Chenbro

ES340
Chassis
User Manual

Copyright

Technical Support

Chenbro works hard to offer our customers maximum performance from our chassis. But in case you have any problem with our product you can find supports from the following resources.

Web Support

Detail information of our products is in our website. You can find technical updates, installation guides, FAQs, Technical specifications and more. Our web address is: www.chenbro.com.

Email Support

You can also fill out the technical support form at our Technical Support page. You technical issue inquiries will be sent directly to our support professionals.

Phone Support

You can also contact Chenbro HQ or branch office for immediate support; contact Information is as following:

Chenbro HQ
Tel: 886-2-8226-5500
Fax: 886-2-8226-5423

Chenbro Europe B.V.
Tel: 31-40-295-2045
Fax: 31-40-295-2044

Chenbro Beijing
Tel: 86-10-8274-3036~ 39
Fax: 8610-8274-3035

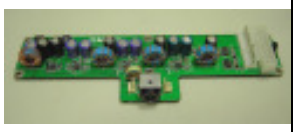
Chenbro Micom (USA) Inc.
Tel: 1-909-947-3200
Fax : 1-909-947-4300

Preliminary Edition Aug 2007

Content

Packing List

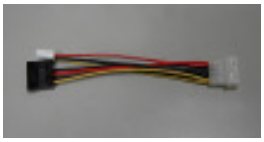
- ES340 chassis

			
70mm fans (2)	SATA2/SAS Backplane (2)	Shield USB 2.0 Cables (1)	SATA 7-pin Cable, 260mm (2)
			
Power Distribution Board (1)	Hot-swap HDD Carrier (4)	Slim-CDROM Carrier (1)	SATA 7-pin Cable, 360mm (2)
			
Intrusion Switch (1)	Split Power Cable, Type-II (1)	Split Power Cable, Type-II (1)	Split Power Cable, Type-II (1)

- Power adaptor kit

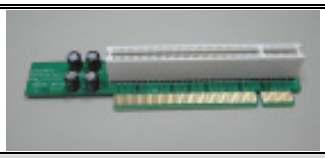
	
120W Power Adaptor (1)	Power Cord (1)

- ***Accessory pack***

			
Cable Tie (1)	***Screw Pack for MB (1)***	***Slim ODD Adaptor (1)***	***Front Bezel Key (1)***
			
Power Cable, Big 4P to Small 4P (1)	***Screw Pack for HDD (1)***	***Active Heatsink for AMD/Intel LV CPU (1)***	***PCI Add-on Card Bracket (1)***

Optional Kits

There are optional kits for different purposes, please contact our sales for more information and availability.

	
PCI 32-bit Riser Card (1)	***4-in-1 Card Reader (1)***

Features

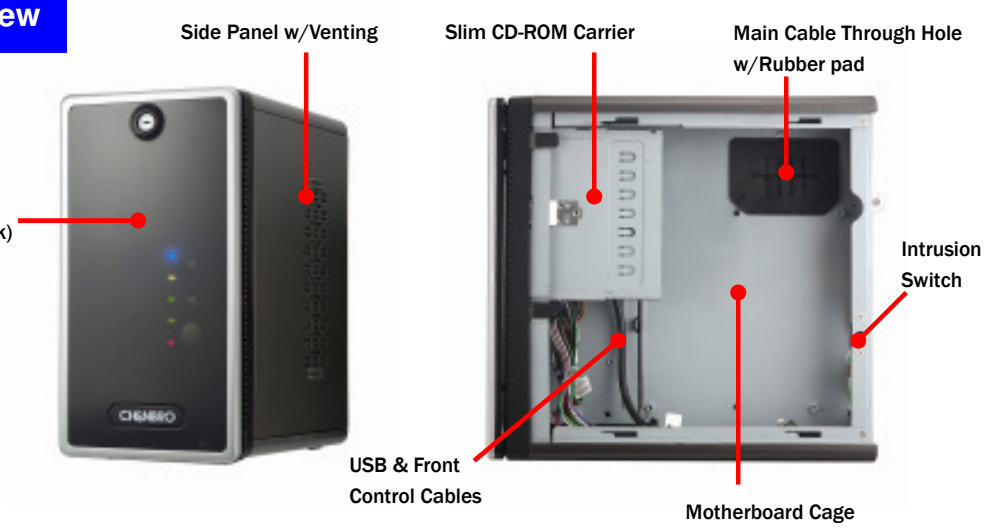
- **Silver-gray powder coating combined with simple lining**
- **Ideal for high storage capacity (Hot-swap HDDs) with RAID-5 functionality**
- **Available for multi-media platform**
- **9.5 liters small form factor with Mini-ITX M/B**
- **Removable M/B carrier for excellent thermal performance & easy cabling**
- **External adapter reduces noise level**
- **Optional remote control & riser card**

Technical Specifications

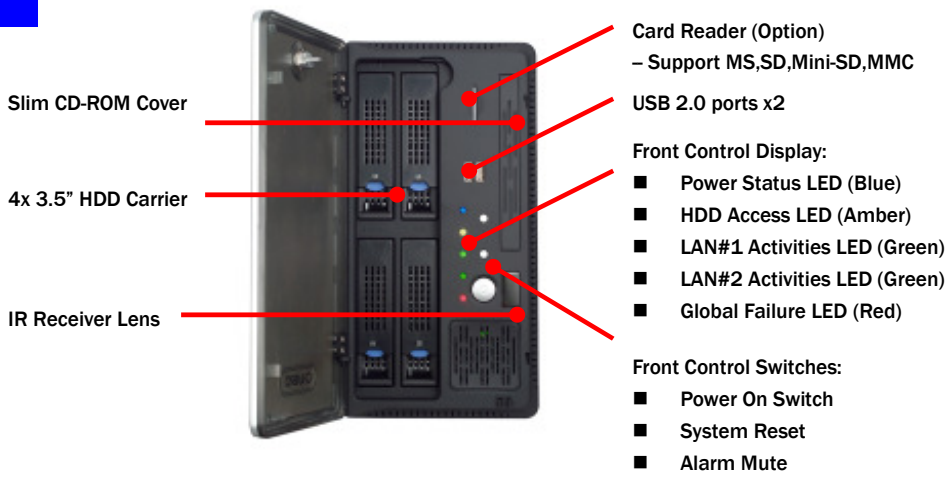
Model Name	◆ES340			
M/B Form Factor	◆Mini-ITX, Mini-DTX			
Dimension (DxWxH)	◆260mm x140mm x260mm ◆10.24" x 5.51" x 10.24"			
Drive Bay	◆Hot-swap: 3.5" x 4 ◆Internal: 2.5" x 1 ◆Slim ODD: 1			
PSU	◆Form Factor: External Adapter			
Indicator	◆Power, HDD Activity, 2 x LAN, Fault			
Front Control	◆Power, Reset, 2 x USB 2.0			
Front Access	◆2 x USB 2.0, ◆SD/Mini-SD/MMC/MS Card Reader (Optional)			
Security	◆Kensington Lock Supported, Padlock Loop			
Cooling Fan	◆Front: 60mm (Optional) ◆Rear: 2 x 70mm			
Slot Opening	◆1 x Low Profile (Optional)			
Material	◆SECC			
Plastic Material Type	◆ABS-HB			
Sheet Metal Thickness	◆0.8mm			
Net Weight	◆4.5 Kgs			
Gross Weight	◆7.0 Kgs			
Backplane	◆SATA2/SAS			
Container Info.		20'	40'	40'H
	◆Single Packing	560	1160	1305
	◆Bulk Packing + Pallet	X	X	X

Opening the Chassis

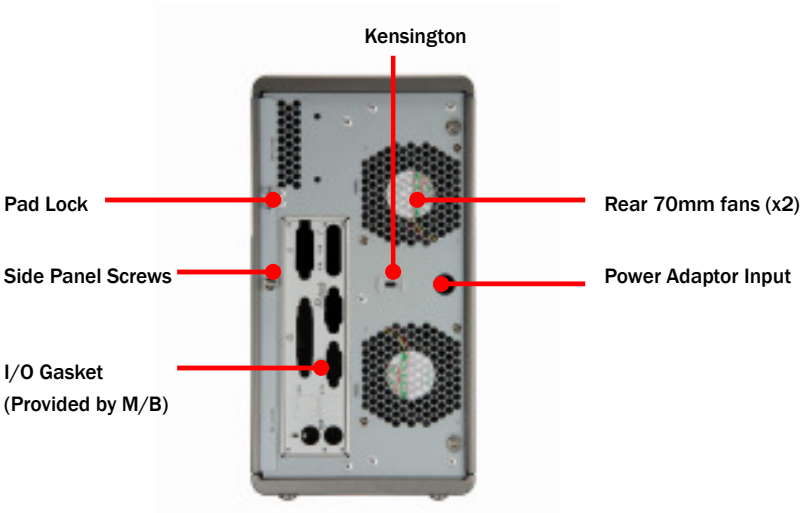
Overview



Front



Back



To open the chassis for assembly of internal parts, users need to:

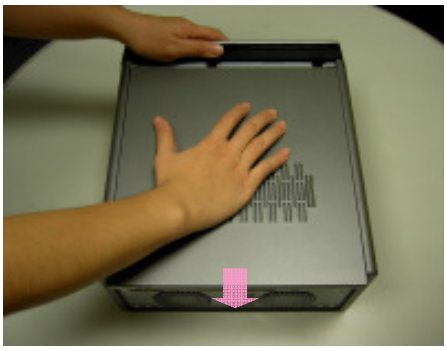
- Remove the side panel
- Remove the front bezel

To remove the side panel:

1

■ Release the side panel thumb screw on the rear

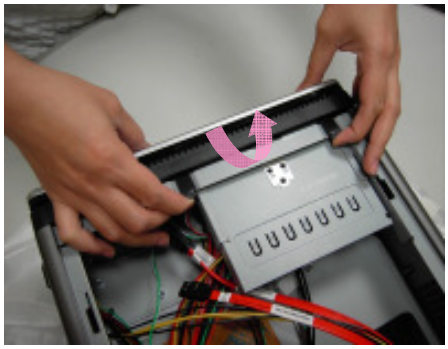
2



■ Push and slide the side panel toward rear to open the chassis

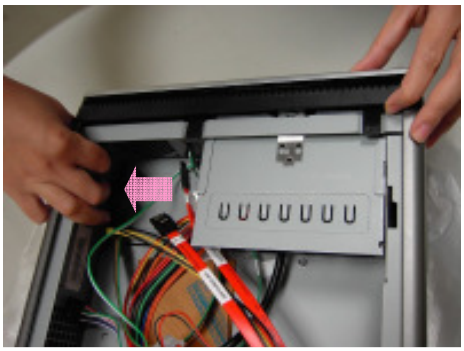
To remove the front bezel:

1



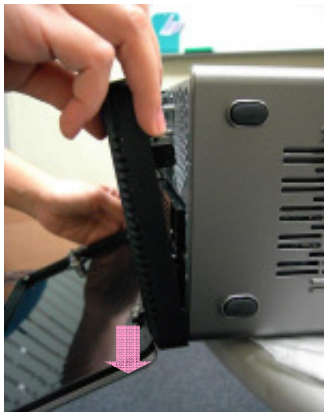
■ Lift up the latch along the side to detach the bezel

2



■ Detach the bezel from Slim ODD side gently

3



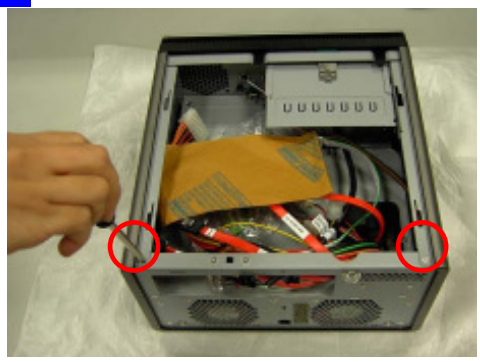
■ Angle the latch until it is 15 degree away from the chassis

4

■ gently pull the bezel to make it detach

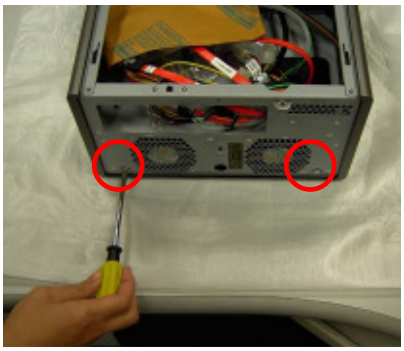
To remove the M/B cage:

1



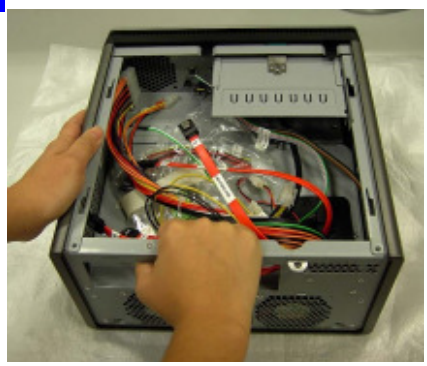
■ Release the secure screws on the M/B cage

2



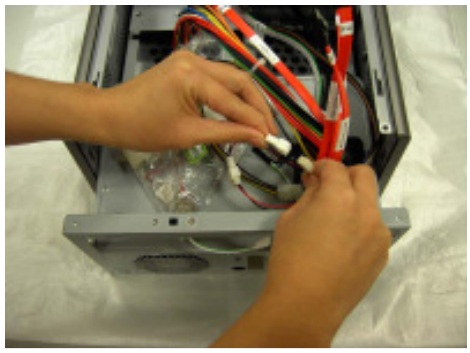
■ Release the two screws around the rear fans

3



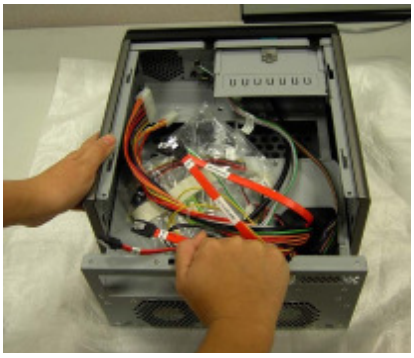
■ Remove the motherboard cage

4



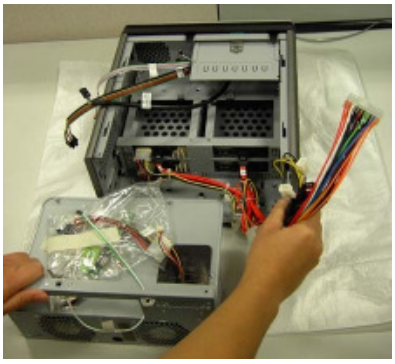
■ Disconnect the extension fan cables

5



■ Detach the motherboard cage with System Cables (SATA, Power, Fan cables) through the cable routing hole

6



■ Finish detaching the M/B cage and make sure all the connection on backplane and PDB are still tight before assembly back the M/B cage

Installing Devices:

There are other optional devices for ES340, including:

- ***Mini-ITX or Mini-DTX***
- ***Slim Optical Drive***
- ***Standard SATA2 Hard Drive***
- ***4-in-1 Mini Card Reader (Optional)***
- ***Dedicated Universal Heatsink for AMD/Intel CPU***

Installing Mini-ITX or Mini-DTX M/B:

1

■ Attach the motherboard I/O gasket (provided by M/B)

2

■ Attach screws to fix the motherboard.

Installing Slim Optical Drive:

Before install the slim CD-ROM, the front bezel must be removed. And the slim CD-ROM carrier should be apart from the chassis.

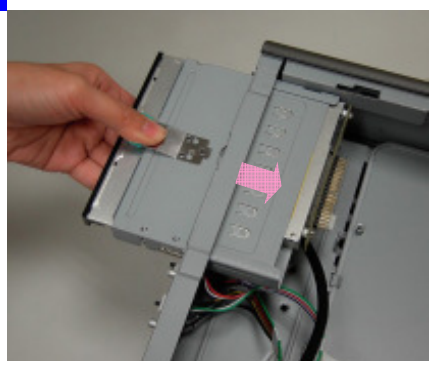
1

■ Assemble the Slim CD-ROM adapter with attached screws to the Slim CD-ROM

2

■ Make sure the Slim CD-ROM is fully seated with holder clip on the side.

3



■ Slide in the assembled CD-ROM into the chassis

4

■ Make sure the holder latch is secured when fully seated

Installing 3.5" SATA2 Hard Drive:

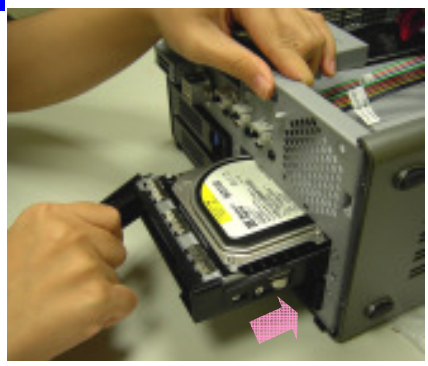
1

■ Remove the HDD Carrier from the chassis and place the SATA2 HDD into it.

2

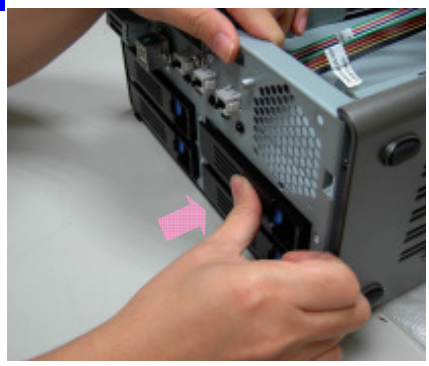
■ Attach the HDD screws on both sides

3



■ Slide in the assembled HDD into the chassis, suggest install by the ID definition on the front panel (No need to remove the front bezel)

4



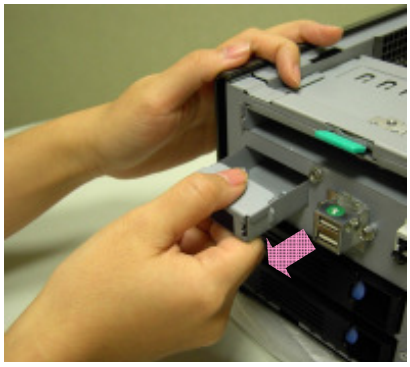
■ Make sure the carrier is fully seated

Installing Card Reader (optional):

1

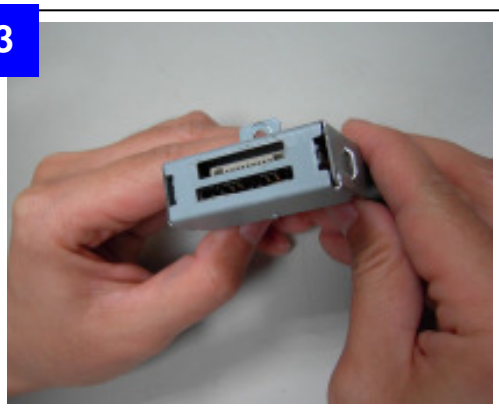
■ Detached the front screw of Card Reader holder

2



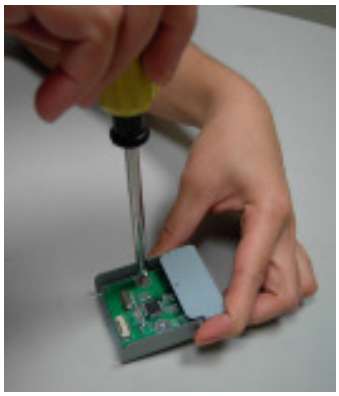
■ Pull out the Card Reader holder

3



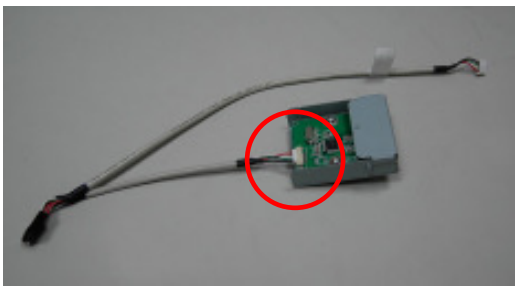
■ Remove the seal on the holder and make sure the sockets is right to the opening

4



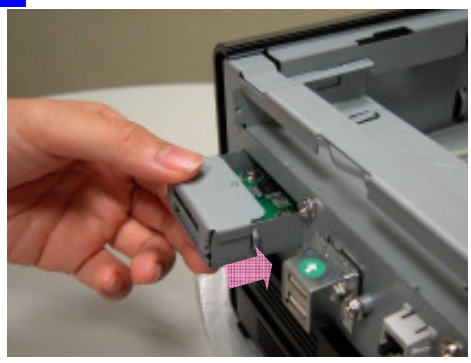
■ Attach screws to fix the Card Reader

5



■ Connect the short end of USB split cable to Card Reader with

6

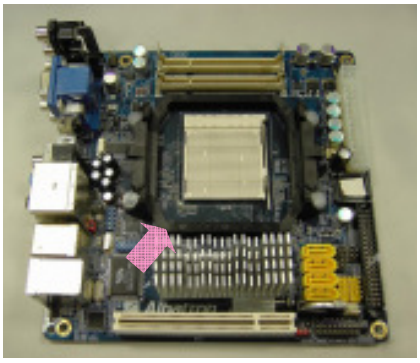


■ Install the assembled Card Reader back to the chassis with attach screw

Installing Dedicated AMD/Intel Heatsink:

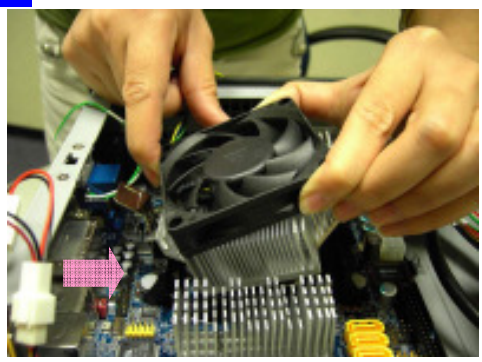
The Chenbro heatsink for ES340 is designed specifically to support Intel and AMD desktop LV (Low Voltage) CPU in universally. Note the CPU power rating should not over 65W as maximum.

1



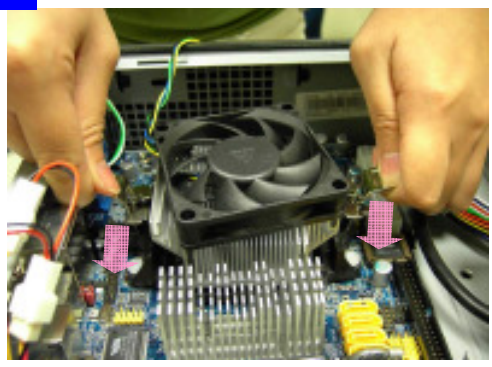
■ Attach the heatsink retainer on to M/B before install M/B into the chassis (Note: AMD M/B are preinstalled it)

2



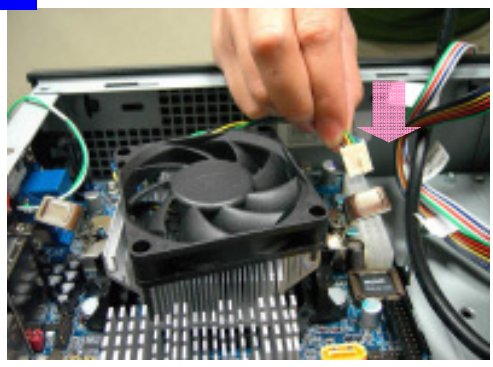
■ After installing CPU with heat spread, gently clip the heatsink with metal clipper in one end.

3



■ Secure the heatsink clipper in other end

4



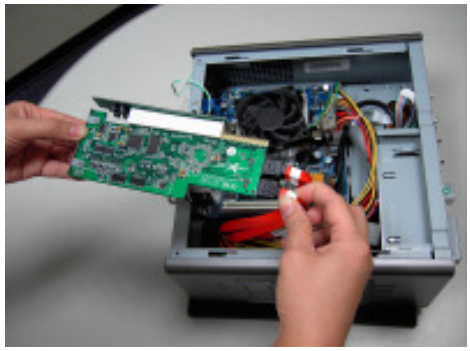
■ Connect the heatsink fan to the M/B

Installing Riser Card (optional):

1

■ The PCI card mounting bracket must be detach and use special one for mounting, (Ex. PCI RAID card)

2



■ Connect the cables before install.

3

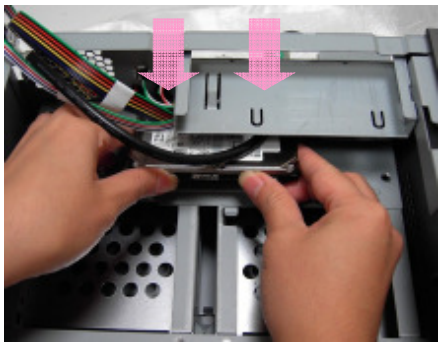
■ Gently install the PCI card with riser into the slot. (Please pay attention to the cable arrangement)

4

■ Attach screws on the rear side to secure the PCI card

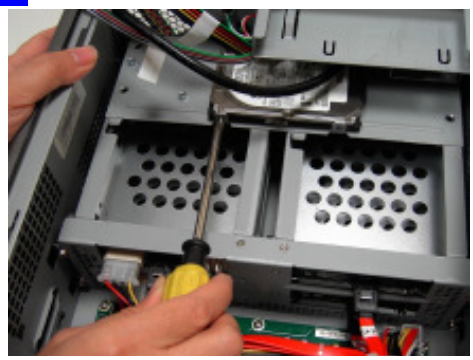
Installing 2.5" HDD:

1



■ Place the 2.5" HDD underneath the Slim ODD

2



■ Fix the 2.5" HDD with attached screws

Note: (1) To install 2.5" HDD, the M/B cage is required to disassemble.

(2) IDE cable adaptor is required to connect 2.5" IDE HDD to the M/B.

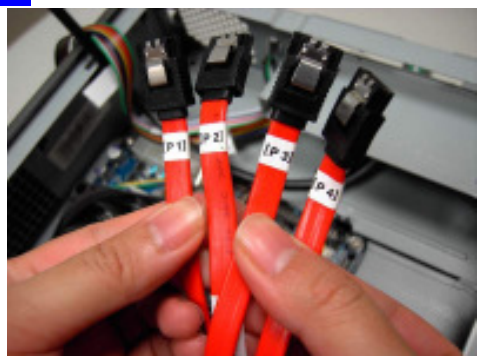
Connecting Devices:

ES340 is pre-installed with several cables inside as factory default, which includes:

- ***SATA2 cable for Hot-swap hard drive***
- ***Power cable for M/B***
- ***Front panel I/O cables***
  - ***USB 2.0 cable***
  - ***4-in-1 card reader (optional)***

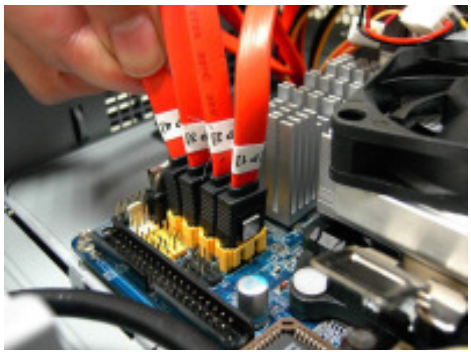
To connect SATA2 Hot-swap hard drive:

1



■ Check the bundled cable with number tag

2



■ Connect the SATA cables to the M/B properly

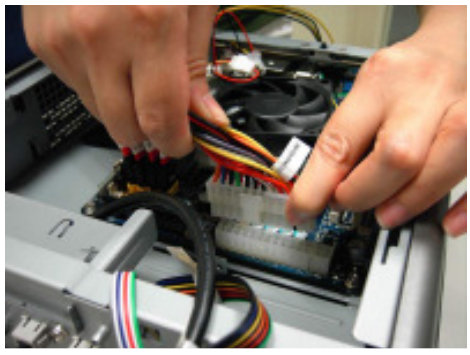
Note: If there is not enough SATA ports from M/B, users can either remove or keep the bundled P3/P4 SATA cable.

To connect the power:

1

■ The DC harness comes with 20+4 pin as main connection for different M/B requirement.

2

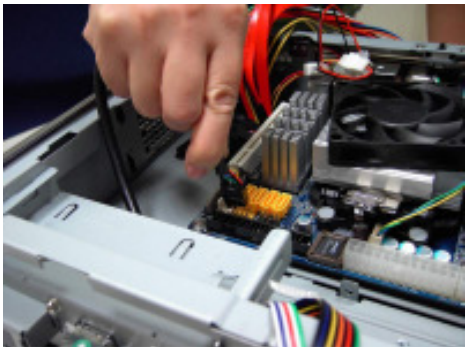


■ Install and secure the DC harness cable to the M/B properly

To connect front panel I/O and LEDs:

a. USB 2.0 cable connection

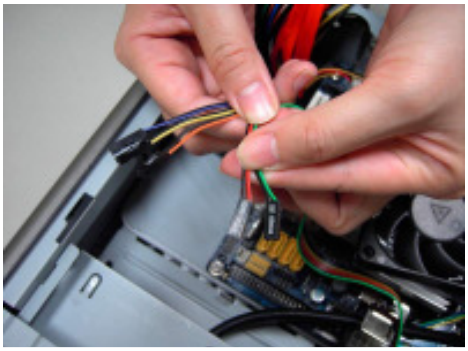
1



■ Front USB cable should be connected to on-board USB header properly depends on different M/B.

b. Front display cable connection

1



■ The display fan-out cable with different connection for: Power on, HDD, LAN, FAIL and the front switch

2

■ Connect to the M/B according to the M/B pin header definition properly.

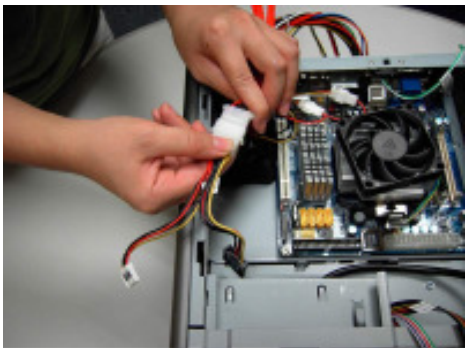
c. Card reader cable connection *(optional)*

1

■ After installing the assembled Card Reader, the shorter USB cable should be connected to the M/B

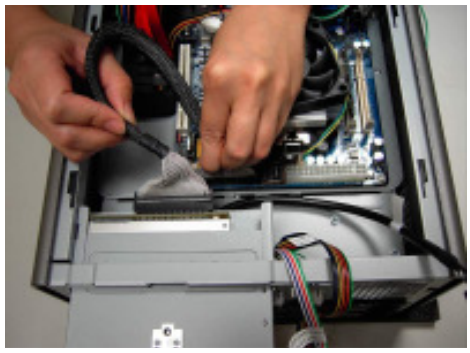
d. Slim ODD cable connection *(optional)*

1



■ Use power split cable in accessory pack for conversion of DC harness, small 4P is connected to the Slim ODD adaptor board

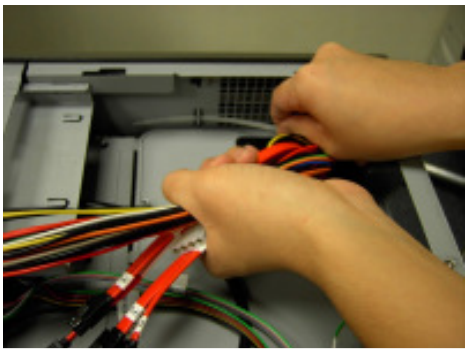
2



■ Use either standard IDE cable from 3rd party M/B, or use optional cable from Chenbro to connect to the Slim ODD adaptor board

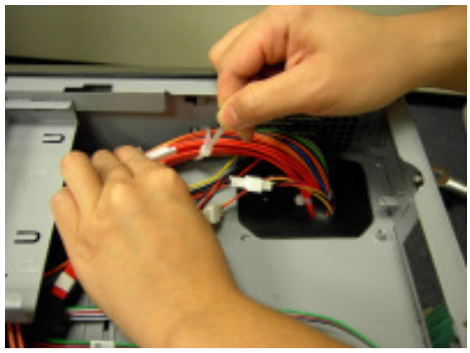
e. Cable management

1



■ Due to limited space inside the chassis, make sure all cable are connected properly and use the cable tie through the bridge land on side wall

2



■ Tie up the cable so the cables are fixed in certain space.

Power Adaptor and Backplane

Power Adaptor Specification:

For electrical specification:

Input Characteristics		Output Characteristics	
Item	**Spec**	**Item**	**Spec**
Rated Input Voltage	*100V / 240V*	*Output Raged Voltage*	*19V*
Input Voltage Range	*90VAC to 264VAC*	*Output Current*	*6.32A*
Input Frequency Range	*47Hz to 63Hz*	*Output Voltage Setting*	*18.05V~19.95V*
Efficiency	*86%*		

In regards of the protection characteristics, this power adaptor will act as power shut-down automatically base on:

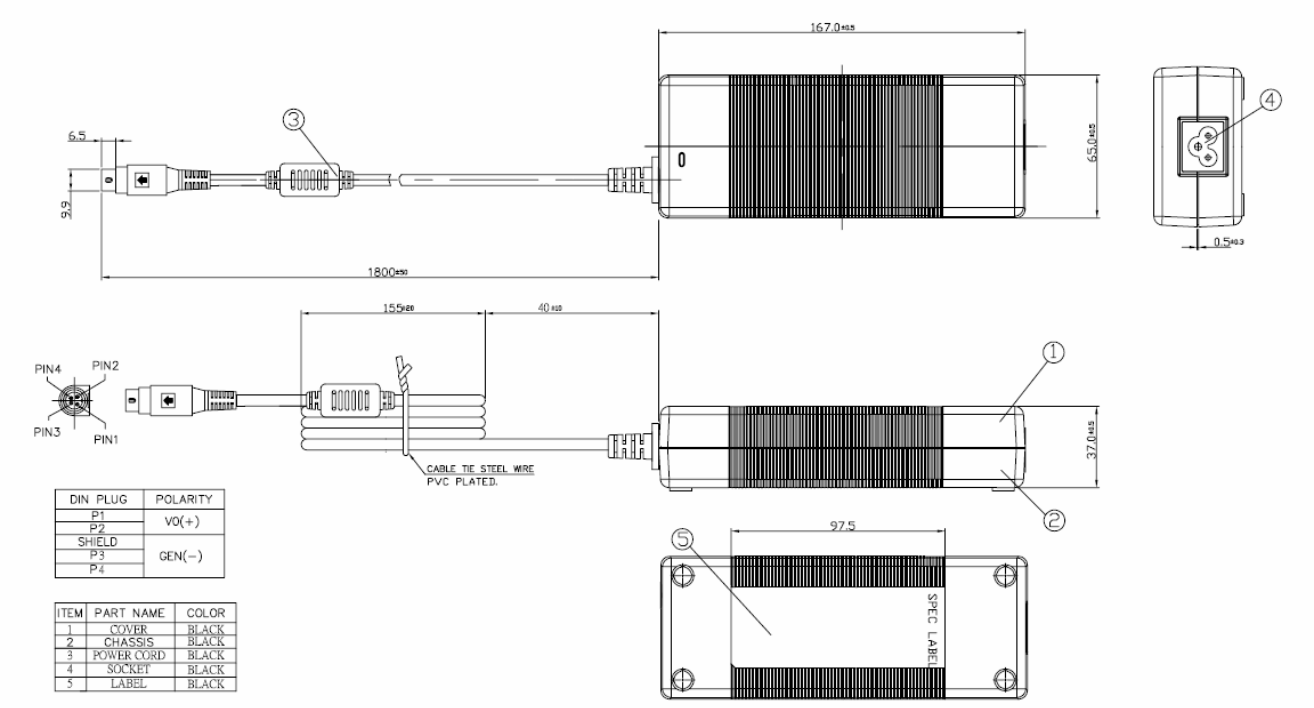
- ***Over Current Protection***
- ***Over Voltage Protection***
- ***Over Temperature Protection***

For the environment operation:

- ***Temperature: 0 ~ 40 degC @ Operating and -20 ~ +80 @ Storage***
- ***Humidity: 20% ~ 80% @ Operating and 10% ~ 90% @ Storage***
- ***MTBF: > 100,000 hrs***

Mechanical characteristics:

- ***Dimension: 167mm * 65mm * 37mm***
- ***Input AC socket type:***
- ***Output DC cable length: 14#AWG, L=1.8m***



Power Distribution Board:

The PDB (Power Distribution Board) inside the ES340 is a specific DC to DC adaptor, which only provides the converting from DC19V to multiple voltages include +5V, +3.3V and +12V for all the devices and boards usage scale up to 180W Power Adaptor. As the warning message on the back side, any improper 3rd party Power Adaptor may cause damage to the PDB or internal components.

Connection of DC harness:

1

■ When doing the PDB maintenance, please make sure the cables are plugged properly

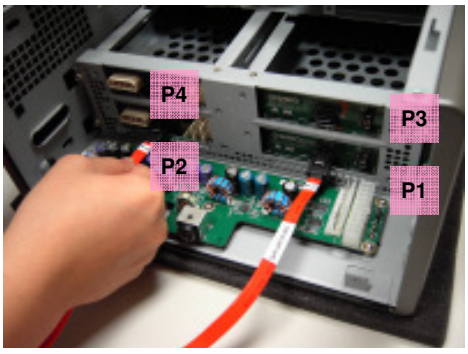
2

■ The single ATX 20-pin connector should be connected to PDB, another side with split 20+4 pin are for M/B.

Note: Do not plug the DC cable in reverse direction, it will cause serious system and power adaptor damage

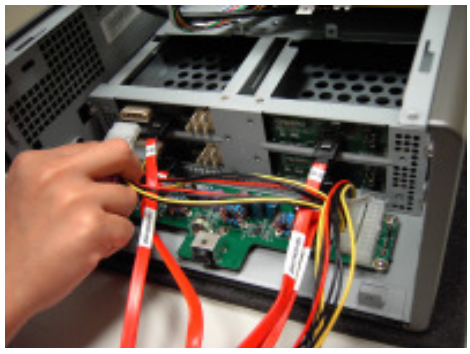
Connect the backplane cables:

1



■ The SATA cables (tagged P1~P4) are strongly recommended to connect following the port orders indicated as picture.

2



■ Connect the Big-4P power to the backplane

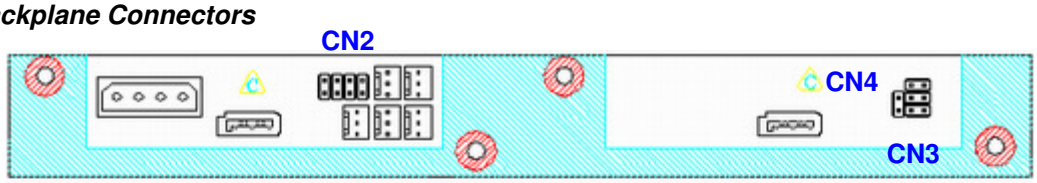
2-port SATA2 Backplane Introduction:

ES340 is integrated with two SATA2 backplanes to support four 3.5" HDD hot-swap feature. With dedicate backplane bracket assembled, users can directly attach the HDD on the tray and plug into the HDD slot.

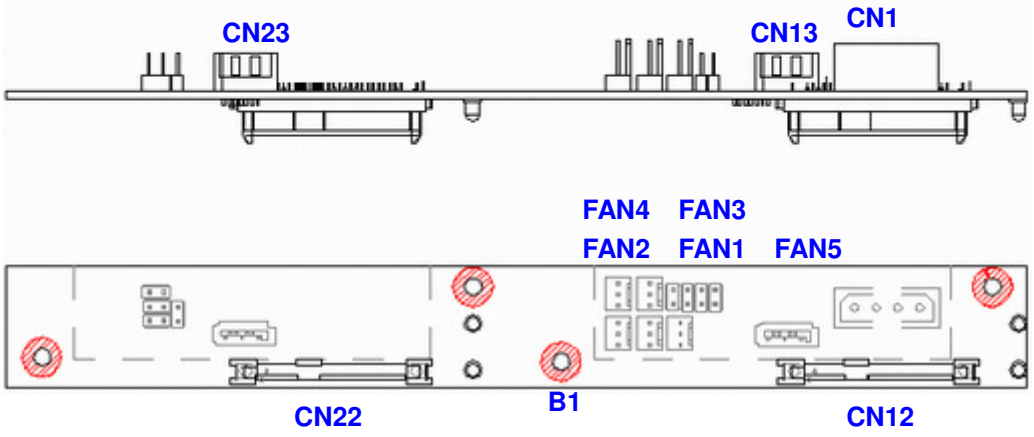
Hardware Specification:

Host Interface	*SATA 7-pin compatible*
HDD Interface	*SAS (22+7), SATA2 compatible*
Hot-Swap	*Yes, allows user to on line replace Hard Disk Drive*
Cooling	*Five Fan connectors*
Connectors	*1. SATA2 * 2 (to host)* *2. SAS (22+7) *2 (for HDD),* *3. Standard 4P Power connector * 1 for +5V, +12V from power supply* *4. PIN HEADE 4x2 PIN * 1* *5. PIN HEADE 3x2 PIN * 1* *6. CONN HEADER 2 PIN * 1*
Dimension	*232(L) x 27.4(W) x 1.6(H) mm*
Material	*FR4 4 layer*

Backplane Connectors



Rear View



Front View

(1) [CN12/CN22] : Connect "22+7"pin SAS connector to HDD

(2) [CN13/CN23] : SATA connector to Host

(3) [FAN1 / FAN2 / FAN3 / FAN4 / FAN5] : Fan connectors

(4) [CN1] : Power Connectors

(5) [CN2] : PIN HEADE 4x2 PIN * 1

(6) [CN3] : PIN HEADE 3x2 PIN * 1

CLIP SHORTING (SHORT)

(7) [CN4] : CONN HEADER 2 PIN * 1

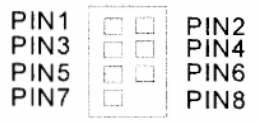
Pin Assignment

[CN2] **2.54 Pin Header**

FAN SPEED CLOCK

Pin	Def.	Pin	Def.
1	JF1 FAN1 CLOCK	2	JF5 FAN5 CLOCK
3	JF2 FAN2 CLOCK	4	5V
5	JF3 FAN3 CLOCK	6	GND
7	JF4 FAN4 CLOCK	8	KEY PIN

CN2- 2.54 Pin Header



[CN3] **2.54 Pin Header**

HDD ACCESS LED

Pin	Def.	Pin	Def.
1	HDD1 ACCESS SIGNAL (LOW ACTIVE)	2	HDD1 ACCESS LED (LOW ACTIVE)
3	HDD2 ACCESS SIGNAL (LOW ACTIVE)	4	HDD2 ACCESS LED (LOW ACTIVE)
5	NC	6	KEY PIN

CN3- 2.54 Pin Header

NORMAL

PIN 1 / PIN 2 SHORT

PIN 3 / PIN 4 SHORT

[CN4] **2.54 Pin Header**

HDD FAIL LED

Pin	Def.
1	HDD1 FAIL LED (LOW ACTIVE)
2	HDD2 FAIL LED (LOW ACTIVE)

CN4-2.54 Pin Header