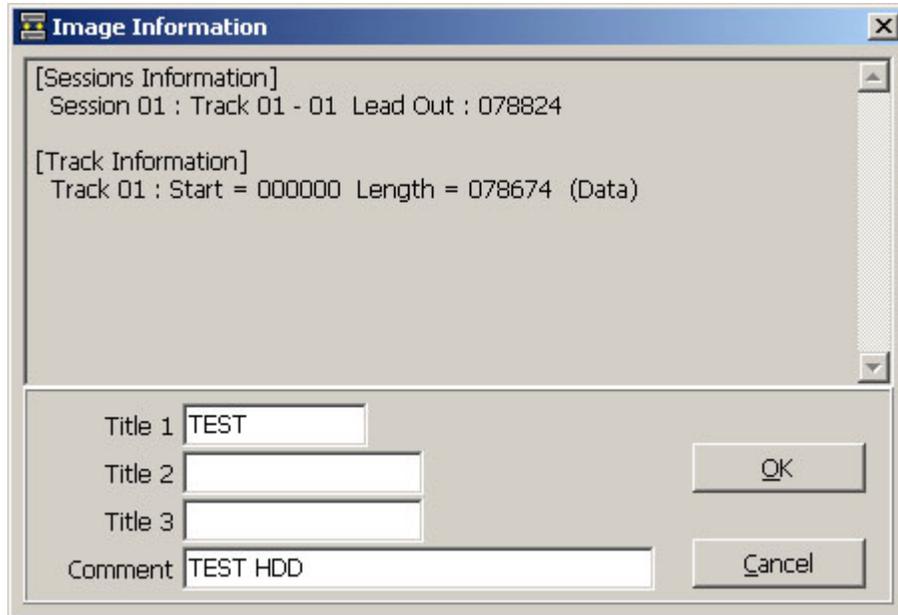


Figure 9

(11) After editing and clicking [OK], you will enter Figure 10.

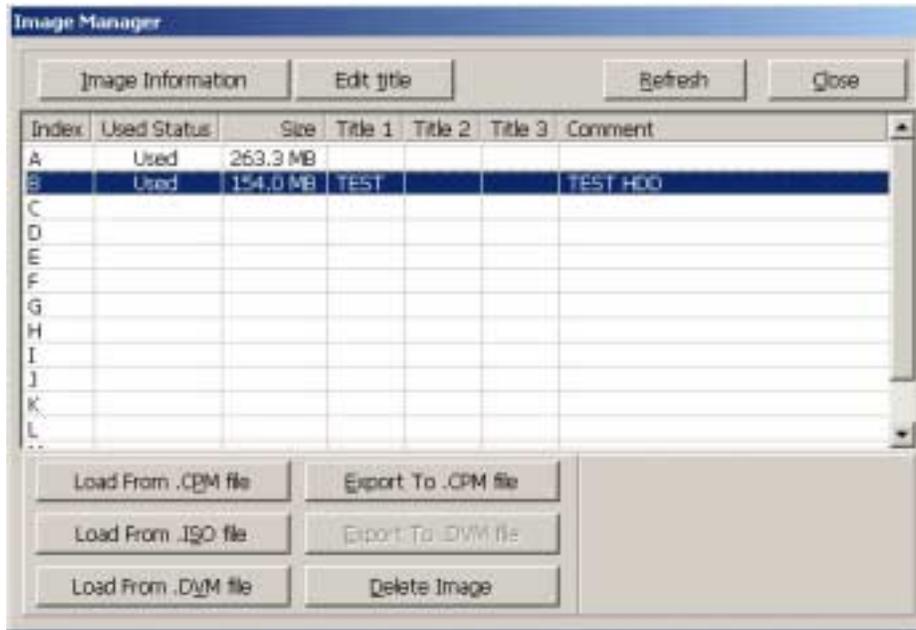


Figure 10

(12) Close the small green icon of Image Manager at the right down corner by right-clicking. The purpose is letting PC detect the connected hard drive again when you want to transmit an image file next time.

Now press ▲ on the copy controller's panel and see **“Back to SA-Mode? Yes”** display on the LCD. Press ENT to return to standalone mode. After turning on the copy controller again, choose 8. Select Source, and then HDD.

## Appendix B LCD Messages

### 1. Normal Conditions:

<b>Initialize SDRAM</b> .....	Initialize the memory of the system.
<b>Detect Drives</b> .....	Detect what drives are connected with the system.
<b>User Abort!</b> .....	Cancel the job during operation.
<b>Analyzing</b> .....	Analyze the source disc.
<b>Source Drive Not Ready</b> .....	Source drive is not ready to read.
<b>Target Drive Not Ready</b> .....	Target drive is not ready to write.
<b>Source Disc Not Ready</b> .....	Source disc is not ready to be read.
<b>Target Disc Not Ready</b> .....	Target disc is not ready to be written into.
<b>Erasing disc</b> .....	The system is erasing the data on the disc.
<b>Fail to get Drive Info!</b> .....	The drive information cannot be obtained.
<b>Fail to get Src Disc Info!</b> .....	The information of source disc cannot be obtained.
<b>Save new config Fail!</b> .....	The new setting of configuration cannot be saved.
<b>Load Default Config?</b> .....	Do you want to load the default settings?
<b>Src&amp;Tgt can't in the same channel</b> .....	During comparison the source and target discs cannot be in the same channel.
<b>Preparing</b> .....	The system is preparing to record.
<b>Check Target Please Wait</b> .....	The system is checking the target device.
<b>Audio Disc!!! Can't compare!</b> .....	The system cannot compare the audio discs.
<b>Identical</b> .....	The comparison results are the same.
<b>Read disc error</b> .....	During comparison the disc cannot be read.
<b>Cannot read TOC</b> .....	The system cannot read the contents of disc.
<b>TOC not match</b> .....	The comparison results are not the same.
<b>Source Disc Empty!!!</b> .....	The source disc doesn't contain any data.
<b>Target overflow</b> .....	The target disc hasn't enough capacity to store new data.
<b>Target Disc Not Empty!!!</b> .....	The target disc still has data.

**Press a Key to Eject Good Disc...** Press any key to eject the good disc after copying  
**Press a Key to Eject Fail Disc.....** Press any key to eject the failed disc after copying.  
**CD-RW does not Support the Func.....** CD-RW doesn't support this function.  
**Hold ESC to exit.....** Press **ESC** for a second to terminate the test.  
**All data will be lost, erase?.....** All data on the disc will be lost. Confirm the erasing of data.  
**Erase Finished.....** The erasing of data comes to an end.  
**No Erasable Disc in CD-RW!!.....** The disc on the CD-RW device is not rewritable.

## 2. Connecting with a HDD:

**HDD not Format!.....** The hard disk hasn't been formatted yet.  
**Format HDD?.....** Ask if you want to format the hard disk.  
**All data will be lost, format?.....** All data on the hard disk will be lost. Confirm the formatting of hard disk.  
**Format HDD OK! .....** The Formatting of hard disk has been completed.  
**Image load OK.....** The image is successfully loaded from CD to the hard disk.  
**Image load Fail.....** The image isn't successfully loaded from CD to the hard disk.  
**HDD too small to handle image!.....** The hard disk hasn't enough capacity to store the data image (at least 5Gbytes).  
**No Valid HDD!.....** The system cannot find a hard disk.  
**HDD too small .....** The capacity of hard disk is too small.  
**No Image in Partition xx.....** There is no data image in partition xx.  
**Image Exists Overwrite?.....** There is a data image in the current partition. Confirm the overwriting of data.  
**Delete Image in Partition xx?....** Confirm the deleting of data image in partition xx.  
**Partition Damage.....** The partition is damaged.  
**Verify Disk or Partition?.....** Do you want to verify the hard disk or just a partition?

**Verify Hard Disk OK!**..... The hard disk is verified successfully.  
**Verify Hard Disk Fail!**..... The hard disk is not verified successfully.  
**Verify Partition Header!**..... Verify the partition header.  
**Select HD First!**..... Select a formatted hard disk at first.

### 3. Audio Editing:

**Erase selected Tracks?**..... Abort the selected tracks and delete them.  
**End edit disc and burn?** ..... Finish the music disc editing and start to copy.  
**Continue edit next Disc?**..... Ask if you want to continue the music disc editing.  
**Target Overflow Re-Select**..... The disc capacity is not enough to store the selected tracks. Please select again.  
**Close all disc's session?**..... Confirm the closing of disc sessions.  
**Can't edit HDD**..... The hard disk cannot be edited as a source audio disc.  
**NO AUDIO track in this disc**..... The source disc has no audio track.  
**Insert next disc**..... Insert the next audio disc.  
**Sessions were closed already!** ..... The disc sessions have already been closed.  
**Burn or Move to partition?** ..... Do you want to directly copy the data into disc or move them to the partition.  
**Tgt overflow, del last trk?**..... The disc capacity is not enough to store the selected tracks. So, do you want to delete the last track?  
**Ins empty disc Continue?..** Do you want to insert a blank disc and continue copying?

### 4. Firmware Update:

**Invalid firmware** ..... The disc doesn't contain a valid firmware.  
**Updating F/W**.....The system is updating the firmware.  
**Update F/W xxx to yyy?**..... Do you want to update the firmware version from xxx to yyy?  
**Searching F/W** ..... The system is searching for a valid firmware.

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**Check Sum Error!**..... The updated firmware has errors.  
**Source can't be Hard Disk!**.....During comparison the source cannot be hard disk.  
**Last update F/W OK!**..... The firmware is updated successfully.  
**Last update F/W Fail!**..... The firmware is not updated successfully.  
**Flash ROM fail!**..... Data cannot be written into Flash ROM.

